Ref. No: TCE/EST/2023.2024/333   Date: 20/03/2024

3.3: Research Publications and Awards

Reference-

3.3.2.1 – Total number of books and chapters in edited volumes/books published and papers in national/international conference proceedings year wise during last five years

With the reference to the above subject, following documents are enclosed for the proof that Institution has published 311 book chapters/proceedings in edited volumes/books in national/international conference proceedings during last five years.

Dr. S. Riyazoddin
PRINCIPAL
THEEM COLLEGE OF ENGINEERING
(Principal)
Boisar 'East) Tal. & Dist. Palghar -401 501

Enclosures:-

(i)   Abstract of each book chapters/proceedings from A.Y. 2018-19 to A.Y. 2022-23

THEEM COLLEGE OF ENGINEERING
At. Village Betegaon, Near Union Park,
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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Summar Sheet of Published Books/Chapters

	A.Y. 2022-23		
S. No.	Name of the teacher	Title of the book/chapters published	Name of the conference
1	Krupa Pimple	Using Geotextile As Reinforcement To Increasing Soil Bearing Capacity Of Soil	THEEM-2023
2	N.G Hiremath	Treatment Of Sugar Industry Effluent Using Microbial Fuel Cells	THEEM-2023
3	Harshad Ranadive	Minimizing And Reducing Waste Generated In College Campus	THEEM-2023
4	Prof. Faiz Mohammad Khan	Removal Of Domestic Waste Water Impurities By Using Different Filter Media	THEEM-2023
5	Aatif Khan	Case Study Ob Building Cracks And Causes And Its Prevention	THEEM-2023
6	Ehtesham Ahmad	Experimental Study On Pervious Concrete Made Of Ccw And Steel Slag	THEEM-2023
7	Zulfiquar Ahmad	Solid Waste Management	THEEM-2023
8	N.G Hiremath	Partial Replacement Of Cement With Rice Husk Ash (Rha) In Concrete	THEEM-2023
9	Prof. Monika Pathare	Petcare: Petanimals Care Management And Health Website	THEEM-2023
10	Piyush Shah	Animal Detection Using Deep Learning	THEEM-2023
11	Mohd. Shakeel	Code Solution - A Simple Solution For Designing Web Pages & Api For Data Based On The Mern Stack	THEEM-2023
12	Shakeel Shaikh	An Open Source, Adaptable 'Ticket' Handling Framework Focused On B2B Applications	THEEM-2023
13	Pratik Khuthia	Data Privacy In The Ai Age: The Critical Need For Right-To-Be-Forgotten Techniques & Implementations In Artificial Intelligence	THEEM-2023
14	Prof. Khalil Pinjari	Malicious Web Content Detection Using Machine Learning	THEEM-2023

5	Mohd. Shakeel1	Smart Attendance System Using Opencv Face Recognition	THEEM-2023
16	Avnish Jaybahadur Yadav	Pothole Management	THEEM-2023
17	Ketaki Patil	News Aggregator And Fake News Detection Website	THEEM-2023
18	Prof. Mubashir Khan	Software Based Voice Assistant For Blind Using Ml	THEEM-2023
19	Shaikh Sharique Ahmad	Image Captioning Generator Using Lstm Based On Rnn Model	THEEM-2023
20	Sonali Karthik	Automatic System For Solar Grass Cutting Using Iot	THEEM-2023
21	Sneha Sankhe	Securing & Sharing The Document Using Blockchain And Ipfs Technologies	THEEM-2023
22	Sonali Karthik	Image Forgery Identification Using Deep Learning	THEEM-2023
23	Sharique Shaikh Ahmad	Nas And Media Server Using Raspberry Pi	THEEM-2023
24	Sharique Shaikh Ahmad	Prevention Of Drowning Incidents In Swimming Pool On Automated Vision Based Surveillance System	THEEM-2023
25	Kanad Sanjay Patil	Securing And Sharing The Document Using Blockchain	THEEM-2023
26	Prof. Shaikh Sharique Ahmad	Vehicle Accident Detection And Prevention Using Iot	THEEM-2023
27	Prof. Shaikh Sharique Ahmad	Smart Luggage Carrier With Real Time Tracking System Using Raspberry Pi	THEEM-2023
28	Sonali Karthik	A Systematic Augmented Reality Based Atm Model To Enhance Security And Safety	THEEM-2023
29	Sonali Karthik	A Deep Learning Approach For Reconstruction Of Images Using Auto-Encoder	THEEM-2023
30	Naeem Shaikh	Three-Phase Asynchronous Motor Using Industry 4.0 With Load Expedient	THEEM-2023
31	Sonali Karthik	Fruit Disease Detection Using K-Means Clustering Algorithm	THEEM-2023
32	Sneha Sankhe	Real -Time Tracking And Alert System For Stolen Laptops	THEEM-2023
33	Shaikh Sharique Ahmad	A Blockchain-Based Product Ownership Management System For Anti-Counterfeits In The Post Supply Chain.	THEEM-2023
34	Sneha Sankhe	Effective Approach Towards Hybrid Intrusion Detection For Cyber Attacks	THEEM-2023
35	Sneha Sankhe	Real-Time Speech Emotion Recognition Using Deep-Learning	THEEM-2023
36	Sonali Karthik	Steel Defect Detection Using Data Science Techniquesh	THEEM-2023

1	Sharique Shaikh Ahmad	Colorization Of Black And White Image Using Deep Learning	THEEM-2023
38	Sneha Sankhe	Improving Efficiency Of High Utility Pattern Mining Algorithm Using Adaboost, Random Forest And Svm	THEEM-2023
39	Sonali Karthik	Secure File System Using Hybrid Cryptography	THEEM-2023
40	Sharique Ahmad	Crowdfunding Using Smart Contract In Blockchain	THEEM-2023
41	Prof. Sneha Sankhe	Identification Of Birds Species Using Neural Network And Audio Signal	THEEM-2023
42	Prof. Sneha Sankhe	Traffic Control System Based On Image Processing Using Ssd Algorithm	THEEM-2023
43	Prof. Sneha Sankhe	Prediction Of Water Quality Using Ml And Iot	THEEM-2023
44	Prof. Sonali Karthik	Human Action Recognition System	THEEM-2023
45	Prof. Sneha Sankhe	Tracing Of Fake News On Twitter Using Blockchain	THEEM-2023
46	Prof. Patil Jagruti	An Open-Source Portfolio Builder Using Mern Stack	THEEM-2023
47	K.N. Attarde	Student'S Government A Webpage System Developed Using Html, Css, Javascript And Php	THEEM-2023
48	Shahegul Afroz	Digital Assistance For Elder People	THEEM-2023
49	Prof. Waseem Shaikh	Mood Based Mmm Suggestion System	THEEM-2023
50	Prof. Mubashir Khan	Online Bidding Using Mern	THEEM-2023
51	Prof. Ketaki Patil	Food Wastage Management And Donation	THEEM-2023
52	Monika Pathare	Music Streaming App Using Reactnative	THEEM-2023
53	Prof. Waseem Shaikh	Attendance System Based On Face Recognition	THEEM-2023
54	Prof. K.N. Attarde	College Enquiry Chatbot Using Nlp And Ml	THEEM-2023
55	Prof. Sneha Sankhe	Deepfake Detection Using Deep Learning	THEEM-2023
56	Yashesh Patel	Automatic Car Washer	THEEM-2023
57	Mohammed Wasim Khan	Literature Review On Design And Analysis Of Floater	THEEM-2023
58	Iqubal Mansuri	Solar Powered Water Purifier	THEEM-2023
59	Moin Sabri	Automated Seat Belt Integrated Hand Brake System	THEEM-2023
60	Mustafa Motiwala	Ultrasonic Radar System Using Arduino Measuring Distance And Angle	THEEM-2023
61	Iqubal Mansuri	Advance Parking System	THEEM-2023
62	Wasim Khan	Design And Analysis Of Parking Elevator Platform System	THEEM-2023

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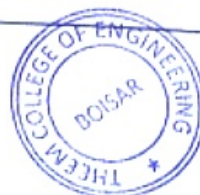|			
5	Mohammed Wasim Khan	Refrigeration Using Lpg Cylinder	THEEM-2023
64	Abdul Bari	Multiple Functions Security Device For Car	THEEM-2023
65	Irshad Shaikh	Design Of Three Wheel Electric Scooter A Personal Mobility Vehicle	THEEM-2023
66	Jay Velkar	Design And Fabrication Of Automated Lawn Mower	THEEM-2023
67	Noman Badar	Ramp Pump	THEEM-2023
68	Abdul Bari	Pollution Elimination Device	THEEM-2023
69	Minhaj Hashim	Elliptical Bicycle	THEEM-2023
70	Iqbal Mansuri	Experimental Investigation Of Radiator System Coolant Using Propylene Glycol	THEEM-2023
71	Moin Sabri	Hydraulic Drainage Cleaner	THEEM-2023
72	Nitin Galwade	Hydraulic Braking System	THEEM-2023
73	Md. Anwar Ali Anshari	Automatic Fire Suppression System In Automobiles	THEEM-2023
74	Sayed Owais Kausar	Three Phase Asynchronous Motor Using Industry 4.0 With Load Expedient	THEEM-2023
75	Raees Ahemad	Integrated Dc Dc Converter Based Grid Connected Transformer Less Inverter	THEEM-2023
76	Prof. Payal Gadgil	Electrical Energy Audit In Viraj Profiles Ltd. (Wire Division) Midc Tarapur	THEEM-2023
77	Navajyothi Katela	Speed Control Of Bldc Motor Using Iot	THEEM-2023

| S. No.	Name of the teacher	Title of the book/chapters published	Name of the conference
78	Prof. Naeem Sheikh	Analysis Of Hems (Ev, Pv, Ess, Rt Appliances) Using Matlab	THEEM-2023
79	Akash Saroj	Simulation And Hardware Design Of Single Phase Five Level Active Neutral Point Clamped Converter	THEEM-2023
80	Navajyothi Katela	Simulation Based In-Built Charging Hybrid Ev With Ic Engine & External Source	THEEM-2023
81	Nirajsingh Yeotikar	Rfid-Based Smart Public Transportation System	THEEM-2023
82	Aman Virendrakumar Mishra ,	Court Case Management System	THEEM-2023
83	Ajay Maurya	Why We Should Strive To Be An Entrepreneurial Engineer	THEEM-2023
84	Riyazoddin Siddiqui	An Improved Method For Face Recognition With Incremental Approach In Illumination Invariant Conditions	THEEM-2023
85	K.N. Attarde	Aahar: Homemade Food Delivery Application Using React Native, Expo And Aws Amplify	THEEM-2023
86	Apurva Mishra , Abhay Singh , Harish Shaikh , Rahul Sharma And Prof. Monika Pathare	Pet Care: Pet Animals Care Management And Health Website	THEEM-2023
87	Yaman Abdul Subhan Khan	Needs Of Professional Communication In Engineering	THEEM-2023
88	Amit Jitender Gupta	Communication Skills And Ethics	THEEM-2023
89	Dhiraj Milind Patil	Effect Of Communication Skills On Students Life	THEEM-2023
90	Mishra Nikhil Anil	Impact Of English Communication On Rural Area Engineering Students	THEEM-2023
91	Mohan Bagade	Needs Of Ethics In Engineering	THEEM-2023
92	Prof.M. S. Balasubramani	Impact Of Speech Anxiety On Students Public Speaking Skills	THEEM-2022
93	Ahamad Husen	Apache Zookeeper An Open Source Server	THEEM-2022
94	Prof. Iqbal Shaikh	Oderista: Online Food Ordering With Qr Code	THEEM-2022
95	Prof.Mohammed Wasim Khan	Literature Review On: Development Of Floater Material	THEEM-2022
96	Prof.Mohammed Wasim Khan	Literature Review On: Development Of Composite Material	THEEM-2022
97	Prof.Irshad Shaikh	Accident Prevention System Using Eye Blinksensor	THEEM-2022

		Design And Fabrication Of Gyrobike	THEEM-2022
99	Prof.Shafiq Shaikh		
	Prof.Uday Prajapati	Two Wheeler Air Bag System	THEEM-2022
100	Ibrahim I. Shaikh	Developing The Rat Repellent Strips To Mitigate The Problem Arising Due To Rat Biting In Automotive Wiring Harness In Economical And Effective Way	THEEM-2022
101	Prof.Mohd. Mustaque Ahmed	Iot Based Air Pollution Monitoring System	THEEM-2022
102	Dr. Ibrahim I. Shaikh	Design And Fabrication Of Adaptive Headlight System Using Ldr And Arduino Nano	THEEM-2022
103	Prof.Mohd. Mustaque Ahmed	Drag Reduction System Analysis On Tata Nexon	THEEM-2022
104	Bakhed Naim Mohammed Rasid	Design, Analysis And Fabrication Of Hubless Cycle	THEEM-2022
105	Prof.Shafiq Shaikh	Dual- Axis Solar Panel	THEEM-2022
106	Prof. Faiz Khan	Formation And Comparison Boimedical Waste Bricks	THEEM-2022
107	Prof. Ansar Sheikh	Energy Utilization Of Kinetic-Paving Technology	THEEM-2022
108	Prof. Faiz Khan	Self Illuminating Road	THEEM-2022
109	Prof. Faiz Khan	Movable Road Divider	THEEM-2022
110	Prof. Ehtesham Ahmed	Pavement Design On Liquified Soil	THEEM-2022
111	Navajyothi K	Mini Hydroelectric Power Plant	THEEM-2022
112	Ehtesham Ahmad	Generation Of Oil And Methane Gas By Using Waste Plastic	THEEM-2022
113	Faiz Mohammad Khan	Removal Of Oil And Grease Using Natural Adsorbents	THEEM-2022
114	Prof. Farhan Ali	Acoustic Of Sound Treatment	THEEM-2022
115	Prof. Farhan Ali	Common Effluent Treatment (By Phytorid Technology)	THEEM-2022
116	Prof. Zulfiquar Ahmend	Up Flow - Anaerobic Sludge Blanket Reactor (Uasb)	THEEM-2022
117	Prof. Arsalan Khan	Analysis And Optimization Of Pervious Concrete (Anvay Patil)	THEEM-2022
118	Prof. Faiz Khan	Removal Of Oil And Grease Using Different Natural Adsorbent	THEEM-2022
119	Prof.Muhib Lambay	Weather Application	THEEM-2022
120	Dr. Najmuddin Aamer	Traffic Sign Recognition	THEEM-2022
121	Prof.Ruchi Rahi	Ai Based Virtual Keyboard	THEEM-2022
122	Prof.Iqbal Shaikh	Forge: A Voice Mimicking Technology	THEEM-2022
123	Prof.Shahe Gul	Stock Market Prediction Using Machine Learning	THEEM-2022
124	Prof.Ruchi Rahi	E-Commerce Application Using Mern Stack (Gadgetkart.Com)	THEEM-2022

25	Prof.K. N Attarde	N-Market	THEEM-2022
126	Sharique Shaikh	Online Notes Portal And Ocr	THEEM-2022
127	Dr. Najmuddin Aamer	Kidney Stone Detection Using Deep Learning	THEEM-2022
128	Prof.Shahegul Afroz Prof.Sheeba Naaz Prof. Rahatullah Khan	Modified Fractional Frequency Reuse Technique To Reduce Interference In Lte Networks Shahegul Afroz, Sheeba Naaz And Rahatullah Khan	THEEM-2022
129	Prof. Navajyothi Katela	Four Quadrant Speed Control Of Dc Motor With The Help Of Microcontroller	THEEM-2022
130	Prof. Navajyothi Katela	Mini Hydroelectric Power Plant	THEEM-2022
131	M. S. Balasubramani	Paralinguistics – A Key For The Audience Fully Understand The Essence Of Speech And Conversation	THEEM-2022
132	Prof. Sheeba Naaz, Shahegul Afroz And Mr. Rahatullah Khan	Feature Extraction Of Thermal Images For Fruit (Banana) Contamination	THEEM-2022
133	Prof.Sonali Karthik	Cancer Prediction Using Naivebayes	THEEM-2022
134	Prof.Sonali Karthik	Movie Recommendation System Using Sentiment Analysis	THEEM-2022
135	Prof.Sonali Karthik	Cryptography Based Messenger App	THEEM-2022
136	Prof. Sneha Sankhe	Promoting Healthcare In Rural Areas	THEEM-2022
137	Prof. Sneha Sankhe	Fraud Miner: Credit Card Fraud Detection Using Frequent Itemset	THEEM-2022
138	Sonali Karthik	Credit Card Scam Detection Using Machine Learning	THEEM-2022
139	Prof. Sneha Sankhe	Organ Donation Application And Web Service	THEEM-2022
140	Prof. Sneha Sankhe	Mental Health Awareness & Positive Lifestyle Application	THEEM-2022
141	Prof. Sneha Sankhe	Twitter Sentiment Analysis Using Machine Learning	THEEM-2022
142	Prof. Sneha Sankhe	Virtual Assistant For The Visually-Impaired	THEEM-2022
143	Prof. Sneha Sankhe	Fake News Detection Using Machine Learning	THEEM-2022
144	Prof. Sharique Ahmed	Email Spam Predictor	THEEM-2022
145	Prof. Sharique Ahmed	Social Media Web Filtering	THEEM-2022
146	Prof. Snehanka Gupta	Student Attendance System Using Fingerprint	THEEM-2022
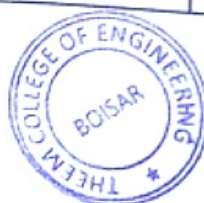
7	Surayya T. Shaikh	Fingerprint Based Attendance System	THEEM-2022
148	Prof. Snehanka Gupta	Alcohol Detection With Engine Locking System	THEEM-2022
149	Prof. Sheetal Solanki	Attendance System Using Android	THEEM-2022
150	Prof. Sheetal Solanki	Three Level Authentication Systems	THEEM-2022
151	Prof. Sheetal Solanki	Mentor Application System	THEEM-2022
152	Prof.Iqbal Mansoori	Design And Fabrication Of Groundnut Sheller	THEEM-2022
153	Prof.Iqbal Mansoori	Analysis Of Combustion And Emission Parameter Of Ci Engine Using Waste Transformer Oil As Alternative Fuel	THEEM-2022
154	Prof.Md Saqib Ansari	Design And Fabrication Of Dynamic Wheelchair	THEEM-2022
155	Md. Saqib Ansari	Design And Fabrication Of Compost Machine	THEEM-2022
156	Prof.Sajid Ahmed Shaikh	Multipurpose Sieving Machine	THEEM-2022
157	Adil Shaikh	Online Second Hand Vehicle Buying & Selling	THEEM-2022
158	Siddique Faiz Mohammed	Spring Loaded Knee Braces Using 3D Manufacturing	THEEM-2022
159	Prof.Iqbal Mansoori	Generation Of Power By Waste Heat Of Automobile	THEEM-2022
160	Sneha Sankhe	Shop Now Ecommerce Website	THEEM-2022
161	Prof.M. A. Gulbarga	Design And Fabrication Of Portable Ppe Kit Sterilization	THEEM-2022
162	Prof.Yusuf Rehman	Power Generator Through Exhaust	THEEM-2022
163	Prof.Iqbal Mansoori	Design And Fabrication Of Electric Forklift	THEEM-2022
164	Prof.Iqbal Mansoori	Design Of Sand Blasting Machine	THEEM-2022
165	Prof.Iqbal Mansoori	Multipurpose Wheel Hoe For Cost And Work Efficient Farming	THEEM-2022
166	Prof.Iqbal Mansoori	Remote Controlled Rover Using Rocker Bogie Mechanism	THEEM-2022
167	Prof.Sajid Ahmed Shaikh	Performance On Shell And Tube Heat Exchanger	THEEM-2022
168	Sayyad Layak B	Motorized Stairlift	THEEM-2022
169	Prof.Harshal Ahire	Pipe Inspection Robot	THEEM-2022
170	Prof.M. A. Gulbarga	Craby Steering System	THEEM-2022
171	Prof.Abdul Bari	Foot Operated Washing Machine	THEEM-2022
172	Prof.Iqbal Mansoori	Design & Fabrication Of Multi-Purpose Mechanical Machine	THEEM-2022
173	Zahid Patel	Briquetting Machine	THEEM-2022

| 174	Prof.M. A. Gulbarga	Solar Powered Portable Peltier Refrigerator	THEEM-2022
175	Prof.Iqbal Mansoori	Centrifuge Liquid Separation Machine	THEEM-2022

| A.Y. 2020-21		
S. No.	Name of the teacher	Title of the book/chapters published	Name of the conference
176	Dr.N.K.Rana, Dr. Aqueel Shah	Design Science and Innovation	HWWE-2020
177	M. S. Balasubramani,Dr. Najmuddin Aamer,Shrikrishna R. Sonawane	Cognitive Psychology and Student-Centred Pedagogy for Students Creativity: An Analytical Study	HWWE-2020
178	Shaikh Sajid Ahmad	Study On Abc Analysis Of Stores Material At Manufacturing Organization	IJHREM
179	Dr.N.K.Rana	Novel Framework for Neural Machine Translation of Indian-English Languages	IEEE Xplore
180	Dr.N.K.Rana	A Review of Current Trends in the Development of Chatbot Systems	IEEE Xplore
181	Dr.N.K.Rana	Impact of Machine Learning in Natural Language Processing: A Review	IEEE Xplore

S. No.	Name of the teacher	Title of the book/chapters published	Name of the conference
182	Dr. Emily Chattopadhyay	High Tc Superconductivity: An Overview	THEEM-2020
183	Anil Yadav	Analysis Of Copper Vs Aluminum Winding Motors	THEEM-2020
184	Wasim Khan	A Literature Review On Design And Analysis Of Electric Motorcycle	THEEM-2020
185	Afzal Shaikh	Automatic Changeover Switch	THEEM-2020
186	Prof. Ahamad Shekh	Agmented Reality In Medical Science - A New Vision	THEEM-2020
187	Dr. Shilpa Satish Waghchoure	Applications Of Cloud Computing For Library Management System	THEEM-2020
188	Prof. Rahatullah Khan	Anti-Theft System Based On Gsm And Gps Module	THEEM-2020
189	Mohammed Suhail Shaikh	College Application For Parents	THEEM-2020
190	Mustaque Mohammad	A Literature Review On Wireless Charging System For Vehicles By Using Flemings Method To Charge The Vehicle Battery	THEEM-2020
191	Elahi Shaikh	High Voltage Marx Generator Using Mosfet	THEEM-2020
192	Elahi Shaikh	Efficient Speed Control Of Three Phase Induction Motor Using Vector Control Method	THEEM-2020
193	Prof. Surayya T. Shaikh	Arduino Based Smart Irrigation System	THEEM-2020
194	Shahfaisal Shaikh	Self-Charging Car	THEEM-2020
195	Prof. Asharf Siddiqui	Vehicle Charging System Using Rfid	THEEM-2020
196	Mustafa Siddiqui	Schedule Management System	THEEM-2020
197	Mohd. Raees	Review On Strong Hybrid Electrical Vehicle	THEEM-2020
198	Prof. Rahatullah Khan	Review & Proposed Brain Controlled Motor Vehicle Using Electroencephalogram (Eeg)	THEEM-2020
199	Prof. Raees Ahmad	Review & Proposed Control System Scheme For Transient Stability	THEEM-2020
200	Athang Pawar	Review On 3D Simulation Of Fixed Wing Aircraft	THEEM-2020
201	Prof. Awani Sankhe	A Survey On Hacking Methodology	THEEM-2020
202	Tasneem Azam	A Study On Carbon, Capture & Storage In Cement Industry	THEEM-2020
203	Mohd. Raees	Investigation Of Design Of Photovoltaic Dry Cleaner Robot	THEEM-2020
204	Mohd. Raees	Recent Trends In Mild Hybrid Vehicles(An Overview)	THEEM-2020
205	Mohammad Sami Malik	Design And Fabrication Of Loop Wheel Suspension System For Wheelchair	THEEM-2020
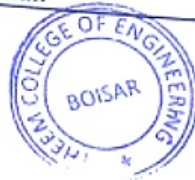
206	Mohammad Sami Malik	Design And Development Of Delta 3D Printer	THEEM-2020
207	Mohasin Mallick	Smart Traffic Control And Management System	THEEM-2020
208	Nitin Sall	Literature Review On Design A Recue Raft For Flooded Floating Car	THEEM-2020
209	Majid Shaikh	Developing Cooling System For Injection Moulding Dies	THEEM-2020
210	Mustaque Mohammad	Design And Fabrication Of Farmbot	THEEM-2020
211	Prof. Sanketi Raut	Quantum Communication - Hack Proof Communication Technology	THEEM-2020
212	Nitin Sall	Literature Review On Design And Fabrication Of Path Following Cart	THEEM-2020
213	Wasim Khan	Literature Review On: The Electric Bike	THEEM-2020
214	Ansar Sheikh	New Eco-Friendly Gypsum Materials For Civil Construction	THEEM-2020
215	Rajesh Patil	Chabot Using Python	THEEM-2020
216	Snehal Pawde A	Laplace Transforms And Inverse Laplace Transforms With Its Properties	THEEM-2020
217	Tasneem Azam	Intelligent Transport System Using Global Information System	THEEM-2020
218	Prof. Ashraf Siddiqui	Botnet Detection Using Anomaly Based And Behavior Based Detection	THEEM-2020
219	Faizan Kapadia	A Study On Bamboo Sticks / Culm Uses In Civil Construction As Structural Alternative To Steel Rods	THEEM-2020
220	Basavaraj.N	Experimental Investigation On Behavior Of Bamboo Reinforced Concrete Beam	THEEM-2020
221	Zulfiquar Ahmad	Disaster Management In India	THEEM-2020
222	Aditya Patel	Iot Based Smart Parking System	THEEM-2020
223	Harshad Ranadive	Comparative Study And Optimization Of Structural Steel In Industrial Structures	THEEM-2020
224	Ruchi Rahi	Manhole Detectionsystem	THEEM-2020
225	Ruchi Rahi	Peer To Peer File Sharing	THEEM-2020
226	Khalil Pinjari	Vulnerability Assessment And Penetrationtesting Using Raspberry-Pi Remotely	THEEM-2020
227	Khalil Pinjari	Digital Image Watermarking Using Dwt & Chirp-Z Transform	THEEM-2020
228	Khalil Pinjari	Fanet Using Honeypot Scheme	THEEM-2020
229	Muhib Lambay	Health Directories Based On Android Application	THEEM-2020
230	Sarita Tiwari	Affected Area And Disease Detection In Leaf Using Machine Learning	THEEM-2020
231	Prashant Rathod	Virtual Mentoring System	THEEM-2020
232	Prashant Rathod	Youtube Fake Video Detection	THEEM-2020
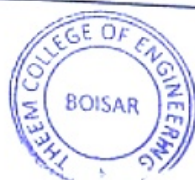
233	Syed Tanzeem	Cloud Development For The Department: Project Tracking System	THEEM-2020
234	Prof. Rajat Singh	Smart Water Distribution System	THEEM-2020
235	Ashraf Siddiqui	Big Data Analytics	THEEM-2020
236	Awani Sankhe	Big Data Analytics	THEEM-2020
237	Navajyothi Katela, Aqsa Shaikh	Comparison Of Pi And Fuzzy Controlled Active Power Filter Under Non-Linear Loads	THEEM-2020
238	Prof. Faiz Muhammad Khan	Comparsion And Performance Of Rooted And Submerged Plants For Minimization Of Arsenic By Phytoremediation Technique	THEEM-2020
239	Naeem Shaikh	Protection, Monitoring, Controlling And Load Sharing Of 3-Phase Induction Motor Using Iot	THEEM-2020
240	Aqsa Shaikh	Simulation Of Reverse Power Relay For Generator Protection	THEEM-2020
241	Raees Ahmad Noor Mohammad	Literature Review On Medical Imaging Using Machine And Deep Learning Algorithms	THEEM-2020
242	Navajyothi Katela	360* Sun Tracking With Automated Cleaning System For Solar Pv Modules	THEEM-2020
243	Dr. A. Jyothi Kumari	Verbal Propensity For Employment – A Practical Approach	THEEM-2020
244	Priyanka Patil	Strategies For Improving Interview Skills In Students	THEEM-2020
245	Anjali Gharat	Sql Database And Nosql Database Comparison	THEEM-2020
246	Prof. K.N.Attarde	Smart Energy Metering System	THEEM-2020
247	Prof. Sanketi Raut5	Smart Automated Irrigation System With Disease Prediction	THEEM-2020
248	Navajyothi Katela	Solar Powered Drip Irrigation System Using Moisture Sensor And Wireless Network Technology	THEEM-2020
249	Aqsa Shaikh	Implementation Of Speed Control Of Dc Motor In Matlab Using Fuzzy Logic Controller Techniques	THEEM-2020
250	Aqsa Shaikh	Simulation Of Direct Torque Control Of Induction Motor Based On Space Vector Modulation	THEEM-2020
251	Tejas Thakur	Review On Modelling Of Quadcopter Based On Iot	THEEM-2020
252	Naeem Shaikh	Review On Electrical Audit-An Improvised Lighting Scheme	THEEM-2020
253	Rosy Bhoi	A Study On Block Chain Implementation In Healthcare System	THEEM-2020
254	Aqsa Shaikh	Implementation Of Ultra-Wide Band Marx Generator With Improvised Pfn Topology For Antenna Load	ICPS-2019
255	Jayshreee Sail	Speed Control Of Three Phase Im Using Vfd	THEEM-2020

256	Syed Amjad Ali	Digital Image Watermarking Using Dwt & Chirp-Z Transform	THEEM-2020
257	Rajesh Patil	Chatbot Using Phthon	THEEM-2020
258	Dr. N K Rana	Review Of Chatbot Systems With Reference To Knowledge & Accuracy	THEEM-2020
259	K.N Attarde	Smart Energy Mentoring System	THEEM-2020
260	Chinmayi Satave	Iot Based Home Automation	THEEM-2020
261	Dr. Shah Akheel Ahmed Shah	Identification Of Fruits Using Hsv Filter	THEEM-2020
262	Jagruti Patil	Face Detection Attendance System- Face Detection Technology	THEEM-2020
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267	Kashif Shaikh	Implementation Of Vanet	THEEM-2020
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S. No.	Name of the teacher	Title of the book/chapters published	Name of the conference
309	Prof. Ubaid Ansari	Numerical Analysis Of Titanium And Stainless Steel Intramedullary Rod	THEEM-2020
310	Mr.Wasim Khan	Conversion of Mono Wheel IC Engine Bike to Mono Wheel E Bike	IC-AMCE
311	Mr.Nitin Sall	Design of Blanking Die for Hexagonal Sizing Operations	IC-AMCE

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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five

Links for the books & chapters

S. No.	Name of the teacher	Title of the book/chapters published	Links
1	Krupa Pimple	Using Geotextile As Reinforcement To Increasing Soil Bearing Capacity Of Soil	https://tinyurl.com/ycxj6fmx
2	N.G Hiremath	Treatment Of Sugar Industry Effluent Using Microbial Fuel Cells	https://tinyurl.com/ycxj6fmx
3	Harshad Ranadive	Minimizing And Reducing Waste Generated In College Campus	https://tinyurl.com/ycxj6fmx
4	Prof. Faiz Mohammad K	Removal Of Domestic Waste Water Impurities By Using Different Filter Media	https://tinyurl.com/ycxj6fmx
5	Aatif Khan	Case Study Ob Building Cracks And Causes And Its Prevention	https://tinyurl.com/ycxj6fmx
6	Ehtesham Ahmad	Experimental Study On Pervious Concrete Made Of Ccw And Steel Slag	https://tinyurl.com/ycxj6fmx
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8	N.G Hiremath	Partial Replacement Of Cement With Rice Husk Ash (Rha) In Concrete	https://tinyurl.com/ycxj6fmx
9	Prof. Monika Pathare	Petcare: Petanimals Care Management And Health Website	https://tinyurl.com/ycxj6fmx
10	Piyush Shah	Animal Detection Using Deep Learning	https://tinyurl.com/ycxj6fmx
11	Mohd. Shakeel	Code Solution - A Simple Solution For Designing Web Pages & Api For Data Based On The Mern Stack	https://tinyurl.com/ycxj6fmx
12	Shakeel Shaikh	An Open Source, Adaptable 'Ticket' Handling Framework Focused On B2B Applications	https://tinyurl.com/ycxj6fmx
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14	Prof. Khalil Pinjari	Malicious Web Content Detection Using Machine Learning	https://tinyurl.com/ycxj6fmx

15	Mohd. Shakeel1	Smart Attendance System Using Opencv Face Recognition	https://tinyurl.com/ycxj6fmx
16	Avnish Jaybahadur Yada	Pothole Management	https://tinyurl.com/ycxj6fmx
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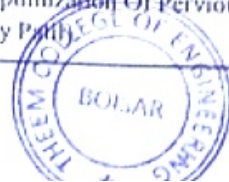| 38 | Sneha Sankhe | Improving Efficiency Of High Utility Pattern Mining Algorithm Using Adaboost, Random Forest And Svm | https://tinyurl.com/ycxj6fmx |
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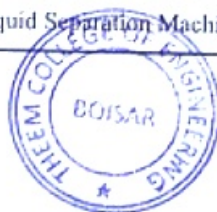| 65	Irshad Shaikh	Design Of Three Wheel Electric Scooter A Personal Mobility Vehicle	https://tinyurl.com/ycxj6fmx
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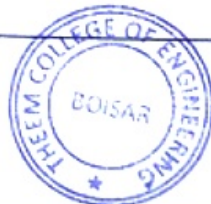
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3.3: Research Publications and Awards

3.3.2.1 – Total number of books and chapters in edited volumes/books published and papers in national/international conference proceedings year wise during last five years

Index for 3.3.2.1

S. No.	Year	No. of Books/Chapters	Page No.
2	2022-23	77	1-77
3	2021-22	84	78-175
4	2020-21	06	176-181
5	2019-20	128	182-309
6	2018-19	02	310-311

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Teachers List during last five years (A.Y.2018-19 to A.Y. 2022-23)

S. No.	Name of the Full-time teacher	Designation
1	MUSTAQUE AHMED	Assistant Professor
2	IRSHAD SHAIKH	Assistant Professor
3	SAMI MALIK	Assistant Professor
4	ANSARI NADEEM AHMED	Assistant Professor
5	MOHD SAQIB ANSARI	Assistant Professor
6	DHODI SHUBHAM	Assistant Professor
7	KHAN IBRAHIM	Assistant Professor
8	MANE ABHISHEK	Assistant Professor
9	Dr. NIRDOSH KUMAR RANA	Professor
10	ATTARDE KHEMCHANDRA NATHU	Associate Professor
11	YEOTIKAR NIRAJSINGH RAJENDRASINGH	Assistant Professor
12	DR. EMILY GHOSH	Associate Professor
13	SNEHAL GOPAL PATIL	Assistant Professor
14	SHAIKH SAJEED	Assistant Professor
15	SUBRAMANI M S BALASUBRAMANI	Assistant Professor
16	SHAIKH ARBIYA	Assistant Professor
17	DHANDE PRIYANKA	Assistant Professor
18	BAGWAN MOHAMMED AYAZ	Assistant Professor
19	ABID MANYAR	Assistant Professor
20	KAZI AZEEMUDDIN	Assistant Professor
21	BARI APEKSHA	Assistant Professor
22	BARI HIMANSHI	Assistant Professor
23	SINGH SHALU	Assistant Professor
24	ROSY BHOI	Assistant Professor
25	SNEHA SANKHE	Assistant Professor
26	AHMAD RAFIGUEE	Assistant Professor
27	SONALI KARTHIK	Assistant Professor
28	SHAIKH SHARIQUE AHAMAD	Assistant Professor
29	RAUT TWINKLE	Assistant Professor
30	KAREKAR PRADNYA	Assistant Professor
31	PATIL PRIYANKA	Assistant Professor
32	SOLANKI SHEETAL	Assistant Professor
33	PATIL SIMRAN	Assistant Professor
34	Dr. RIYAZODDIN SIDDIQUI	Professor
35	KHALIL PINJARI	Assistant Professor
36	IQBAL SHAIKH	Assistant Professor
37	SHAHEGUL AFROZ	Assistant Professor
38	KETAKI PATIL	Assistant Professor
39	MONIKA PATHARE	Assistant Professor

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40	RUCHI RAHI	Assistant Professor
41	TAMBADE SUCHITA	Assistant Professor
42	MALI PREETI	Assistant Professor
43	PATIL SARIKA	Assistant Professor
44	CHAUDHARY SALEEM PASHA	Assistant Professor
45	PATIL RAJESH MAHADEV	Assistant Professor
46	SYED AMJED IFTEQUAR	Assistant Professor
47	ANSARI MOEENUDDIN	Assistant Professor
48	SHAIKH ANSAR AHESANUDDIN	Assistant Professor
49	SHEEBA NAAZ	Assistant Professor
50	RAEES AHMAD	Assistant Professor
51	RAHATULLAH KHAN	Assistant Professor
52	NAEEM SHAIKH	Assistant Professor
53	FURKAN HASAN	Assistant Professor
54	NAVAJYOTHI KATELA	Assistant Professor
55	AQSA SHAIKH	Assistant Professor
56	TAMORE MEGHANA	Assistant Professor
57	NAGARUPU REKHA	Assistant Professor
58	DR. ARSHAD MOHAMMAD	Associate Professor
59	AHAMAD ASFAQ	Assistant Professor
60	MORE MADHURI	Assistant Professor
61	KUMAR PANKAJ	Assistant Professor
62	GADGIL PAYAL	Assistant Professor
63	SANKHE OMKAR	Assistant Professor
64	WASIM KHAN	Assistant Professor
65	AHIRE HARSHAL MADHUKAR	Assistant Professor
66	SHAKIR HUSSAIN ANWAR HUSSAIN	Assistant Professor
67	MANSURI IQUABAL HUSEN	Assistant Professor
68	SIDDIQUI MOHD IMRAN	Assistant Professor
69	WANKHADE SURAJ	Assistant Professor
70	Dr. SAYYAD LAYAK	Associate Professor
71	ANSARI ZAID AHMAD	Assistant Professor
72	RAHAMAN MOHD YUSUF	Assistant Professor
73	SABRI MOIN	Assistant Professor
74	SHAIKH ABDUL BARI	Assistant Professor
75	HASHIM MINHAJ	Assistant Professor
76	BADER NOMAN	Assistant Professor
77	ZULFIQUAR AHMAD	Assistant Professor
78	HIREMATH NAGENDRASWAMI	Assistant Professor
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80	EHTESHAM AHMAD	Assistant Professor
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85	KADBHANE RUPALI	Assistant Professor
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87	PIMPLE KRUPA	Assistant Professor

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89	TEJAS THAKUR	Assistant Professor
90	SHAFIQ SHAIKH	Assistant Professor
91	UDAY PRAJAPATI	Assistant Professor
92	DEORE TILOTTAMA VISHWASRAO	Assistant Professor
93	A KUMAR	Associate Professor
94	SONAWANE SHRIKRISHNA	Assistant Professor
95	YADUR K. GEETA	Assistant Professor
96	AHMAD HUSAIN SHAIKH	Assistant Professor
97	KRUNAL PIMPLE	Assistant Professor
98	SYED TANZEEM	Assistant Professor
99	RAJAT D SINGH	Assistant Professor
100	PRASHANT RATHOD	Assistant Professor
101	MUHIB A LAMBAY	Assistant Professor
102	DR. NAJMUDDIN AAMER	Professor
103	MAYA PATIL	Assistant Professor
104	SHAIKH SURRYA	Assistant Professor
105	MINAL BHOIR	Assistant Professor
106	AFJAL SHAIKH	Assistant Professor
107	DR. SHAH AQUEEL AHMED	Professor
108	M A GULBARGA	Associate Professor
109	RAUT TEJAL DINKAR	Assistant Professor
110	ANSARI SHADAB AZHAR NAZEER IQBAL	Assistant Professor
111	IMRAN HASSAN	Assistant Professor
112	MOMIN AKHTARHUSEN SHAUKATHUSEN	Assistant Professor
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125	NIMBALKAR AMIT ANIL	Assistant Professor
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132	DUBEY SANTOSH S	Assistant Professor
133	Dr. MANTHA A. JYOTHIKUMARI	Assistant Professor
134	Mr. KHADSE CHANDAN	Assistant Professor
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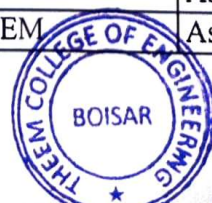
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146	Mr. SHIMPI NILESH	Assistant Professor
147	Mr. NABI AZHAR	Assistant Professor
148	Mr. MANE AMIT	Assistant Professor
149	Mr. CHAVAN JITENDRA	Assistant Professor
150	Mr. MAURYA PRAMOD	Assistant Professor
151	Mr. SALL NITIN	Assistant Professor
152	Mr. PUSHKARINY BHIMANNA	Assistant Professor
153	SHAH WASEEM SULTAN QAISAR PARVEZ	Assistant Professor
154	WANJARI YOGESH WAMANRAO	Assistant Professor
155	SAYYED ASHFAQ	Associate Professor
156	DANGE ANAS SAMI AHMED	Assistant Professor
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159	NIKAM KETAN GAJANAN	Assistant Professor
160	DODDAMANI MOHD ARIF ISMAIL	Assistant Professor
161	REDDY SUDHIR R	Assistant Professor
162	KHAN MD INAYAT SHADUL KHAN	Assistant Professor
163	SAYYED SARJEEL RAFIQUE AHMAD	Assistant Professor
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Using Geotextile as Reinforcement for Increasing Soil Bearing Capacity

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ABSTRACT

Geotextiles are generally used for tensioning and separation in road construction to prevent relocating and intermingling materials and thus enabling the free movement of water. The geotextile network should be stable enough not to difficulties would arise in porting, installation and repairs in the future. It is commonly divided into two categories Woven and non-woven geotextiles. Properties of geotextiles such as ductility, tensile strength, diffusion permeability, flexibility are largely influenced by its molecular weight. Polyamide, polypropylene, Polyester and polyethylene are the four main raw materials used in the manufacture of geotextiles.

Keywords: Geotextile, Flexibility, Elongation, Strength, Bearing.

1. INTRODUCTION

Road pavement, as part of the road infrastructure, plays a very important role in road performance and in constructing safe and smooth surfaces. The subgrade layer of the road may be a compacted layer of dike, available natural or improved soil. The subgrade material is prepared according to the geotechnical properties and the first layer of pavement is placed over it. The subgrade which is ultimately considered as the pavement foundation and bears the entire load of the pavement body and vehicles. Therefore, it is of utmost importance to construct pavements with high bearing capacity and life span as well as to maintain them in proper working condition. A pavement body is usually composed of several layers including subgrade, sub-base, base and asphalt.

2. LITERATURE REVIEW

In a check of numerous papers, all authors have concentrated on study the use of geotextiles in civil construction systems for soil filling to ameliorate soil characteristics. To make poor soil more manageable. Enabling construction in otherwise unsuitable locations. Finding the load per soil settlement and managing the sediment content and size of soil particles in the sub base layer. In[1] experimental study was conducted to improve the bearing capacity of soils using geotextiles. In this study, goutte (gunny bag) is used as geotextile, while sand is used as soil medium. This research presents the results of laboratory load tests on model square foundations supported on a reinforced sand bed.[2] Reinforced soil foundation construction for shallow foundation support has considerable potential as a cost-effective alternative to conventional foundation support methods. In this technique, one or more layers of geosynthetic reinforcement are placed under the base to create a composite material with improved performance characteristics.[3] small-scale model tests to evaluate the potential benefits of reinforced soil under shallow foundations. Since the ability of the geotextile to reinforce such systems is derived from the friction at the soil-geotextile interface, the tests were performed using sand as the backfill material.[4] This study investigates the improvement of the bearing capacity of a clayey soil with a thin layer of sand on the surface and the placement of geogrids at different depths. Model tests were performed for a rectangular foundation resting on soil to establish the load versus settlement curves of the unreinforced and reinforced soil system.[5] and [6] Soil stabilization methods for modifying and improving the physical and engineering properties of soil to achieve a set of predetermined goals. In many engineering applications, the use of geotextiles is considered an effective method for soil improvement. Research results indicate that when geosynthetics are placed between the subgrade and subgrade, the bearing capacity of fine-grained subgrades is increased.

3. METHODOLOGY

Treatment of Sugar Industry Effluent using Microbial Fuel Cells

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Abstract— Water pollution on a global scale is a severe problem. When contaminants are put into the natural environment, such as lakes, rivers, seas, and groundwater, they cause waterborne illnesses. Businesses that contribute to water pollution include those in the chemical and pharmaceutical industries, sugar firms, steel plants, coal, soap and detergent companies, paper and pulp companies, distilleries, tanneries, food processing facilities, and others. India is both the world's greatest user and the second-largest producer of sugar.

Because of this, the volume of wastewater produced by the sugar industry has also grown. Heavy metals, sulphates, chlorides, and oil and grease nutrients are all present in the wastewater from the sugar industry. The "Microbial Fuel Cell" Treatment Method was used to decrease the numerous contaminants found in the synthetic waste water of the sugar industry.

Due to the high cost of proton exchange membranes, Salt-bridge is a more affordable choice for constructing a microbial fuel cell. The efficacy of microbial fuel cells was assessed by altering the agar concentration during the formation of a slat-bridge using sugar industrial effluent as the substrate.

Keywords—Microbial Fuel Cell; Salt Bridge; COD, BOD, and TDS

1.INTRODUCTION

Rapid industrialization and urbanisation have a detrimental effect on the collection, handling, and disposal of effluents in emerging countries like India. This has serious implications for environmental concerns and public health. Components of unmanaged organic waste from industries, governments, and the agricultural sector poison the land, water, and air on a massive scale. Trash management and disposal is currently the largest environmental problem the world is facing.

Due to their high organic content, agricultural waste, residential garbage, and industrial waste are the finest substrates for energy generation. The use of microbial fuel cells (MFCs) is one of the approach for wastewater treatment that shows promise. Due to its efficiency and capacity to generate bioelectricity from renewable sources like wastewater, MFC have grown in significance over the past few decades. A potential technique for concurrent energy generation and wastewater treatment, microbial fuel cells (MFCs) are special devices that may use microorganisms as catalysts to transform chemical energy into electricity under anaerobic conditions.

In MFCs, electricity has been produced from a variety of organic substances, including proteins, fatty acids, and carbohydrates. During product manufacture and processing, the sugar business produces undesired leftover liquid waste. Each tonne of crushed sugarcane produces around 1000 litres of effluent in the sugar industry. Sugar industrial effluent has a high BOD concentration, which lowers the dissolved oxygen content of water bodies, making them unhealthy for both aquatic life and human usage. Its impact on pollution is one of the most important environmental problems. Numerous clean up techniques have been used, and innovative bioremediation methods are being considered for the treatment of wastewater from the sugar sector.

In terms of wastewater treatment, the MFC stands out for three reasons: energy savings, a reduction in sludge generation, and a reduction in energy consumption. The ability to remediate various wastewaters has been thoroughly investigated in several studies. Multiple pollutants, including biological wastes, heavy metals, polyalcohol, petroleum product colours, phenol and phenolic compounds, furan, quinolone, and pyridine derivatives, have been shown to be removed using MFCs. However, real wastewater must be used to test MFCs' performance before they can be put into use.

2. REVIEW OF LITERATURE

Minimizing and Reducing Waste Generated in College Campus

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ABSTRACT

Waste management is an integral part of the supply chains that we rely on. Due to exponential growth of population, there has been a remarkable increase in everyday waste wherein important our country where safe and sustainable practices are scarce and waste management has not been adequately regulated.

This paper examines the technical, economical and environmental aspects of waste management that can be practiced at educational campus in Boisar. This study emphasizes the collection and management of waste at college campus itself and then converting the waste into a sustainable energy resource. This study also suggests the use of Bio-gas plant at college campus for organic waste management, a separate E-waste recycling plant for e-waste management and a plant which can convert paper waste into other useful items. This study states that this practice will also lead to zero waste generation in campus and also the biogas can be used in campus canteens, the manure released can be used as fertilizer for plants and the paper waste can be converted into food plates and glasses etc. This study states that this practice will not only reduce the generation of waste to some extent but also convert it into a sustainable energy. Which can be used in college campus. This study also states that if these practices are adapted by other universities, it could create a significant impact on waste generation.

Keywords: Waste management, Biogas, College campus.

1. Introduction

The reduction of garbage produced on college campuses is a critical issue since it not only contributes to environmental protection but also helps to conserve resources and cut costs. Many techniques, such as recycling, composting, reducing food waste, and introducing sustainable practices, can reduce waste on college campuses. Recycling is one of the most efficient strategies to reduce waste on college campuses. Recycling bins should be positioned in conspicuous areas around the campus, and faculty and staff should be urged to properly utilize them. To make sure that the right materials are put in the right bins, recycling containers should be clearly labelled.

Composting is a further efficient way to cut trash on college campuses. Composting may produce nutrient-rich soil for gardening and landscaping from organic waste such as paper, garden trimmings, and food leftovers. By segregating their organic waste from other types of garbage, colleges can set up composting facilities on their campuses and encourage employees and students to participate.

Another crucial component of waste reduction on college campuses is the decrease of food waste. This can be accomplished by encouraging staff members and students to just take what they actually need and refraining from overserving meals. Food that is still usable can be given to charities or food banks in your community.

In addition to these actions, universities can take sustainable ones including adopting energy-saving appliances and lighting, conserving water, and using eco-friendly cleaning supplies. By promoting the use of reusable water bottles, encouraging students to take public transit or carpool, and offering instruction on sustainability and waste reduction, colleges can further encourage students to embrace sustainable practices.

Overall, minimizing and eliminating trash produced on college campuses is crucial for sustainability and environmental protection. Colleges may conserve resources, cut expenses, and foster a more sustainable environment for their employees and students by putting effective waste reduction policies into practice.

2.Literature review and Objective:

Removal of Domestic Wastewater Impurities by using Different Filter Media

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ABSTRACT

Domestic wastewater, also known as sewage, is a byproduct of human activities and contains a variety of organic and inorganic pollutants. These pollutants come from sources such as toilets, showers, sinks, washing machines, and dishwashers. The composition of domestic wastewater varies depending on the source and the activities that take place within the household. Domestic wastewater contains a large amount of organic matter, nutrients (such as nitrogen and phosphorus), pathogens (such as bacteria and viruses), and suspended solids. If not handled properly, these pollutants can contaminate waterways, causing waterborne diseases, eutrophication, and environmental degradation. The treatment of domestic wastewater is essential for the protection of public health and the environment. The most common treatments include physical, biological, and chemical processes. Physical treatment includes the removal of large particles by sieving and sedimentation. The biological treatment uses microorganisms to break down organic matter, while chemical treatment uses chemicals to remove nutrients and disinfect water. The efficient and sustainable management of domestic wastewater is a serious challenge for many communities around the world. Proper wastewater treatment and disposal prevent the spread of disease and conserve natural resources. Additionally, recycling resources such as water, nutrients, and energy from domestic wastewater can help build more resilient and sustainable communities.

KEYWORDS: Sewage, Nutrients, Pathogens, Eutrophication, Biological

1. INTRODUCTION

Domestic wastewater is the wastewater generated by families, industrial buildings, and institutions inclusive of colleges and hospitals. This kind of wastewater usually incorporates a spread of natural and inorganic contaminants, inclusive of human waste, meal waste, detergents, and chemical substances. If left untreated, domestic wastewater can pose a widespread hazard to public health and the environment. it could result in the spread of waterborne sicknesses and purpose pollutants in natural water bodies, which could have unfavorable impacts on aquatic ecosystems. therefore, the treatment of domestic wastewater is essential to guard public fitness and the surroundings. Wastewater remedy approaches can remove contaminants from domestic wastewater, making it safe for discharge into the environment or reuse for non-potable functions along with irrigation. domestic wastewater treatment may be carried out via diverse strategies, which include bodily, chemical, and organic remedy procedures. the choice of the appropriate treatment method depends on the specific characteristics of the wastewater and the remedy targets. Standard domestic wastewater remedy performs an important position in making sure the sustainability of water sources and protecting public fitness, and its miles a critical thing of modern sanitation and environmental control.

2. OBJECTIVE

The primary objective of domestic wastewater treatment is to remove contaminants and contaminants from wastewater generated by households, commercial businesses, and institutions before it is discharged into the environment. The treatment process is designed to reduce levels of organic matter, suspended solids, nutrients, and harmful pathogens in wastewater to protect public health and prevent pollution and environmental degradation.

Treated wastewater can be used for a variety of purposes such as irrigation, industrial processes, and in some cases even for drinking water supply, but requires additional treatment to ensure its safety and quality. In general, the main objectives of domestic wastewater treatment are to protect the environment, and public health and to preserve natural resources for future generations.

Case Study of Building Cracks and Causes and Its Prevention

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ABSTRACT

This case study focuses on the causes and prevention of building cracks. We conducted a site visit and analysis of a newly constructed commercial building in a coastal area that had developed cracks on its walls and floors. Our investigation revealed that the causes of the cracks were due to foundation issues, weathering, and poor construction practices. To prevent building cracks, we recommended preventive measures such as proper site investigation, foundation design, concrete curing, and the use of appropriate materials. The implementation of these measures will ensure the safety and longevity of the building. Building owners and contractors can use this case study to understand the importance of following proper construction practices and implementing preventive measures to prevent building cracks.

1. INTRODUCTION

Building cracks are a common issue in the construction industry that can have significant implications on the safety, structural integrity, and functionality of buildings. Cracks can occur in different parts of a building, including walls, floors, ceilings, and foundations, and can result from various factors, such as improper design, use of low-quality materials, inadequate reinforcement, and lack of regular maintenance. Building cracks can also be caused by natural factors, such as soil settlement, thermal movements, and seismic activity.

The consequences of building cracks can be severe and can include reduced structural integrity, water damage, and potential collapse, leading to property damage, injury, and even loss of life. Therefore, it is crucial to understand the causes of building cracks and implement preventive measures to avoid their occurrence.

This case study aims to investigate a building that experienced cracking and examine the underlying causes. The study will explore the various factors that contributed to the development of cracks and investigate the prevention measures that could have been implemented to avoid the problem. The study will also evaluate the effectiveness of repair methods used to restore the building's structural integrity. The case study will provide valuable insights into the importance of proactive measures in preventing building cracks, as well as the need for appropriate repair methods that can effectively address the root causes of the problem. By highlighting the importance of investing in high-quality construction practices, regular maintenance, and effective repair methods, the study will help ensure the safety and longevity of buildings.

Case Study: conducted a case study on a newly constructed building in a coastal area. The building was a 10-story commercial complex and had been in use for only six months. The building owner reported the appearance of cracks on the walls and floors of the building.

2. LITERATURE REVIEW AND OBJECTIVE

1.Case study on building cracks and causes and its prevention.(Date 2019)**P. Swapna**.This investigation offers understanding to sorts of splits, reasons for breaks and counteractive action of breaks. Different methods for treatment of breaks are examined in this investigation. We can abridge that however it isn't practical to affirmation against splitting yet endeavors can be made to limit advancement of break. And furthermore, not all sort of split requires same dimension of thought. The likely explanations of split can be controlled if legitimate thought is given to development material and system to be utilized. If there should be an occurrence of existing breaks, after detail study and investigation of split parameters, most suitable technique for rectification ought to be received for viable and proficient fix of split. Initial segment involves essential presentation about breaks and about the past endeavors which are made by the examination researchers, second part contains the contextual investigation, visual recognizable proof of splits and causes with preventive measures and third part contains systems to fix break. The

Experimental Study on Pervious Concrete Made of CCW and Steel Slag

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ABSTRACT

A unique kind of concrete known as "pervious concrete" is made to easily allow water to pass through it. By allowing the water to recharge groundwater supplies, this helps to reduce runoff from a site. It is also referred to as porous pavement, permeable concrete, no fines concrete, and porous concrete. Because larger aggregates and less fine aggregates are used to make pervious concrete, the concrete is filled with numerous tiny holes. Water can seep through these pores in the concrete and into the ground below. The concrete has a high void content of roughly 30% because it contains less fine components. Pervious concrete is a green building material that helps to solve a variety of environmental issues.

In this study, the feasibility of using crushed concrete waste (CCW) and steel slag (SS) in the production of pervious concrete was investigated. Crushed concrete waste and steel slag used as partial replacements for coarse aggregates. The fresh and hardened properties of pervious concrete were evaluated by conducting tests on mixtures with varying percentages of CCW and SS. In addition to the sustainable advantages of using waste materials in concrete production, the use of CCW and SS also helps reduce the environmental impact by diverting waste from landfills and reducing the consumption of natural resources. This study emphasizes the potential of using CCW and SS as sustainable alternatives to traditional construction materials in practices and material the production of pervious concrete. It also highlights the importance of sustainable construction s in addressing environmental concerns and promoting sustainable development. The water-cement ratio was kept at 0.40 and the mix proportions with aggregates size (12.5mm to 16mm) respectively. Properties of pervious concrete e.g. compressive strength and permeability test at 7&28 days have been studied experimentally.

Keywords: Pervious concrete, Crushed concrete waste (CCW), Steel Slag (SS) Mix proportion, Permeability, porosity, Compressive Strength.

1. INTRODUCTION

With the use of modern procedures, we can now build structures in just one month thanks to fast advancements in our methods. Notwithstanding these developments, concrete is still necessary for building structures at a reasonable cost. The Latin root of the term "concrete" means "to grow together." It is created by combining cement, aggregate, and water, and when a chemical process known as hydration takes place, it hardens. Compared to cement, the amount of water determines the strength of concrete the most. Concrete can bleed excessively and become weaker if there is too much water present. We must mix the concrete with the appropriate volume of water to ensure that it is sturdy.

High-performance concrete usually contains ordinary Portland cement, but the concrete industry commonly uses various sub-products in cement-based materials. Pervious concrete is a network of voids to allow air or water to pass through. This allows water to drain through and replenish groundwater, unlike traditional concrete. This innovative material is sometimes referred to as No Fines Concrete. Pervious concrete is unique because it doesn't a unique material made of coarse aggregate, cement, and water, with little to no sand, creating contain sand or fine aggregates, allowing it to have 15-30% void space. The pores in pervious concrete range from 0.08 to 0.32 inches (2-8mm), which permits water to flow through without causing any damage. Due to climate change, many areas are experiencing water scarcity, which is why more and more communities and businesses are switching to pervious concrete. This material offers durability and low life-cycle costs similar to traditional concrete, while also allowing storm water to flow through and replenishing local water systems.

The global economy has always benefited greatly from the construction sector. However, one of the most widely used construction material is concrete. Concrete, is produced with a significant amount of carbon emissions. Concrete can now be produced in alternative ways, one of which is pervious concrete,

Solid Waste Management

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ABSTRACT:

Solid garbage is the unwanted, harmful, and wasted substance includes all kinds of food wastes, domestic wastes and operational wastes, The term solid waste management mainly refers to the complete process. Of waste generation, storage, collection, transport, treatment and disposal, solid waste issue is the biggest challenge to the authorities of both small and large cities' in developing countries like India. This is mainly due to the increasing generation of such solid waste and the burden posed on the municipal budget. In addition to the high costs, the solid waste management is associated lack of understanding over different factors that affect the entire handling system. there is also a need for a long term strategy to address the future challenges of solid waste management in Indian cities. This publication is to high light economic suitable technic & tools for waste management.

1.INTRODUCTION

India generates 62 million tons of waste each year and the biggest challenge to the authorities of both small and large cities' in developing countries is sustainable management system. This is mainly due to rapid urbanization, booming economy, and the rise in the standard of living in developing countries have greatly accelerated the rate, amount and quality of solid waste generation [1] & generation of solid waste and the burden posed on the municipal budget. In addition to the high costs, the solid waste management is associated with a lack of understanding over different factors that affect the entire handling system. An analysis of literature and reports related to waste management in developing countries, showed that few articles supplied quantitative information. The objective of the mentioned studies was to determine the stakeholders' action/behavior that have a role in the solid waste. In recent era, cooperation between the state, business, and informal sectors is apparent, and it is optimal to coordinate environmental education and public participation for successful implementation through one of these networks [2][3The general practices related to urban solid waste management from the point of generation before final disposal can be divided into the six functional components.

• Generation of waste
• Storage of waste
• Collection of waste
• Transportation of waste
• Process of segregation
• Disposal of waste

2.CURRENT CHALLENGES OF SOLID WASTE MANAGEMENT IN INDIA

- Burning Of Mixed Waste**:** In India, plants burn mixed trash. When chlorinated hydrocarbons like PVC are present, dioxins and furans are released when the waste is burned at less than 850 degrees Celsius.
- Emissions that are harmful**:** Dioxins and furans are recognized carcinogens that can cause immunological, endocrine, neurological, and reproductive system dysfunction.
- Poor compliance**:** These not comply with the National Green Tribunal's requirements.
- Environmentally Unsustainable**:** Even under ideal conditions, incineration releases large amounts of flut glasses, mercury vapor, and lead compounds, and there is always about 30% residue from incineration in the form of slag (bottom ash) and fly ash (particulate matter), both of which are known to be serious air and water pollutants.
- In addition, facilities in India are inefficient in producing electricity.

Partial Replacement of Cement with Rice Husk Ash (RHA) in Concrete

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ABSTRACT

Self-compacting concrete (SCC) is a concrete with a very low yield strength, high deformability and medium viscosity (there is no need to use external pressure to ensure uniform suspension of solid particles during transportation and standing time). SCC is the best performing concrete with very good strength and durability. However, the mixing ratio and flow property test method are very different from ordinary concrete. SCC is a concrete that is able to flow under its own weight and completely fill the formwork, without the effects of vibration, while being cohesive enough to handle without bleeding. It ensures good packing and good structural resistance to small spaces and strong structural elements. SCC usually requires high levels of binders and chemical additives. The construction industry emerged in the early 2000s. Large-scale national and international projects are taking place dramatically around the world. Self-compacting concrete for its high resistance, workability, durability and reduced labor.

Keywords: Self-compacting concrete, Durability, Workability

1.INTRODUCTION

Due to economic progress and development, concrete has been identified as the national infrastructure resource. strength and even beyond life. It can account for more than 5% of global carbon dioxide emissions Portland cement production. To reduce OPC limitations, it can be partially replaced RHA substance. Many green materials have been investigated Partial replacement of cement in the form of fly ash and peanut shells has been successful. Cement is gaining momentum in this project and the growing demand for cement is increasing day by day. Finding alternative materials with similar properties to cement is a very important aspect for engineers. RHA is one such material and is used as an additive. The use of mineral additives in the production of SCC not only provides economic benefits, but also reduces the heat of the water. In this work, the main factors were the amount of rice husk powder (15%, 20%) and the binder content. The parameters that remained stable were the measurements of fine aggregate, coarse aggregate, water, ash content, w/w ratio and the range 5%, 10%, 15%, 20%). The main point of this review is to investigate the possibility of using rice husk as an additional cementitious material and RHA as a swelling material in SCC by examining the fresh and hardening properties of rice husk. The test results showed that the properties of concrete were significantly affected due to RHA.This paper focuses on the partial replacement of cement with rice husk ash (RHA). India is Main rice producing countries. Worldwide, about 600 million tons of rice are produced, The annual production of rice husk is 120 million tons. In most cases, it is dandruff Water from rice processing is burned or disposed of as waste. Rice husk ash Contains 90-95% active silica. The world rice harvest is estimated at 588 million tons Every year, India is the second largest producer of rice in the world with 132 million tons per year and per year.

2.LITERATURE REVIEW

Most of these studies have been conducted to determine effectiveness of RHA. Effect of particle size on calibration of Portland density using rice husk ash mixture Cement concrete was discussed by Bowie et al [1]. They found that it partially replaced cement 20% RHA by mass increases the early compressive strength of spatially scaled adhesives mix Analysis of the optimal replacement of concrete strength and durability. It has been discussed by Ganesan et al. [2] and Gemma Rodríguez de Sensale [3] and Hwang Chao-Lung et al. review Ravandi Kishore discusses the strength properties of high-strength rice husk concrete [5]. They found that increasing cement replacement with RHA in concrete decreased. The workability of the concrete was reduced by 27% and the compactness by 9%. optimal level of substitution for concrete grades M20 and M30, rice husk ash is 10%. Tashima, MM and others [6] The possibility of adding rice husk ash (RHA) to concrete was discussed with Rama Rao of GV [7] discuss high strength concrete with RHA as mineral admixture. Whitish neutral carbon Rice husk ash as a substitute for white cement has been discussed in part by Rossella, M. Ferraro et al. [8]. In that due to

Fruit Disease Detection using K-means Clustering Algorithm

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Abstract: Fruit diseases are consistently regarded as a notable problem in the global farming industry. The requirement for a manual checking framework arises from this. Agriculturists need to manually analyze fruits in this way. However, continuous manual watching does not provide sufficient outcomes, and they often need for professional direction. The agribusiness sector is the main driver of the global economy, but its growth is slowing when compared to the rise in intrigue, and this ratio of intrigue to creation is expected to remain high in the next years. For the purpose of diagnosing fruit illnesses, clustering and fruit picture segmentation algorithms have recently been created. By using different estimations, an algorithm plot is examined to show its significance. Fruit diseases have a severe impact on global agricultural industry productivity and financial losses. This study proposes and experimentally validates an adaptive strategy for the detection of fruit illnesses

Keywords – K-means clustering algorithm, SVM classifier, image processing, natural language processing.

I.   Introduction

India is second in the world for fruit output. Given that it accounts for 17% of India's GDP overall and employs more than 60% of the country's workforce, agriculture is an important sector of the Indian economy. The traditional method of illness detection and fruit identification relies on the exposed eye perception of the experts, however in some developing countries, consulting with specialists is expensive and time-consuming due to their dispersed locations. In the modern world, it is past time to take care of the farming fields. However, due to ongoing climatic and other changes, crop yields and farming productivity have shifted to some serious problems that are a source of legitimate concern. India is the second-largest producer of fruits, producing 44.04 million tons of fruit annually, making it the "green land." India makes up 10% of the fruit produced worldwide. Apple, banana, citrus, grape, mango, guava, papaya, and watermelon are just a few of the fruits that Indian ranchers grow. When a fruit tragedy occurs, it will superficially take into account water-soaked wounds and convert the low-resolution photos to high-resolution images. This was either fully or partially recognized in the entire fruit image. At the early stage, there is squeezing discovered at a manageable speed. The meeting costs of competent experts are considerable, and it is also impossible to prompt them on time in a faraway area. A customized fruit unpleasant location framework is thus required in the immediate aftermath of the disaster. Ranchers typically observe the visual effects of fruit distress Authorities might keep an eye out for fruit with disaster-like visuals. Experts could easily analyze the catastrophe or it could have faith in laboratory research. The majority of the future methods for the Republic of India's fruit disaster location framework will include trained eye-tracking technology or ultrasound, technology The Using photographs from far-off farm fields, the methodology presented in this research can be used to create automatic systems for agricultural processes. With constantly evolving computing systems, computer-based image processing is evolving quickly. The market's specialized imaging systems, which can be used to obtain results by pressing a few keys, are not very adaptable and, more significantly, they are expensive.

II.   Problem Statement

The output of very valuable fruits has declined as a result of the poor fruit quality, lack of maintenance, and manual inspection. Fruit disease decreases the amount and type of cultivating resources. Competent

Real Time Tracking and Alert System for Stolen Laptop

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Abstract: Electronic device theft, which includes the loss of laptops, mobile phones, and other gadgets, has been an ongoing issue for people around the globe. A laptop's value is not the only factor that might be lost. Unfortunately, it also involves the loss of any stored sensitive and private data. The valuable data may occasionally end up in the wrong hands. Many personal gadgets, like cell phones and computers, are being used more often every day. Our risks of misplacing or losing our laptop rise as we use it more frequently. The approach for locating a stolen laptop using GSM and sensors is part of the proposed solution. We provide an innovative strategy for preventing laptop theft. In the event that the stolen laptop is used by someone other than the user, sensors on the sides of the device will identify a small movement and trigger an alert. There is an alarm sound system accessible to increase security. That will cause a would thief to reconsider taking the laptop with him. By interacting with the GSM modules built inside the laptop, the user of the stolen laptop may track its current location using a smartphone.

Keywords: GPS, GSM, Laptop, Misplace, Thief, Alert, Location, Trigger, Sensors.

I. INTRODUCTION

Real-time tracking and alert system for stolen laptops is a project that aims to develop a system that helps users to locate and recover their stolen laptops. The project involves the use of hardware and software components to track the location of the stolen laptop, send alerts to the user, and assist law enforcement in the recovery of the laptop. The hardware component of the system involves the installation of a tracking device in the laptop. This device will use GPS technology to track the location of the laptop in real-time. The software component of the system will be a user-friendly interface that allows the user to track the laptop's location, receive alerts, and take necessary action to recover the laptop. Location tracking will use GPS technology to track the location of the stolen laptop. The location data will be transmitted to the user's account on the system's server in real-time. Alert system will send alerts to the user via email, text message, or push notification, informing them of the laptop's location and other relevant information. Remote data wiping will allow the user to remotely wipe data from the stolen laptop to protect sensitive information. Recovery assistance will assist law enforcement in the recovery of the stolen laptop by providing them with location data and other relevant information.

The project will require expertise in software development, hardware integration, and GPS technology. It will also require collaboration with law enforcement agencies to ensure that the system complies with the relevant laws and regulations. Additionally, the system can act as a deterrent to theft, as potential thieves are less likely to steal a laptop that can be easily tracked and recovered. In summary, the motivation for developing a real-time tracking and alert system for stolen laptops is to provide a solution to the rising incidence of laptop theft, protect sensitive information, and provide users with a means to recover their stolen laptops quickly and efficiently. By using GPS technology to track the location of stolen laptops, users can recover their laptops and protect their sensitive information. The location data would be sent to a central server, where it would be analyzed and displayed on a map. If the laptop is moved outside of a designated area or if it is reported stolen, the system should be able to send alerts to the owner via text message. The alert should include the location of the laptop, as well as any other relevant information, such as the time and date of the alert. The system should have a user-friendly interface that allows the owner to view the location of the laptop, configure the alert settings, and take action in the event of a theft. The software scope of the project includes ensuring that the software is compatible with multiple operating systems, user-friendly, and secure.

The implementation scope of the project includes integrating the hardware and software components, testing the system's accuracy, and ensuring that the system is scalable and can handle a large number of

A Blockchain-based Product Ownership Management System for anti-counterfeits in the Post Supply Chain

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Abstract: Counterfeit products in the post-supply chain pose significant risks to consumers' health and safety and can damage the reputation of manufacturers. Current anti-counterfeit solutions, such as security labels or holograms, are often ineffective, and the counterfeiters can easily replicate them. Therefore, there is a need for a more secure and reliable solution to combat counterfeiting in the post-supply chain. In this paper, we propose a blockchain-based Product Ownership Management System (POMS) for anti-counterfeits in the post-supply chain. The system provides a decentralized and transparent way of tracking the movement of products through the supply chain and verifying their authenticity. The POMS allows all parties in the supply chain, including manufacturers, distributors, retailers, and consumers, to access and verify the product's information securely. The POMS uses blockchain technology to ensure that the product's information is tamper-proof and secure. It provides a secure authentication system that allows only authorized parties to access the product's information. The system ensures data privacy by complying with all data privacy laws and regulations to protect sensitive information. The POMS is designed to be scalable and user-friendly, with a simple and intuitive interface that can seamlessly integrate with existing supply chain systems. The system's scalability allows it to handle large volumes of data and transactions without compromising its speed or efficiency .In conclusion, a Blockchain-based POMS for anti-counterfeits in the post-supply chain can provide a more secure and reliable solution to combat counterfeiting. The system's decentralized and transparent nature, secure authentication, data privacy, integration with existing systems, scalability, and user-friendly interface make it a promising solution for the post-supply chain. This system has the potential to enhance trust between different parties in the supply chain and provide a more secure and reliable way to verify the authenticity of products.

Keyword: Blockchain, Product, Product Ownership Management System, Quick Response Code.

I. INTRODUCTION

Counterfeiting is a global problem that affects businesses, consumers, and economies alike. In the post-supply chain, counterfeit products can enter the market through various means, such as theft, diversion, and unauthorized production. This not only results in financial losses for businesses but also poses a significant risk to consumer safety.

To address this issue, a blockchain-based Product Ownership Management System (POMS) can be implemented to track and manage product ownership throughout the supply chain. A POMS is a decentralized system that uses blockchain technology to record and track the ownership of a product, from the point of production to the point of consumption.

By leveraging the transparency and immutability of blockchain, a POMS can provide a tamper-proof and auditable record of a product's ownership history. This can enable businesses to authenticate the ownership of their products and prevent the entry of counterfeit products into the market.

In addition to preventing counterfeiting, a blockchain-based POMS can also offer other benefits such as improved supply chain visibility, increased efficiency, and reduced costs. It can enable stakeholders in the supply chain to track the movement of products in real-time, identify bottlenecks, and optimize processes.

Overall, a blockchain-based POMS can provide a secure, transparent, and efficient solution for anti-counterfeiting in the post-supply chain.

II. Problem Statement

Colorization of Black and White Image Using Deep Learning

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ABSTRACT: The main objective of this paper is to colorize black and white images, which are only in black and white. We implement image colorization using CNN algorithm in Deep learning where we have used all 4 layers of CNN which are not used in existing papers, which resulted better output than deep hybrid model. These layers will be written in prototxt file. While leveraging pre-trained models for better feature extraction and compare the performance of these models. Colorization of gray-scale images has become a more researched area in recent years, thanks to the Deep Learning and Convolutional Neural Networks. Image features can be automatically extracted from the training data using deep learning models such as Convolutional Neural Networks (CNN). The Image Net dataset used and random selected image have been used to construct a mini dataset of images that contains 1.2k images spitted into 80% training and 20% testing. We attempt to apply this concept of the colorization of gray-scale images obtained from deep learning. We aim to compare each variant based on results obtained as individual images. It has been attempted using Photoshop editing, but it proved to be difficult as it requires extensive research and a picture can take up to one month to colorize.

KEYWORDS: Image colorization, Grayscale images, Convolutional Neural Networks(CNN)

I. INTRODUCTION

Image coloring is the process of assigning colors to grayscale images to make them visually pleasing and perceptually meaningful. This is a very complex task and often requires prior knowledge of the image content and manual adjustments to achieve artefact-free quality. Also since objects can have different colors there are many ways to assign colors to pixels in an image. So there are several ways to solve this problem. There are two main approaches to colorizing an image. One is to ask the user to color specific areas and spread this information across the image. Another way is to learn the color of each pixel from color images of similar content. This article uses the latter approach. Extracts color information from one image and transfers it to another image. In recent years researchers in computer vision and image processing are paying more and more attention to deep learning. As a representative technique Convolutional Neural Network (CNN) has been well studied and successfully applied to various tasks such as image recognition image reconstruction and image generation. CNNs consist of layers of small computational units that process only part of the input image in a feed-forward fashion. Each layer is the result of applying a different image filter to the previous layer and each filter extracts specific characteristics of the input image. Thus each layer can contain useful information about the input image at different levels of abstraction.

In this work, we trained a Convolutional Neural Network (CNN) to associate a black and white image input with a colour output. In doing so, we use a pre-trained CNN model that can be retrieved using Python. Our idea is to use a fully automated approach that produces decent and realistic colorizations. Deep learning is an existing feature of AI that works similarly to the human brain. Image colorization has become a popular method for making images look more interesting and dynamic. By augmenting an image with colours, users can add a sense of life to images that would otherwise be static and dull. This can be helpful in creating more engaging content, as well as making images easier to understand and remember. In this blog post, we will discuss how deep

Improving efficiency of high utility Pattern Mining Algorithm using Adaboost , Random Forest and SVM

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ABSTRACT : High utility pattern mining has been effectively researched within the data mining field. The traditional pattern mining cannot absolutely think about attributes of databases used in real world. Moreover, database volumes are larger bit by bit gradually in many applications similar to sales data of retail markets and association information of internet services. The general strategies for static databases are not reasonable for preparing dynamic databases and removing helpful data from them. Many incremental utility pattern mining approaches have been proposed, past methodologies require more scans for incremental utility pattern mining regardless of using any structure. In any case, the methodologies with various scans are really not sufficient for stream environments. The algorithm uses the retail transactional database and to increase the efficiency of the proposed system we add the constraints like length, item, date which helps for more accurate prediction.

Keywords-: Data mining, SVM, Random Forest, AdaBoost , High utility pattern mining.

I. INTRODUCTION

Main purpose of data mining is to find useful data sets from raw data. The technique of finding interesting, unexpected, and useful data patterns from large databases. In these algorithms various Algorithms are used. When the number of transaction dataset increases then it also increases its complexity, algorithms are being developed to match this development. In this weare taking input as a transaction dataset and after that we process that dataset using preprocessing step and remove noise from the dataset. next process is data splitting in which weare split dataset in two phases training and testing and next step in which we classified Adaboost , random forest ,SVM algorithm using those algorithm it boost the performance and increase the accuracy. This approach can solve the limitation of traditional pattern mining that cannot fully consider characteristics of real world databases.

II. PROBLEM STATEMENT

The problem statement is, To design a method for constraint based utility mining with databases, given threshold minimum utility by user and addition of constraints like length, item,date for analyzing the patterns in decision making process.

III. LITERATURE SURVEY

In [1] J.C.-W.Lin[2],P. Fournier-Viger[1] Survey on High Utility Oriented Sequential Pattern Mining. Sequential pattern Mining ,Time interval based Sequential Pattern Mining , Utility Mining and by observing it, strong conclusion can be derived that there is an opportunity for hybridization of more than one area by means of satisfaction of more than one constraint(Time, Utility etc.) In [2]Unil Yun[1],Heungmo Ryang[2] An efficient algorithm for mining high utility patterns from incremental databases with one database scan. This approach can solve the limitation of traditional pattern mining that cannot fully consider characteristics of real world databases. database volumes have been getting bigger gradually in various applications and connection information of web services, and general methods for static databases are not suitable for processing dynamic databases. In [3] U.Yun[1], D.Kim[2] Mining recent high average utility patterns based on sliding window fromstream data. The representative utility pattern mining technique, high utility pattern mining (HUPM) However, such utility measures for patterns in HUPM have a drawback in which patterns with long lengths tend to have utilities sufficient to become high utility patterns. In [4] G.Lee [1], U . Yun [2] New efficient

File Secure System Using Hybrid Cryptography

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Abstract : File security is all about protecting your private corporate information from snoopers by implementing stringent access control procedures and upholding impeccable permission hygiene. As important for safeguarding files as creating and maintaining security access limits is decluttering data storage. Regularly delete unnecessary, old, and other files to make room for business-critical information. You may reduce storage inefficiencies and dangers to data security by regularly reviewing and enhancing your file security strategy. Today's extremely versatile and well-known technology is cloud computing. Customers are given convenience, speed, competence, etc., in their working environment with the help of the services.

Keywords—DES Algorithm and RSA Algorithm.

I.   Introduction

The DES and RSA cryptographic algorithms use symmetric and asymmetric keys. The primary challenge is integrating the key TSO receiver into a multi-user application. Although these algorithms offer minimal security, they have a low latency for data encoding and decoding. RSA and ECC are the algorithms used in public key cryptography. Algorithms for public key cryptography manipulate both public and private keys. Algorithms for public key cryptography work with both public and private keys. These techniques achieved a high level of security but increased the time it took to encode and decode data. Steganography inserts an envelope with secret data hidden within. With this method, not everyone can see that the data even exist. Only legitimate recipients are aware that the data even exist

II.   Literature

[1] Sanjeev Kumar [1], Garima Karnani [2] , Madhu Sharma Gaur[3] , Anju Mishra[4] The encryption and decoding cryptography algorithms AES and RSA are used to boost cloud storage security. In comparison to current approaches that rely on cryptography, it also improves the security of data in cloud settings. For encryption and decryption in this, only text files have been utilised; other file types have not.   [2] Divya Prathana Timothy[1],Ajit Kumar Santra [2] The Blowfish, RSA, and SHA-2 algorithms are combined to form a novel hybrid cryptographic algorithm. The efficiency of the suggested system is provided by the combination of symmetric and asymmetric algorithms. Using the SHA-2 algorithm, the suggested solution offers exceptional security for data transfer over the internet.

III.   Proposed System

As opposed to conventional storage devices, which can lose data due to a variety of reasons, including device loss, data corruption from a computer virus, and natural catastrophes, cloud storage offers secure backup. By employing symmetric key cryptography technique to encrypt and decrypt the client information at cloud storage and client side, it is possible to protect information from many sorts of attackers. Original data is converted into unreadable form using cryptography.
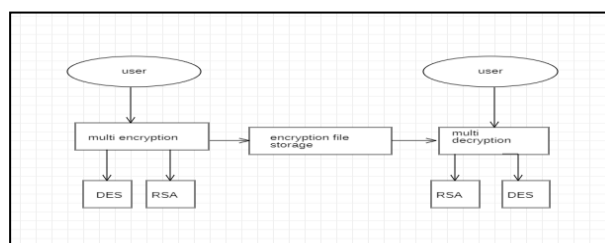
Crowdfunding Using Smart Contract In Blockchain

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Abstract : Crowdfunding is a strategy for raising money in an online. In this way it became a easy form for the people to invest/donate their small amount of money into different creative people's ventures to help them. By using crowdfunding people are able to invest their money into different startups through an mediator such as broker dealer. The main problem with the existing current systems is that, they do not give the donor guarantee policy certificate and the investor does not have direct control over the invested money. So, to overcome this problem our paper proposes the crowdfunding using smart contract in blockchain technology through which our provides an safe, secure and transparent way of crowdfunding. Our project provides an interactive forms for campaign creation, donation and request approval by which both the investors as well as the creators of the project can easily create and invest in the campaigns. The investors have all rights to track the money they have funded into the projects and can have full control over the invested money, This blockchain technology records all the transactions and store them in a block.

Keywords:- Crowdfunding, Smart Contract, Campaign, Blockchain

I.   INTRODUCTION

Crowdfunding is an easiest solution or the method for overcoming the issues or the problems that we have to face while approaching the traditional way/method of raising the funds. Basically, crowdfunding provides a platform to the person or a team who has an idea to put their project or cause in front of the huge number of people/individuals (i.e., investors) ready with their money to invest in their interested campaigns. The problem with the current crowdfunding platforms is that they have centralized body which is been controlled by an organisation/corporation. These organizations/corporations influences the campaigns and charges heavy fees. So, for this problem blockchain based crowdfunding platform helps to decentralized the funding model. Blockchain based crowdfunding helps to make sure that the investors are engaged in less risk of support into new ventures and creators can gain more and more investors globally to raise the funds in less time. Blockchain based crowdfunding is one of the purest form of crowdfunding as it does not contain any mediator between the creators and the investors. Blockchain based crowdfunding dapp (decentralized application) is the platform that gives an opportunity to the creators to post their project/campaigns on it and can get fund to their interested creators project/campaign. The main reason to use blockchain based crowdfunding decentralized application (dapp) is to overcome the mainly increasing problem day by day that is trust. Blockchain helps to build the trust and transparency between the investors and creators. Blockchain is an decentralized or distributed ledger which means it does not have any single centre coordination system (i.e., centralized system) where every nodes connects to it to share its information. Decentralized or distributed system has multiple coordination points where every node takes part in sharing the information process. Decentralized or distributed system is the safe system everyone collectively execute their role where as in centralized system if the central system gets failed then all the nodes connected to it will disconnect and the whole system fails completely which results in the unsafe system. Blockchain is open to all with an decentralized or distributes system that records all the transactions occurred between the creators and investors to maintain the transparency between them that leads to building of trust in both the parties. In blockchain the information entered into it cannot be deleted later, the information is permanently stored on it. The transactions gets verified at every single transaction that is been carried out. Blockchain is the safest method to keep the transparency between the two parties.

II.   PROBLEM STATEMENT

Identification of Birds Species using Neural Network and Audio Signal

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ABSTRACT : Birdsong recognition using neural networks and audio signals is an emerging application of artificial intelligence with practical applications in ecological research and conservation efforts. The process involves gathering a large data set of audio recordings of different bird species, preprocessing the audio signals to extract relevant features, and training a neural network to recognize bird species from the audio signals. Common feature extraction techniques include MFCCs, spectrograms, and wavelet transforms, and neural network architectures such as CNNs and RNNs can be used for training. The neural network can be evaluated using metrics such as accuracy, precision, and recall, and can be used to recognize bird species in new audio recordings, even in real-time. Bird recognition using neural networks and audio signals has the potential to make significant contributions to our understanding and conservation of birds and their ecosystems.

KEYWORDS: Bird, Computer Vision, Machine Learning, Classification, Neural Network, Self-Learning, CNN, Audio Signal Processing.

I. INTRODUCTION

Bird species identification is a critical task in ecology, conservation, and ornithology. Traditional methods of bird species identification involve visual observations, which can be time-consuming, expensive, and challenging in certain environments. Audio signals offer an alternative and non-invasive approach to identify bird species. With the recent advancements in machine learning and signal processing, neural networks have been used to classify bird species using audio signals. This approach has the potential to revolutionize bird species identification, making it faster, more accurate, and less expensive. In this answer, we will discuss in detail the different steps involved in identifying bird species using neural network and audio signal information. We will also highlight the challenges and opportunities in this field of research.

II. PROBLEM STATEMENT

The problem of identifying bird species using audio signals is challenging due to the complexity and variability of bird vocalizations. Bird vocalizations can vary significantly in terms of pitch, duration, and spectral content, even within the same species. Additionally, audio signals can be affected by environmental noise, which can interfere with the identification process. Traditional methods of bird species identification based on visual observations can also be time-consuming, expensive, and difficult to implement in certain environments. Therefore, the problem statement is to develop an accurate and efficient method for identifying bird species using audio signals and neural network techniques.

III. LITERATURE SURVEY

"Automatic bird species identification using convolutional neural networks" by Stowell et al. (2016): In this study, the authors used a convolutional neural network (CNN) to classify bird species based on audio signals. The CNN was trained on a dataset of over 1,000 hours of audio recordings and achieved an accuracy of 78%.

"Bird species recognition using convolutional neural network with feature fusion" by Park et al. (2018): In this study, the authors used a combination of time-domain and frequency-domain features to train a CNN to classify bird species. The method achieved an accuracy of 90% on a dataset of 21 bird species.

"A comparison of machine learning algorithms for bird species recognition" by Sterle et al. (2021): In this study, the authors compared the performance of different machine learning algorithms, including neural networks, for bird species identification based on audio signals. The study found that neural networks outperformed other algorithms and achieved an accuracy of over 90%.

Traffic Control System Based on Image Processing Using SSD Algorithm

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ABSTRACT: In Highway management of Area intelligent Vehicle address locating and Counting Increasingly important is happening. It is very Challenging to detect a different size of vehicles which can directly impact the Counting of Vehicle Accuracy. In suggest Vehicle counting and detection system the Surface of Highway roads first we will image is extracted and it can be divided in to a remote area and nearer to the centre area by newly proposed segmentation method. This method is essential for improve a detection of vehicle. The Vehicle gravity are obtained by SSD Algorithm which can be usable for judge the direction of vehicle driving and obtain the different number of vehicles. The beginning result, verify using the proposed segmentation method this method is useful for to provide higher detection Accuracy especially detect to a small object of vehicles.

Index Terms: Digital Image Processing, Automatic Traffic, Computer Vision, Vehicle Detection, Single Shot Detection, Traffic Management

I. INTRODUCTION

To Detect vehicle and analysis in video scene of Highway Monitoring area of Considerable moment to at Smartly manage and to control at a traffic of the Highways. We will explain about Identify the Vehicles & Counting, In Identity & track the vehicle in a selected area. of interest with most accurate Exact counts. With a maximum accuracy the main objective is to detect track & counts a vehicles with in High accuracy and to be able to do so on Highways, Surrounding areas and Small lanes etc.

A videos or footage of video is divided into frames. These frames which can be converted into Gray frames and these Gray frames are given a input into the system . To detecting a vehicle in to two areas incoming vehicles to outgoing vehicles for example: if the car is present in both of frames and difference in their X&Y coordinates is less than max pixels.

The problem of motion-based vehicle tracking can be divided into two parts Detecting moving objects in each frame. Associating the detections corresponding to the same object over time. A vehicle tracking system is the complete solution for vehicle management and monitoring of vehicle location in the moving video. Image Contour technique to track and count the moving vehicles from the video streams of traffic scenes recorded by stationary cameras is proposed in this research work.

II. LITERATURE REVIEW

1. Vehicle detection and counting system using SSD Algorithm in highway scenes- They proposes a Single Slot Detection-based vehicle detection and counting system in which the highway road surface in the image is first extracted and divided into a remote area and a proximal area by a newly proposed segmentation method. 2. Vehicle detection and recognition- The surveillance system includes detection of moving vehicles and recognizing them, counting number of vehicles and verification of their permit with the organization. 3. Video-Based Vehicle Counting for Expressway- vehicle counting method is designed based on the tracking results, in which the driving direction information of the vehicle is added in the counting process.

III. Methodology

Road Surface Segmentation: In this section to describe the method of Surface of Highway roads to Pulling & division using image processing method, such as normal distribution Modelling which allow to detect a better vehicle and to get a results when we using the deep learning object detection method.

Prediction of Water Quality using Machine Learning and IOT

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Abstract: I have implemented a system which can be used to predict the quality of water, our System contains two sections which includes Machine Learning (ML) and Internet Of Things (IOT). IOT helps to take inputs of different parameters of water using sensors and then it is send to Thingspeak cloud website where we can able to see the graphs of different parameters of water. From there that data is fetch on the custom website using API key. ML Model is implemented on our custom website where all the inputs are fetch and processed by ML Model to find the quality of water , here we used effective ML Algorithm which gives higher accuracy and shows that whether the given water sample is drinkable or not.

Keywords— Machine Learning Model (ML), Internet Of Things (IOT), API key (Application Programming Interface), Thingspeak Cloud.

I. INTRODUCTION

As we know that water is one of the most important element of nature, it is not only important for nature but also for all the living thing including human being ,as we are using water in our daily life for drinking, cleaning, agriculture and so on. In present time more than 50 kind of diseases are caused by drinking low quality of water, 80% diseases in world are spreading through the poor quality of water and more than 50% of child deaths are related to drinking poor quality of water drinking polluted water causes various kind of diseases like diarrhea, skin disease, malnutrition and some time it causes cancer and so on. We must check the quality of water before drinking, On many places there are lot of prototypes are present for checking the quality of water, but they are not available and affordable for everyone. As we know modern technologies are very costly to check the water quality that's why it is not affordable for everyone ,In some cases it is not available at all locations In this case people can easily make this system at their home using some sensors and machine learning model. Here in our model we have two sections, first is Machine Learning model and second is IOT system. For taking input IOT plays an important role, all the inputs of water sample is collected through the sensors and then those inputs are processed by machine learning model for output and it shows whether water is safe to drink or not.

II. PROBLEM STATEMENT

Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes. Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid, and polio. Absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks. For checking or predicting water quality effectively and accurately we made a model which is combination of Machine Learning and IOT(Internet Of Things).

III. LITRATURE SURVEY

Background

Ahmed et al. have used the supervised machine learning algorithms in order to assess the water quality index (WQI), where an individual index was used to summarize the overall quality of water, and water quality class (WQC). Their suggested techniques and the gradient boosting with a learning rate of 0.1 and polynomial regression with a degree of 2 has predicted the WQI most effectively, and that WQI was subsequently determined with a mean absolute error (MAE) of 1.9642 and 2.7273. In this instance,

Human Action Recognition System

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ABSTRACT: Human actions detection is very much investigated in utilization of artificial intelligence and computer vision. In order to get the equivalent actions, the proper activity information gained from various kinds of media like videos or pictures might be connected. In this project, image processing techniques are used in order to recognize the different hand poster of the human body, also the over-fitting can be eased and the execution of activity acknowledgment is improved. Initially, the human action video including hand waving, walking, jogging, clapping, boxing is converted into image of 2D frames and then it is pre-processed followed by feature extraction using LST and classification by KNN classifier has been done individually. The kernel principal component analysis (KPCA) technique is used in the proposed system for finding the image features and joined features.

Keywords: LST, KNN.

I.   INTRODUCTION

The demands for understanding human activities have grown in health-care domain, especially in elder care support, rehabilitation assistance, diabetes, and cognitive disorders. A huge amount of resources can be saved if sensors can help caretakers record and monitor the patients all the time and report automatically when any abnormal behavior is detected. Other applications could be in security in surveillance camera. We can teach cameras to define a restricted area and mark the objects under focus. These objects could be human or any bag or so. If a strange bag appears and remains on position for a period then it would alarm the police or forces. Many studies have successfully identified activities using wearable sensors with very low error rate, but the majority of the previous works are done in the laboratories with very constrained settings. Readings from multiple body-attached sensors achieve low error-rate, but the complicated setting is not feasible in practice. This project uses low-cost and commercially available smartphones as sensors to identify human activities.

The goal of this project is to design a light weight and accurate system on smartphone that can recognize human activities. Moreover, to reduce the labeling time and burden, active learning models are developed. Through testing and comparing different learning algorithms, we find one that best fit our system in terms of efficiency and accuracy on a smartphone. Human Activity Recognition is a multidisciplinary research field that aims to gather data regarding people's behavior and their interaction.

Problem Statement

Activity detection is a major problem in smart video surveillance .It is fundamental problem in computer vision that is to detect the activity of human in surveillance videos. These applications need real time detection performance, but it generally very time consuming to detect the actual activity.

II.   LITERATURE REVIEW

Human activity recognition has been studied for years and researchers have proposed different solutions to attack the problem. Existing approaches typically use vision sensor, inertial sensor and the mixture of both. Machine learning and threshold-base algorithms are often applied. Machine learning usually produces more accurate and reliable results, while threshold-based algorithms are faster and simpler. One or multiple cameras have been used to capture and identify body posture. Multiple accelerometers and gyroscopes attached to different body positions are the most common solutions. Approaches that combine both vision and inertial sensors have also been purposed. Some previous

Tracing of fake news on Twitter using Blockchain

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ABSTRACT: A rise of fake news on social media platforms like Instagram, Facebook, Twitter and many other applications. In this paper, we propose a novel approach for tracing the fake news on Twitter using Blockchain technology. Here, we demonstrate how the blockchain technology can be used to trace the fake news on Twitter. Our results show that blockchain can be an effective tool to fight against the spread of fake news on social media platforms, particularly Twitter.

Keywords: Fake News, Social Media, Classification, Block chain, Crypto currency

I.   INTRODUCTION

The widespread area of social media platforms, like Twitter has made it easier for individuals and organizations to lead and spread the wrong information and fake news. Twitter has a large user base, and it has the capability to tweet to millions of users within a minute. And if the fake news or wrong information is tweeted by someone then so many users can be victims of that news. Spread of fake news and information can have implications for society, which include the manipulation of public opinion, creation of social unrest , and disruption of democratic process. There are several processes to implement a special approach to handle the process of fake news by applying the algorithms and different techniques. We need to approach different rules and regulations needs to adjust the functional and behavioral approach of the model to enhance the trust among people.Blockchain technology has given the possible solution for the problem of fake news on Twitter and other social media platforms. Blockchain is decentralized in nature and transparency which make it an attractive tool for tracing the fake news on Twitter using blockchain technology.

II.   REQUIRMENTS
HARDWARE REQUIRMENTS:

* 4GB RAM MINIMUM
* I3 AND ABOVE PROCESSOR
* MEMORY 512 MB
* DISK SPACE 750MB OF FREE

SOFTWARE REQUIRMENTS :

* SANITY.io
* NEXT.JS
* METAMASK
* SOLIDITY
* HARDHAT
* VERSEL
* RINKYBY TEST NEWORK

III.   Methodology

 Our approach involves the use of blockchain technology to trace the fake news on Twitter. The method can identify the secure process of the transaction and defines the data as highly secure in this system. The block chain technology talks about the most secure system of the network security system which is used in various social media applications like Instagram, Twitter, Whatsapp , Facebook etc.

The proposed methodology talks about the different method's to analyse the system and to find out the fake news from different resources. , our goal is to find out the Researcher's point of view and the

Student's Government a webpage system developed using HTML, CSS, JAVASCRIPT and PHP

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ABSTRACT: The project Student's Government is a system which fulfill all the requirements of students like voting for college CR and president election and other college activities. The main goal of voting is to come up with leaders of the student's choice. The implementation of advanced technologies in elections becomes more beneficial and helps to generate a quick and accurate result to find the correct leader. With the help of voting application, the individual leader gets a lot to learn and makes impulsive decisions in every situation. There are a total of 5 different dashboards with different logins. Admin, Exam cell, event management, faculties, and students. All the users must first take the username and password from the admin. In this system all the notes are available which were uploaded by the professors. The president and CR election will be organized by the event management officers. All the work of exam cell like result display, timetable display, hall ticket and other important files are easily done here in a more convenient way. The Student's Government project can be developed using a variety of technologies, including HTML, CSS, JavaScript, and PHP. HTML, CSS and JavaScript can be used to add interactivity to the pages, such as pop-ups for confirmation messages or error alerts. It can also be used to create dynamic effects, such as animations or dropdown menus. PHP can be used on the server side to manage the login process, store user information, and handle database interactions. For example, when a student casts a vote in an election, PHP can be used to store that vote in a database and calculate the results. This project can be run on local server called as Xampp server. With XAMPP, you can set up a local development environment on your computer to create and test the project before deploying it to a live web server. XAMPP includes Apache as the web server, MySQL as the database management system, and PHP for server-side scripting.

Keywords: College CR, President, Voting Application, 5 Panels

I. INTRODUCTION

The Student's Government project is a comprehensive system designed to meet the needs of students in a variety of ways During the recent pandemic, college management faced difficulties in obtaining student responses for the selection of college President and CR. Additionally, students had difficulty accessing notes and notices from faculty, which caused work to come to a halt. However, the Student's Government project has made all work easier and more efficient. [1] It is an electronic system that allows for the selection of leaders through a web-driven application. Online voting has several advantages over the traditional "queue method," including the ability for voters to vote at their own convenience, reduced congestion, and decreased errors in vote counting. Each individual vote is stored in a database, which can be queried to find the candidate with the highest number of votes. [2] The online voting system allows voters to use their voting right online, and they must register as a student voter before being authorized to vote. The system also includes an exam cell dashboard, admin dashboard, faculty dashboard, and event management dashboard.

[3] The system includes five different dashboards with different logins for admin, exam cell, event management, faculties, and students. All users must first obtain a username and password from the admin. The system provides access to important information such as notes, exam results, timetables, and more. The president and CR elections are organized by the event management officers. The system uses advanced technologies such as HTML, CSS, JavaScript, and PHP to improve accuracy, efficiency, and usability. The system can be run on a local web server such as XAMPP.

[4] While the voting system is handled by the event management dashboard, the project also aims to improve the efficiency of the exam department's activities by introducing an automated solution. The traditional manual system of maintaining student records is prone to errors and requires a lot of paperwork. By introducing an online form filling, hall ticket generation, seating arrangement, and result declaration system, the project aims to simplify the process and make it more accessible and convenient for both students and staff. A centralized system can help manage examination-related activities

Mood Based MMM Suggestion System

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ABSTRACT:

The Mood based MMM Suggestion System is an AI-based project aimed at detecting the user's emotions through scanning their face and facial expressions using a camera. The system then suggests movies or songs based on the user's emotional state. This project leverages the latest advancements in AI, deep learning, and computer vision to provide a unique and personalized experience to users.

The project utilizes various technologies such as the EMO player, Sound Tree, Lucyd, Reel time AI, and the Viola–Jones object detection framework to accurately detect the user's emotions. The Deep Learning based Facial Expression Recognition using Keras is used to train the model and recognize the emotions of the user in real-time.

The project was developed using Python, Django, and JavaScript, and the tools used were Visual Studio Code and Python IDLE. The use of these technologies provides the system with a robust and scalable architecture, enabling it to handle large amounts of data and provide fast and accurate results.

In conclusion, the Mood based MMM Suggestion System is a state-of-the-art AI project that has the potential to revolutionize the entertainment industry. The system provides users with a unique and personalized experience by suggesting movies and songs based on their emotional state, making it a must-have tool for all entertainment enthusiasts.

Keywords: Mood Based, AI-based, Facial expression recognition, Movie recommendation.

INTRODUCTION:

The Mood based MMM Suggestion System is an AI-based project that utilizes cutting-edge technology to sense the emotions of the user and provide recommendations for movies and songs accordingly. This project is aimed at providing an immersive and personalized experience for users, where they can get suggestions based on their current mood and preferences.

The system utilizes the latest advancements in deep learning and facial expression recognition to scan the user's face and detect their emotions in real-time. The use of the Viola–Jones object detection framework, EMO Player, Sound Tree, Lucyd, and Reel time.Ai technologies provides a robust and accurate system for detecting emotions.

The project is built using Python, Django, and JavaScript, and utilizes tools such as Visual Studio Code and Python IDLE for programming and development. This ensures that the system is easy to use and maintain, and can be integrated into various environments and platforms.

Overall, the Mood based MMM Suggestion System is a cutting-edge project that provides a personalized and immersive experience for users by utilizing the latest advancements in AI and deep learning. It has the potential to revolutionize the way people consume media, and bring a new level of personalization to the entertainment industry.

Food Wastage Management and Donation

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ABSTRACT

The design aims to address the issue of food waste by enforcing a comprehensive food waste operation and donation program. The program includes the establishment of a food recovery network, which involves uniting with original food banks, harbours, and other community associations to deliver redundant food from caff , grocery stores, and other sources. The program also includes the creation of food waste reduction practices, similar as composting and source reduction. The design platoon will conduct expansive outreach and education sweats to raise mindfulness about the significance of reducing food waste and to encourage individualities and businesses to share in the program. By enforcing this program, the design aims to reduce the quantum of food waste generated in the community, while contemporaneously adding access to healthy food for those in need. To achieve these objects, the design platoon will work nearly with original businesses, community associations, and government agencies to identify food waste reduction and donation openings. The platoon will develop standard operating procedures for food recovery and distribution, including safe running and storehouse practices, to ensure that the food is of high quality and safe for consumption. To promote the program and raise mindfulness about food waste reduction and donation, the design platoon will conduct a variety of outreach and education sweats, similar as community shops, social media juggernauts, and educational accoutrements. The platoon will also work with original seminaries to integrate food waste reduction and donation into their classes, in order to promote these practices among youngish generations.

Keywords: Food waste, food recovery, food donation, food security, sustainability, community outreach, education, safe running and storehouse, composting, source reduction.

1. INTRODUCTION

Food waste is a significant issue that affects communities around the world. According to the United Nations, roughly one- third of all food produced encyclopaedically is lost or wasted each time. Meanwhile, numerous individualities and families struggle with food instability, meaning that they warrant access to enough nutritional food to maintain a healthy life. In order to address these challenges, numerous communities have developed food waste operation and donation programs, which aim to reduce the quantum of food waste generated while contemporaneously adding access to healthy food for those in need.

This design aims to apply a comprehensive food waste operation and donation program in a specific community, with the thing of reducing food waste and adding food security.

The program will involve establishing a food recovery network that collaborates with original businesses and associations to deliver redundant food and distribute it to those in need. Also, the design will promote food waste reduction practices similar as composting and source reduction, and conduct outreach and education sweats to raise mindfulness about the significance of sustainable practices.

Through the perpetration of this program, the design platoon hopes to make a positive impact on the community by reducing food waste and adding access to healthy food, while promoting sustainability and community engagement.

Music Streaming App using ReactNative

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Abstract
The development and implementation of mobile applications have become increasingly essential in today's technology-driven world. In this regard, React-Native has emerged as a popular framework for building cross-platform mobile applications, providing developers with the tools and resources to build robust and high-performing applications. One such application is a music streaming app that provides users with access to a wide variety of music content on their mobile devices.

This research paper delves into the development and implementation of a music streaming app using React-Native. The app aims to provide users with a seamless and intuitive interface for accessing music content while overcoming various technical challenges and design considerations. The paper provides valuable insights into the development process, highlighting the benefits and limitations of using React-Native to build music streaming apps.

A series of user testing sessions were conducted to assess the usability and functionality of the app, providing real user feedback that demonstrated a high level of satisfaction with the app's functionality and usability. The research highlights the importance of user testing, as it provides valuable feedback to developers on how to improve and refine their applications.

Overall, this research paper contributes to the understanding of developing mobile applications, specifically music streaming apps, using React-Native. It provides developers and designers with valuable insights into the technical challenges and design considerations that may arise during the development process. The paper also emphasizes the importance of user testing in ensuring the success of mobile applications, ultimately benefiting users by providing them with high-performing and user-friendly applications.

I. INTRODUCTION

Music streaming has become a ubiquitous part of our daily lives, providing us with access to a vast library of music at our fingertips. The increasing popularity of music streaming services has led to the development of many music streaming apps, each offering unique features and user experiences. With the rise of mobile devices, the demand for mobile-based music streaming apps has increased, providing a rich and personalized music experience on-the-go. React-Native, a popular open-source framework for building cross-platform mobile applications, has emerged as a promising tool for developing music streaming apps. React-Native allows developers to build native mobile applications for both iOS and Android platforms using a single codebase, making it an ideal choice for developing cross-platform apps. This research paper aims to demonstrate the development and implementation of a music streaming app using React-Native. The app was designed to provide users with a seamless and intuitive interface for accessing a wide variety of music content on their mobile devices. The study focuses on the key design considerations and technical challenges that were encountered during the development process and provides insights into how they were overcome. A series of user testing sessions were conducted to assess the usability and functionality of the app and to gather feedback from real users. The results of the testing sessions will be discussed in detail, providing valuable insights into the

Attendance System based on Face Recognition

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Abstract—The present instructive establishments are stressed over understudies' reliable execution. The deficient participation is one component adding to the decrease in understudy execution. The most famous strategies to record your participation are to sign or call the students. It was risky and took more time. A PC based understudy participation observing framework that empowers the educator to keep up with participation records is currently fundamental. In this venture, we utilized a shrewd participation framework in light of face acknowledgment. We have proposed setting up a "Brilliant Participation Framework for Face Acknowledgment" that has various purposes. Because of face authorization, the ongoing execution incorporates facial recognizable proof, which recoveries time and kills the chance of intermediary participation. This framework can as of now one of the

One of the best picture handling applications, face acknowledgment is pivotal in the specialized world. The recognizable proof of the human face is an ongoing issue for check purposes, especially with regards to understudy participation. The most common way of recognizing understudies utilizing a face biostatistics framework in light of superior quality observing and other PC advances is known as a face acknowledgment participation framework. The making of this framework intends to supplant the obsolete strategy for gauging participation by calling names and keeping manually written records carefully. The strategies currently used to gauge participation are awkward and tedious. Manual recording simplifies it to change participation information. Both the current biometric strategies and the customary strategy for keeping participation are vulnerable to intermediaries. Thusly, this paper is proposed. Project GitHub: https://github.com/Sharib/final-project/

Keywords- Face recognition, Convolutional Neural Network, Deep Neural networks.

I. INTRODUCTION

Participation is required consistently on each functioning day whether it is school, school or any other foundation and in this cycle each establishment squandered loads of paper only for keeping the record. With such little reasons, our normal assets are exhausting at the gigantic rate and it very well may be conceivable that our relatives don't ready to get those assets. It is also important to advise watchmen regarding the understudies about the nonattendance or presence of their ward. Some reputed schools and universities are there, who do it by orchestrating gatherings between them at a particular timespan. In any case, that is sufficiently not, parent need the report of their ward on standard basis. So, there is a need to tackle this issue and computerize this cycle so that for the absentees 'student, the SMS or by some other means we ought to ready to illuminate that their ward is missing. This could be extremely accommodating for both the educators and their watchmen to watch out for their ward about their activity, his advantage, their consistency and so on. Thus, they can make a proper move accordingly. Student participation framework is the procedure for attaching the participation of the understudy on premise of presence in class. Effective enterprises, schools, colleges start by connecting with understudies and ensuring that they will come routinely so the participation rate become vital. In this PPT, a shrewd understudy participation framework is planned and carried out in view of android working system. The versatile participation framework has been worked to dispense with the time and exertion squandered in gauging participation attendances in schools and universities. It additionally extraordinarily lessens how much paper assets required in participation information management. Our day-to-day routines rely vigorously upon human countenances, particularly for distinguishing individuals. Face acknowledgment is a kind of biometric distinguishing proof that separates facial

College Enquiry ChatBot Using NLP (Natural Language Processing) and Machine Learning (ML)

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ABSTRACT

The goal of this project is to create a college inquiry Chabot that responds to any enquiries posted by students about the institution, its location, its fees, its courses, etc. Using machine learning methods and NLP (Natural Language Processing), the College enquiry Chatbot project analyses user queries and comprehends user messages. This System is a web application that offers the requested information. Anyone can ask a question by using the bot. The responses are pertinent to the user's questions. Via the system, the User can look for any college-related activity. The students or any users does not need to visit the college in person to enquire. After analyzing the query, the system responds to the user. The suggestion box also allows the user to submit their own ideas. The system responds with a powerful Graphical User Interface that gives the user the impression that a real person is speaking to them.

Keyword: - NLP, MySQL (Database), Python, Flask Framework, College enquiry Chabot.

I. INTRODUCTION

In today's digital age, the demand for online education has skyrocketed, leading to an increasing number of students searching for information about colleges and universities on the internet. However, navigating through various websites and online resources can be time-consuming and overwhelming for students, especially those who are unfamiliar with the college admission process.

To address this issue, we have developed a College Enquiry Chatbot that provides students with a simple and efficient way to find information about colleges and universities. Our chatbot is built using Python Flask and HTML and utilizes natural language processing (NLP) techniques to understand user queries and provide appropriate responses.

The College Enquiry Chatbot is designed to provide students with information about colleges and universities, including admission requirements, course offerings, campus facilities, and more. Students can interact with the chatbot by typing their queries into the chat interface, and the chatbot will respond with relevant information in a conversational format.

Our goal with this project is to make the college admission process more accessible and less intimidating for students by providing them with an easy-to-use and reliable resource for finding information about colleges and universities. We believe that our College Enquiry Chatbot can help students make informed decisions about their future and support them in achieving their academic goals.

II. LITERATURE SURVEY

A literature survey is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books, and other sources relevant to a particular area of research. It should give a theoretical base for the research and help you (the author) determine the nature of your research.

Neelkumar P. Patel[1] , Devangi R. Parikh[2], Darshan A. Patel[3], Ronak R. Patel[4] AI and Web-Based Human-Like Interactive University Chatbot (UNIBOT). The project uses the concept of Artificial Intelligence and Machine Learning. PHP Language is utilized for the development of Chatbot. The chatbot is also known as "UNIBOT" i.e., "University Chatbot". Graphical User Interface (GUI) is an

Deepfake Video Detection using Deep Learning

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ABSTRACT

Deepfake videos have become a growing concern in recent times, as they can be used to spread false information, manipulate public opinion, and defame individuals. Detecting deepfake videos is a challenging task due to the complexity and sophistication of deepfake techniques. In this paper, we propose a deep learning-based approach for deepfake video detection using Jupyter Notebook and Django framework in Python. The implementation of our system involved the use of Python programming language, TensorFlow and Keras deep learning libraries, and Jupyter Notebook and Django frameworks for data preprocessing, analysis, and web application development. Our system can be easily integrated into existing video processing pipelines and can be deployed in real-world applications. To evaluate the performance of our system, we conducted extensive experiments on a large dataset of real and fake videos. Our results show that our deep learning-based approach outperforms existing methods in terms of accuracy and robustness, even when dealing with advanced deepfake techniques. our proposed system represents a significant contribution to the field of deepfake video detection.. The system can be deployed in a variety of applications, such as social media platforms, news agencies, and video-sharing websites.

Keywords: CNN(Convolution Neural Network), RNN (Recurrent Neural Network)

1. INTRODUCTION

The rise of deepfake videos poses a significant threat to society as they can be used to manipulate public opinion, spread false information, and defame individuals. Deepfakes are computer-generated videos that use AI technology to manipulate audio and video to make it appear as though a person is saying or doing something they did not. These videos can be very convincing and difficult to distinguish from real videos, making it a growing concern for law enforcement agencies, media outlets, and social media platforms.

To address this issue, there is a growing need for accurate and reliable deepfake detection methods. One promising approach is the use of deep learning algorithms, which have been shown to be effective in detecting deepfake videos. Deep learning models can analyze the visual and audio features of a video and detect signs of manipulation or fakery. In summary, this paper presents a deep learning-based approach for deepfake video detection, which is a significant contribution to the field of AI and computer vision. Our proposed system can help prevent the spread of misinformation and malicious uses of AI technology, and can be deployed in a variety of applications.

1.1 Problem Statement

The rapid development of deep learning techniques has led to the emergence of deepfake videos, which can be created using artificial intelligence algorithms to manipulate video and audio footage. These deepfakes can be used for malicious purposes such as spreading fake news, propaganda, and cyberbullying. It is essential to develop effective methods for detecting deepfake videos to prevent their harmful effects.

2. LITERATURE SURVEY

Code Solution - A Simple Solution for Designing Web Pages & API for Data Based on the MERN Stack

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ABSTRACT

Web development has become increasingly complex, requiring developers to have a deep understanding of various coding languages, technologies, and best practices. This can make the process of designing and deploying a web page time-consuming and challenging. To address these challenges, there is a growing need for tools that simplify the web development process and make it easier for developers to create high-quality content. In this paper, we present Code Solution, a web development tool that offers a powerful and effective solution for simplifying web development. Code Solution offers several key features, including a user-friendly interface that makes it easy for developers to interact with the UI of the page and enter the required fields to generate CSS code. It also offers CSS generation, API generation for different categories and fields, an end-to-end deployment procedure, and stays up-to-date with the latest developments and best practices in web development. For a newbie in programming, it could be difficult to understand how to design web pages. This is because building a web page using CSS is a much more difficult task and it requires a considerable amount of time.

By offering these key features, Code Solution simplifies the web development process and helps developers create high-quality content. Our tool has been extensively tested and validated, and it has been shown to significantly reduce the time and effort required to design and deploy a web page. We believe that Code Solution has the potential to revolutionize the web development industry, making it easier for developers to create high-quality content and bringing new levels of efficiency and productivity to the web development process.

Keywords: CSS Generation, API, Deployment.

1. INTRODUCTION

Web development has become a complex and multi-faceted field, requiring developers to have a deep understanding of various coding languages, technologies, and best practices. The process of designing and deploying a web page can be time-consuming and challenging, especially for developers who are just starting out or those who are working on a tight deadline. In addition, the rapid pace of technological advancement has resulted in a proliferation of web technologies and coding languages, making it difficult for developers to keep up with the latest developments and best practices.

1.1 Background

Web development has come a long way in recent years, with new technologies, best practices, and coding languages emerging all the time. As a result, web development has become increasingly complex, requiring developers to have a deep understanding of multiple coding languages, technologies, and best practices. This complexity has made the process of designing and deploying a web page time-consuming and challenging, especially for developers who are just starting out. To address these challenges, there has been a growing demand for tools that simplify the web development process and make it easier for developers to create high-quality content. There are a variety of tools available, including code generators, template-based solutions, and integrated development environments (IDEs). However, these tools often fall short in one or more areas, such as user-friendliness, CSS generation, API generation, or deployment procedures.

Given the challenges faced by web developers, there is a clear need for a tool that offers a comprehensive and effective solution for simplifying web development. Code Solution is a new web development tool that offers a powerful and effective solution for simplifying web development. Our tool offers several key features, including a user-friendly interface, CSS generation, API generation, and an end-to-end deployment procedure, and stays up-to-date with the latest developments and best practices in web development

1.2 Problem Statement

An Open Source, Adaptable Ticket Handling Framework Focused on B2B Applications

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ABSTRACT

From an SMB to an Enterprise, every business solution relies one way or another on some form of CRM system. This implementation happens in client-facing, customer-facing and internal levels. All of these implementations have a common interaction – a "ticket" issued by a client/user/manager that has to be handled by employees in those fields, and resolved to meet their requirements. In real world application however, it is observed that there is considerable fragmentation in those use cases, as there is variance in each type of "ticket" depending on the field or process it is issued in. This leads the organization to opt for different tools for one or more, or in common cases, all of the avenues. Most of the time third party tools like Salesforce, Zendesk etc. are deployed at a field-specific level to meet those requirements. We found this to be an inconvenient downside, as now the company has to manage different software licenses, and reach out to different support teams in case of outages or failures in said software. Our goal with this project is to build an open-source and adaptable base framework for these use cases, such that all the different instances could be built on the same architecture or foundation, thus greatly reducing stress on license management and support handling. The project would provide a stable "starting point" for the organizations' developer team to build on, and customize it based on company-specific or department-specific needs. We realize that currently available and established solutions such as Salesforce are specialized to their specific use cases and for this reason our goal is not to build a competing solution to a similar avenue. Instead of that we open doors for companies and individual developers to build on our framework so that those target individuals, entities, small or medium businesses or enterprise corporations can put their own touch in their implementation and specifically design the application to cover any/all of their use cases.

Project GitHub: https://github.com/Dricera/final-project

Keywords: *Ticket, Open Source, Framework, API, Server, CRM, Cross Platform*

1. INTRODUCTION

Ticket handling systems are a crucial component in modern organizations for managing and resolving customer support requests, technical issues, and other types of tasks [1]. They provide a centralized platform for tracking, communicating, and resolving tickets, making it easier for organizations to manage their operations and improve customer satisfaction. However, traditional ticket handling systems can be limited in their functionality, scalability, price constraints and user experience.

In response to these limitations, the ticket handling framework presented in this paper attempts to offer a comprehensive base framework as a solution for managing and collaborating on tickets. The implemented system combines the power of a backend .NET Core API server and a frontend SPA server to provide a seamless experience for users and administrators. The backend provides a REST API for managing tickets, while the frontend provides a user-friendly interface for users to interact with the tickets. The system also supports real-time collaboration and communication between users, making it easier to resolve tickets and improve productivity.

The .NET Core API server implements the ticket management functions and utilizes MongoDB as a data storage solution. The SPA server provides a responsive and intuitive interface for users to interact with the tickets. The planned system includes features such as ticket prioritization and assignment, making it easier to prioritize and manage tickets. The system is designed to be deployed on any server architecture or cloud service, making it highly flexible and scalable.

The rest of the paper is organized as follows: In the System Architecture section, we provide an overview of the architecture and components of the ticket handling framework. In the Implementation section, we describe the implementation of the backend and frontend components, including the REST API and user interface. In the Evaluation section, we evaluate the performance and functionality of the

Data Privacy in the AI Age: The Critical Need for Right-to-be-Forgotten Techniques & Implementations in Artificial Intelligence

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ABSTRACT

As we continue to make leaps in technological advancements and innovations, especially in Artificial Intelligence domain, there is a severe and urgent need for strongly enforced data protection laws and regulations to safeguard user data. Today, personal data is a highly valuable commodity that is constantly being collected, processed, and analyzed by different organizations for their business purposes. However, the lack of strongly enforced data protection laws and regulations often results in damage to user's personal and intellectual properties and rights. This paper highlights the importance of the "right to be forgotten" in the context of AI models that use personal data, and the need to develop defined techniques for building AI models that can support the deletion of user data upon receiving a right-to-be-forgotten request. With such a request, under GDPR, a user can request to have their personal data removed from an organization's database, portal etc. The paper examines the current data privacy environment and the limitations of existing regulations such as the General Data Protection Regulation (GDPR), and emphasizes the need for stronger data protection laws and regulations to safeguard user privacy and rights. Additionally, the paper explores potential techniques for implementing the right to be forgotten in AI systems and models, and the challenges associated with their development and adoption. Ultimately, with this paper, we aim to underscore the need for stronger enforcement of user privacy and data protection in the development and use of AI technology.

Keywords: *Technology, Law, Cyberlaw, Artificial Intelligence, EU Law, GDPR, Intellectual Property, Data Protection, Privacy, Data Privacy, Right To Be Forgotten*

1. INTRODUCTION

We have seen tremendous growth and notable advancements in the use of Artificial Intelligence (AI) in various industries, from healthcare to finance, retail, and entertainment. While AI has the potential to significantly improve our standard of life in positive ways, it also raises serious concerns about data privacy and security. Personal data is considered a highly valuable commodity, which companies are striving to collect, process, and analyze for their business purposes. However, these mass data-mining operations, in combination with the lack of strongly enforced data protection laws and regulations, can result in damage to a user's personal and intellectual properties and rights.

This paper will explore the critical need for the "right to be forgotten" in the context of AI models that make use of personal data, and the need to develop defined techniques for building AI models that can support the deletion of user data upon receiving a right-to-be-forgotten request.

Right to be Forgotten is very difficult to implement when it comes to AI systems, as once the model is built on the user data there's no defined system or technique to selectively remove an individual's data-point from the generated model.

The aim of this paper is to highlight the critical need for stronger enforcement of data protection and user privacy laws and regulations in the development and usage of AI technology. By examining the current data privacy landscape and exploring potential implementations for the right to be forgotten, we aim to raise awareness on this crucial issue and foster future research and development in a direction conducive to user data privacy and data protection.

Malicious Web Content Detection Using Machine Learning

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ABSTRACT

Malicious web content is a significant problem in today's digital world. Cybercriminals often use various techniques to deceive users into visiting websites that contain malicious content, such as phishing scams, malware downloads, and other forms of online fraud. These threats pose a serious risk to individuals, businesses, and organizations, and they can cause significant damage to systems and networks. To achieve its goals, the project involves several steps. Firstly, the system will collect a large amount of web data, which can include websites, web pages, and other forms of online content. This data will then be pre-processed, which involves cleaning, filtering, and transforming the data to prepare it for analysis.

Next, the data will be analyzed using machine learning techniques such as feature extraction, dimensionality reduction, and clustering. The system will use these techniques to identify patterns and features that are associated with malicious web content.

Once the system has identified these patterns and features, it will use them to build predictive models that can automatically detect and classify new instances of malicious web content. These models will be trained using a variety of machine learning algorithms such as decision trees, support vector machines, and neural networks.

To address this problem, the project aims to leverage machine learning techniques to automatically detect and classify malicious web content. The approach involves collecting and analyzing a large volume of web data to identify patterns and characteristics associated with malicious content. Machine learning algorithms are then applied to this data to build predictive models that can identify and classify new instances of malicious web content in real-time.Project.

Keywords: *Chrome Extension, Machine Learning, API, Server, Web.*

1. INTRODUCTION

The paper is structured as follows: first, we provide an overview of related work in the field of machine learning for cybersecurity. Next, we describe To address this problem, machine learning techniques can be leveraged to automatically detect and classify malicious web content. Machine learning algorithms can analyze large volumes of web data to identify patterns and characteristics associated with malicious content. This approach has the potential to significantly improve the ability of organizations to protect their users from online threats and reduce the risk of cyber-attacks. In this paper, we present a novel approach to detect and classify malicious web content using machine learning techniques. Our approach involves collecting a large volume of web data and analyzing it using various machine learning algorithms to identify patterns and features associated with malicious content. We then build predictive models based on these patterns and features, which can automatically detect and classify new instances of malicious web content in real-time.

Our methodology, including data collection, pre-processing, and analysis. We then present our results and discuss the performance of our system in detecting and classifying malicious web content. Finally, we conclude the paper with a discussion of the limitations of our approach and future directions for research in this field.

Overall, this paper contributes to the field of cybersecurity by presenting a novel approach to detect and classify malicious web content using machine learning techniques. The system has the potential to significantly enhance the safety and security of online activities and reduce the risk of cyber attacks.

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Smart Attendance System Using OpenCV Face Recognition

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ABSTRACT

Recently, the whole world went through a global pandemic which gave rise to online lectures and work from home alternatives. Due to this switch, attendance was a major issue in schools, colleges and workplaces. The two traditional techniques for marking attendance are either by calling out the roll call or by taking student sign on paper. They are both more time consuming and difficult. Thus, a computer-based student attendance management system is required to assist the faculty in maintaining attendance record. Keeping this scenario in mind, we decided to make a GUI software that would allow teachers/management to keep track of their students/employees better and used machine learning and MySQL database to integrate attendance register using face detection technology. The main idea behind this project is to create a Student/Teacher dashboard for college/schools and provide a system that simplifies and automates the process of recording and tracking students' attendance through face recognition technology. This dashboard will require student and admin (Teacher) authentication. We use this structure to register new users, record data and store it in MySQL database for further use. Then integrate the OpenCV library using python in our Dashboard which collects dataset of students using webcam and train them using supervised learning algorithms to generate trained data which helps in face recognition of the respective student and the dataset is stored in desired file location so the admin can even check the dataset later for corrections. The software automatically generates output in the form of excel sheet which could be imported and exported in our dashboard.

Keywords: Attendance System, Face Recognition, OpenCV, LBPH algorithm, SQL

1. INTRODUCTION

1.1 Overview

Attendance management is a significant process that is carried out in every institute and workplace to monitor the performance of the student/employee. Traditionally, student attendance at the institutes is manually reported on the attendance sheets. It is not a productive operation and is more time consuming and difficult[1]. Thus, a computer-based student attendance management system is required to assist the faculty in maintaining attendance record.

Some institutes still use the old paper or file-based system and some have adopted strategies of automated attendance using some biometric technique[2]. Face recognition is also widely used nowadays in different areas such as universities, banks, airports, and offices. Since the application of image processing is vast, extensive work and research have been carried out in utilizing its potential to and to make new innovative applications. One of the most fool proof methods in human detection is facial recognition, which was the earliest application derived from this technology. Computational analysis is needed for face recognition.

A facial recognition system can be used to determine a person's identity by comparing their facial appearance to other people's faces. Image processing which deals with extracting useful information with minimum error from a digital image plays a unique role in the advent of technological advancement.

Face image variation due to head rotation in depth is an unavoidable problem in any face recognition system[3]. The system is proposed to be based on biometrics i.e. Face Authentication. With the presence of biometrics, the system completely eliminates the chances of fake attendance which is a problem with the traditional methods of attendance[4].

1.2 Problem Statement

Pothole Management

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Abstract-Potholes are one of the major causes of accidents and injuries in India and all over the world. According to the data shared by states with the Centre, Uttar Pradesh recorded the highest number of pothole deaths at 987. In Maharashtra, the number of deaths (726) had nearly doubled. Haryana and Gujarat also fare poorly. Haryana reported 522 deaths last year, while it had reported no such fatalities in 2016. Eight people died in Delhi due to pothole- related accidents in 2017. The same city had seen zero deaths in 2016, which gives a clear picture of how potholes are becoming a deadly situation for many. Andhra Pradesh, Kerala, Odisha and West Bengal are there among the top 10 states in deaths related to potholes in the country. The main motive of doing this project is to help government and to save lives of others. The potholes on road leading to worsened road conditions have given rise to fatal accidents thereby leading to death in most of the cases. Many reasons like rains, oil spills wear and tear make the road difficult to walk upon. According to the analysis by road transport authorities near about 10000 people died in the country during a course of three years. The purpose of this paper is to devise a system that will give prior warnings to a pedestrian thereby ensuring safety.

Keywords- *Deaths, Accident Rate, Road Conditions, Reasons of Potholes, Safety of Pedestrian*

1. INTRODUCTION

In India there are thousand of roads which joins different states and countries with each other and make our transport easy and safe. Generally, roads are made using strong bases as it the matter of safety but sometimes due to rain or due to less moisture in the in the soil the roads get a crack and then eventually pothole are created. In India there are potholes in every state and due to these potholes, the rate of accidents is increasing their number day by day. To be more accurate we have gathered the information of accidents and deaths which took place in different states due to potholes or cracks:

- Uttar Pradesh recorded the highest number of pothole deaths at 987.
- In Maharashtra, the number of deaths (726) had nearly doubled.
- Haryana reported 522 deaths last year, in 2016.
- Eight people died in Delhi due to pothole- related accidents in 2017
- Andhra Pradesh, Kerala, Odisha and West Bengal are there among the top 10 states in deaths related to potholes in the country.

These were the main cities, there are many small towns and villages where the issue is still the same.

Some causes of potholes are:

The most common causes for development of pot-holes is as follows:
  1. Lack of bond between the bituminous surfacing and the base course below due to improper application of prime coat and track coat.
  2. Presence of weak spots in any of the pavement layers at some locations of the roadway, at the construction stage itself.
  3. insufficent between mix during laying resulting the surface remaining permeable due to less fines.
  4. Segregation of bituminous mix during laying resulting the surface remaining permeable due to less fines.
  5. Stagnation of water on the pavement surface at local depression or due to inadequate cross

News Aggregator and Fake News Detection Website

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ABSTRACT

In today's world, with the rise of social media and online news, it has become increasingly difficult to distinguish between authentic news and fake news. As a result, people need access to reliable news sources and tools to identify and avoid fake news. This Project suggests the creation of a news aggregator and fake news detection website using Django, a popular web development framework. The website aims to provide users with accurate and reliable news sources while also detecting and flagging fake news. The problem is that people are getting huge amount of information, and it can be challenging to distinguish between authentic news and fake news. Moreover, news aggregator websites can contribute to the spread of fake news by aggregating news from various sources without verifying its authenticity. This problem can lead to misinformation, which can have serious consequences, such as public panic, political polarization, and even harm to individuals' health and safety. The website will be designed using Django, a popular web development framework that provides a robust and scalable infrastructure for web applications. The website's design will include features such as a user-friendly interface for searching and filtering news articles, a system for flagging and reporting fake news articles, and a system for verifying the authenticity of news articles before they are published on the website. The news aggregator and fake news detection website using Django aims to provide users with access to accurate and reliable news sources while also helping them identify and avoid fake news. The website's design will prioritize user experience and usability, providing users with easy access to news articles and tools to evaluate the authenticity of the news they receive. Overall, this project has the potential to help combat the problem of fake news and promote informed decision-making.

Keywords: Django , HTML, CSS, JavaScript, Machine learning model, Natural Language Processing (NLP)

1. INTRODUCTION

Social media and digital news platforms has led to the proliferation of fake news, which has become a serious problem that threatens the credibility of news media and can have substantial impacts on individuals and society. In response to this issue, this paper proposes the idea of a news aggregator and fake news detection website that aims to provide users with access to reliable news sources while also detecting and flagging fake news. The proposed website will use Django, a popular web development framework, to develop a good interface that allows users to search and filter news articles from various sources. Additionally, the website will use a machine learning model based on natural language processing (NLP) and text classification techniques to detect and flag fake news articles. The website's design will prioritize user experience and usability, providing users with easy access to news articles and tools to evaluate the authenticity of the news they receive. This manuscript outlines the approach employed to develop the news aggregator and fake news detection website, including the machine learning model, data preprocessing techniques, and model evaluation metrics. Additionally, the paper will discuss the plan and execution of the website, including the user interface, database management, authentication, authorization, and scalability. Finally, the paper will evaluate the performance of the website and discuss future directions for research and development. Overall, the proposed news aggregator and fake news detection website have the potential to help combat the problem of fake news and promote informed decision-making. By providing users with access to reliable news sources and tools to evaluate the authenticity of the news they receive, the website can contribute to the fight against misinformation and its consequences.

2. LITERATURE REVIEW AND OBJECTIVE

The objective of news aggregators is to provide users with a comprehensive view of news stories from multiple sources. This approach allows users to get a better understanding of different perspectives

Software Based Voice Assistant for Blind using ML

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ABSTRACT

The development of technologies to aid the blind and visually impaired has become increasingly important due to the significant impact it can have on the quality of life for this population. According to the World Health Organization (WHO), there are 285 million visually impaired people [1]. Vision impairment can create barriers to independence, employment, and social engagement, making it essential to develop technologies that can help overcome these challenges. Advances in technology have allowed for the creation of various devices and applications that can aid in navigation, object recognition, and communication, among other things. These technologies can help reduce dependence on others and promote greater independence, which can lead to a better quality of life for the visually impaired. This paper will discuss about the project which will help blind people through object detecting, natural language processing technologies.

This paper presents a software system that enables voice output by detecting objects through a camera. The system utilizes image processing techniques to identify objects in real-time and generate corresponding audio output. The software is designed to be lightweight and adaptable, capable of running on various devices such as smartphones, tablets, and laptops. In addition, the system features customizable voice output and user-defined object recognition, enabling a wide range of applications, including assisting individuals with visual impairments and providing audio feedback. The system's effectiveness is evaluated through a series of experiments, demonstrating high accuracy in object recognition and efficient voice output generation. Overall, this software system offers a practical and effective solution for real-time object recognition and voice output on various devices, with potential applications in multiple fields.

Keywords: *Object Detecting, Natural Language Processing, Audio Feedback, Image Processing.*

1.INTRODUCTION

Visual impairment is a significant challenge that affects millions of people worldwide. Blind individuals often face difficulties in navigating their surroundings and accessing information, which can negatively impact their quality of life. Recent advancements in machine learning and computer vision technologies have led to the development of various systems that can aid the blind in object recognition and navigation. This paper presents a machine learning project that utilizes computer vision and natural language processing techniques to aid the visually impaired. The system detects objects in real-time through a camera and generates audio output through a speaker, providing auditory feedback to the user. Additionally, the system includes a question and answer system that can answer general queries, providing the user with additional information and context.

The system utilizes various Python technologies and packages for object detection, natural language processing, and voice generation. The object detection model is built using the Google Vision API, which uses deep neural networks to detect objects in real-time. For natural language processing, the system utilizes the Google Text-to-Speech package, which provides various tools and resources for text processing.

2.LITERATURE REVIEW AND OBJECTIVE

a. Review of Relevant Work

The aim of this literature review is to investigate and explore the existing research and developments in the field of voice assistant for blind projects. Specifically, this literature review focuses on the use of voice assistants to aid the visually impaired in their daily activities, such as navigating around their environment and accessing information.

A. Digital Assistant for the Visually Impaired (DAVID)
   Author: Ezekiel Marvin

Image Captioning Generator Using LSTM Based on RNN Model

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ABSTRACT- Humans collect information from various living or non-living things. They have a tendency to understand and analyse the things they watch and recognize them. Sometimes it happens that we see some of the things and we cannot recognize what is going on around us. Describing the image becomes difficult for humans sometimes. This problem gave us the idea about this project using Natural Language Processing, Long-Term Short-Term Memory and RNN algorithm. We have been working on this project to detect the images just by uploading the images and recognizing the objects, colours, background detect, gender detection, etc. After the images get uploaded it uses algorithms to recognize and give the captions about the objects and other stuff present in it. We will be using the Flickr30K dataset to train our model which will help in analyse and recognize objects and many other things in images. flickr30K dataset has 30,000 of data which is already trained to work accordingly.

Keywords: *LSTM, RNN, NN, CNN*

1. INTRODUCTION

This project is basically made for recognition of an image using RNN (Recurrent neural network) is a type of artificial neural network which uses sequential data or time series data. and LSTM (Long-Term Short-Term memory) is an artificial neural network used in deep learning and artificial intelligence. It will take an image by piece by piece and recognize the image from the datasets given the database so it will compare the image and give you a result as per the category of an image it will give you a captioning or a statement about the image given by the user processing and predicting. We have used algorithms like   Beam algorithms and Greedy algorithms. In this we have two of the algorithms to detect the objects in this beam algorithm will be fastly recognizing the objects and due to that the time will be saved and greedy algorithm will be helping in giving more accurate captions.

1.1 PROBLEM STATEMENT

We shall use an encoder-decoder model to solve this issue. Here, the encoded versions of the image and the caption will be combined and fed to the decoder by our encoder model. Our model will use CNN as the "picture model" and RNN/LSTM as the "language model" to encode text sequences of various lengths. A Dense layer processes the combined vectors from both encodings to provide the final forecast. The neural network's component that deals with images and the component that deals with language will be trained independently utilising images and words from different training sets by using a merge architecture to keep the image out of the RNN/LSTM.

2. LITERATURE SURVEY AND OBJECTIVES

2.1. LITERATURE SURVEY

[1] **Chetan Amritkar[1], Vaishali Jabade[2], Image Captioning Generation using Deep Learning Technique**. It automatically detects the important features without any human supervision, a convolutional neural network is significantly slower due to an operation such as maxpool. The CNN is used for feature extraction from image and RNN is used for sentence generation. The model is trained in such a way that if input image is given to model it generates captions which nearly describes the image.

[2] **Mohana Priya R [1], Maria Anu [2], Divya S [3], Building a voice-based image generator with deep learning** It recognized voice-based images so that even voice can be recognized, voice module is

Securing & Sharing the Documents Using Blockchain and IPFS Technologies

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ABSTRACT

This work proposes a decentralized file-sharing system that uses Blockchain technology and Interplanetary File System (IPFS) to address security concerns. The proposed system ensures data security and transparency by using Blockchain technology to store information in a tamper-proof and immutable manner, while IPFS is utilized for decentralized file storage and sharing. Smart contracts control access to files by enforcing predefined access-control lists and Metamask are used for secure user authentication and encryption/decryption of file transactions. The proposed system provides users with greater control over their data, ensuring its security and immutability, and has been shown to outperform traditional TTP-administered centralized systems in terms of transparency, security-managed access, and quality of data. The proposed system has potential applications in various domains, such as healthcare, finance, and government, where the security and privacy of data are critical. The use of smart contracts ensures that access to files is granted only to authorized users, enhancing security and reducing the risk of data breaches.

Keywords: *IPFS – Inter Planetary File System, SHA 256 – Secure Hashing Algorithm 256, TTP - Trusted Third Party*

1. INTRODUCTION

A proposed solution to the challenges faced by current file sharing systems is a new framework which uses Blockchain technology. The proposed system is designed to use Ethereum Smart Contracts to store metadata about files, making the records secure. Additionally, the use of Interplanetary File System (IPFS) and multi-hash Blockchain system ensures instant access to files by all members of the network. A smart contract is also implemented to control access privileges and enforce predefined access-control lists for better transparency, security-managed access, and quality of data. Gas consumption-based analysis conducted in a private Ethereum network showed that the proposed system performs better than traditional Trusted Third Party (TTP) administered centralized systems. Combining Blockchain technology, IPFS, and Ethereum Smart Contracts provides a secure and efficient solution for file sharing. The use of decentralized storage ensures that there is no single point of failure, making the system more resilient to attacks. In addition, the use of smart contracts ensures that all transactions are transparent and tamper-proof, providing an auditable trail of all file sharing activities. The proposed system is also highly scalable and can be easily extended to accommodate a large number of users and files.

2. OBJECTIVE OF STUDY

1. To create a secure and user-friendly platform that allows individuals to have full control over their personal data.
2. To provide end-to-end encryption, two-factor authentication, and data sharing to ensure maximum security of user data.
3. To encourage transparency and accountability by allowing users to see who can access to their data.

3. LITERATURE REVIEW

In [1] The smart contract is implemented to control the access privilege and the modified version of IPFS software is utilized to enforce the predefined access-control list. An application framework on a secure decentralized file sharing system is presented in combination with IPFS and PKI to secure file sharing.

In [2] Traditional cloud storage systems, attribute-based encryption (ABE) is regarded as an important technology for solving the problem of data privacy and fine-grained access control. However, in all ABE schemes, the private key generator has the ability to decrypt all data stored in the cloud server, which may bring serious problems such as key abuse and privacy data leakage.

Image Forgery Identification Using Deep Learning

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ABSTRACT

In the discipline of forensics, copy-move forgery detection is likely one of the most active research fields. The majority of known algorithms rely on block and key-point approaches, alone or in combination. Deep convolutional neural network techniques have recently been used in picture classification, image forensics, image hashing retrieval, and other areas. These techniques have outperformed more conventional techniques in these areas. In the paper, a brand-new convolutional neural network-based copy-move forgery detection approach is provided. The suggested approach makes use of the CNN algorithm and Error Level Analysis, where ELA determines the compression ratio between the original image and the fake image since the compression of the original image and the fake image differ. Results from the experiments demonstrate that the method we suggested produces a forgery image created automatically by computer with a simple copy-move operation in a satisfactory manner. A convolutional neural network is used in the proposed system to automatically build hierarchical representations from the input RGB colour photographs. This innovative method of image forgery detection is based on deep learning. The Error Level Analysis is a forensic technique on the picture to evaluate images across various levels of compression, in contrast to the proposed CNN, which is specifically built for image splicing and copy-move detection applications.

Keywords – *Image Forgery Detection, Convolutional Neural Network, Deep Neural Network.*

1.INTRODUCTION

The most typical form of tampering involves copying one portion of an image and pasting it into another portion of the same image. Undoubtedly one of the most active study areas in blind image forensics is copy-move forgery detection . In the literature, numerous cmfd techniques have been documented. Key-point based methods and block based methods can be used to loosely classify them. The first category methods frequently employ the scale-invariant feature transform and speeded up robust feature techniques. From the entire image, features of the important spot are first extracted. Then, in order to identify traits that are comparable to each key point, each key point is compared to these features. . If a clustering zone produced by matching pairings with the same affine transformation is sizable enough, a forging region may be recognized. In addition to effectively locating duplicated regions, key-point-based algorithms also perform well when dealing with geometric distortions like rotation, scaling, and translation. The disadvantage of key point-based approaches is that it can be challenging to find repeated regions with weak visual structures or key-points. The image is divided into overlapping blocks using block-based algorithms, which then extract some features from each block and search for matching block features. If there are enough matching pairings that share the same shift vector to reach a predetermined number, such matching pairs are taken into account to be a part of duplicated areas.

1.1 Problem Statement

Since the invention of photography, individuals and organizations have often sought ways to manipulate and modify images in order to deceive the viewer. Existing projects have worked on the comparison of image forgery detection methods, these are often limited in scope and only compare variants of the same algorithm on images that are specifically created for that type of method. There are also forged images which cannot be detected by the existing applications.

Vehicle Accident Detection and Prevention Using IoT

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ABSTRACT

Internet of Things (IoT) has a great impact on the new era of technology. Technological advancement and invention of smarter devices are going neck and neck in today's world. A common incident such as car accidents hampers the advancement of human life. Most common reasons for the accidents are - driver's unawareness and uncontrolled speed of vehicle. We have developed an IoT based solution to detect and prevent such incidents. This paper focuses on a smart system that alerts and controls the speed of the vehicle. It measures real-time distance between vehicles and/or obstacles in front of the vehicle using Ultrasonic sensor. It controls speed of the vehicle and alerts respective individuals if an accident occurs. The core processing unit of the proposed system is Arduino incorporating Naïve Bayes Classifier. This paper presents an accident prevention mechanism developed through alcohol detection using an MQ3 alcohol sensor followed by automatic engine locking. The detection part uses an SW-420 vibration sensor to detect any sort of abnormal vibrations that may occur from a collision. The proposed system is implemented and the experimental results show that the system works properly in different road traffic situations and the proposed system provides an efficient, cost-effective, and real-time solution to prevent vehicle accident.

Keywords: *Arduino, Sensors, Accident, Vehicle, IoT, Ultrasonic Sensor, Eye Blink monitoring System, Alcohol Sensor.*

1. INTRODUCTION

Internet of Things (IoT) brings the human civilization one step closer to direct communication between machines. It enables devices to communicate and exchange information between them, which lead them to take decisions and perform actions. IoT allows real world devices a secure connection and exchange of real-time data. By using this technology, billions of smart devices such as sensors or actuators connected to the internet, collect, and share real world data and information.

Machine Learning is a fascinating term in this modern era of advanced technology that can enrich IoT by enabling devices to take decisions on their own. Emerging IoT devices apply Machine Learning technologies that capture and understand data from the environment and help in more intelligent decision. Sensors, actuators, etc. collect data the from environment which can be used as raw materials for the Deep Learning that help IoT devices perform more intelligently.

As technology advances, human civilization is facing problems also. Vehicle accidents is one of them, which is a destructive incident that interferes with civilization advancement by taking valuable lives. According to a statistic of the World Health Organization (WHO), every year about 1.25 million people die in road traffic crashes. In addition to that, approximately 20-50 million become injured or disabled. According to a study, 2.2% of deaths occur due to road traffic crashes, establishing it as the 9th leading cause death around the globe. This phenomenon cost USD $518 billion globally, which is 1-2% of annual GDP of an individual country. The advancement of technology helps us to aid the challenge of reducing the number of road traffic accidents. IoT and Machine Learning application on vehicles can provide us a better solution to preventing road accidents and therefore increase the numbers of lives saved. A proper alert system to the responsible persons like police, ambulance, relatives can save many injured people from losing their lives.

In this paper, a smart system for vehicles is proposed which can reduce the number of accidents by controlling the vehicle speed, together with a proper alert system. One of the main focuses of this system is its speed controlling mechanism. As the vehicle speed can vary from road to road and time to time, a light Machine Learning strategy named Naïve Bayes Classifier, is used in this proposed system to update the speed control mechanism, and alert the system behavior of vehicle.

1.1   Problem Statement

Smart Luggage Carries with Real Time Tracking System Using Raspberry-Pi

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ABSTRACT

Smart luggage is a revolutionary invention that utilizes sensor to follow its owner's movements, providing ease and convenience for people suffering from spinal cord or back-related issues. The luggage is equipped with a Wi-Fi module that can connect to the user devices. If any obstacles are detected, an alarm is triggered, and a notification is sent to the owner. The smart luggage system is not restricted to a particular age group or sector; it caters to everyone, from school-going students to senior citizens. The technology used in this system is NodeMCU ESP-8266. Additionally, an ultrasonic sensor is installed in the luggage to detect and sense any objects in its path. This innovative technology provides a practical solution for people with disabilities or those who are unable to carry their luggage due to back-related issues. The smart luggage system's ability to follow its owner's movements allows them to navigate easily through crowded places without any inconvenience. With its advanced technology and user-friendly features, it is sure to become a game-changer in the luggage industry.

Keywords- NLP: Natural Language Processing, UML: Unified Modeling Language, DFD: Data Flow Diagram, GPS: Global Positioning System, Wi-Fi: Wireless Fidelity.

I. INTRODUCTION

The development of a user-friendly luggage system that offers practical applications is the primary focus of this project. While robotics technology is incorporated, the system is primarily a luggage system that is designed to provide travelers with enhanced convenience and practicality. The luggage system is operated through a pre-installed mobile phone application that utilizes Machine to Machine (M2M) communication to send commands to the embedded microcontroller in the luggage. This microcontroller then acts on these instructions, which can include tracking the location of the luggage and sending it to the user or providing the weight of the luggage. The luggage system's location tracking function is achieved through a GPS module that is activated upon the user's command. This ensures that the user has complete control over when the luggage's location is tracked, providing an added layer of security. The luggage system also aims to enhance its balance through the use of motorized wheels. This function is achieved through a motor controller IC that is connected to the microcontroller. The luggage can be set to semi-automatic or manual mode of travel, and the user's movements are tracked using an accelerometer, allowing the motors to move accordingly. Overall, this innovative luggage system is designed to provide a seamless travel experience for users by offering practical applications that enhance convenience and security. The use of M2M communication and embedded microcontroller technology ensures that the luggage system is user-friendly and easy to operate.

1.1 PROBLEM STATEMENT

Dragging the luggage all over the place has been done since the golden ages. Smart luggage has become a growing need for modern travelers who require a more efficient and secure way of carrying their belongings. However, traditional luggage systems lack the features that cater to this need, resulting in a range of issues, including lost luggage, theft, damage, and inconvenience. Therefore, there is a need to develop an innovative solution that addresses.

II. LITERATURE SURVEY

These references are publications on the topic of smart luggage and related systems. P.L. Santhana Krishnan, R. Valli, and R. Priya published a paper in 2021 titled "Smart Luggage Carrier System With Theft Prevention And Real Time Tracking Using Nano Arduino Structure". In 2016, Shweta Ma, Tanvi Pb, Poonam Sc, and Nilashree Md published a paper titled "Multipurpose Smart Bag". V. Madhava Sarma, S.V.Y.S. Samraj, S.R. Deepika, N. Neha, and K. Prabhakara Rao published a paper titled "Smart Luggage" in 2017. In 2020, Bhanu Prakash Tiwari, Anchal Gupta, Yash Garg, and Priyanshu Pandey published a paper titled "Smart Luggage Carrier" from the Department of Electronics and Communication Engineering at ABES Institute of

A Deep Learning Approach for Reconstruction of Images using Auto-Encoder

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ABSTRACT

Object detection problem in terms of different lighting conditions has been a challenging issue. Existing algorithms can only detect the objects with their shapes. However, when the color of an object changes in different times of a day for its various lighting conditions, these models fail to detect the shape of those color changing objects. As a result, the reliability of those models decreases. This model proposes an Autoencoder technique which can transfer an image of an object to its exact color. A new dataset is created where the image of an object is taken in two different lighting conditions to represent change in color of the same object. Then an autoencoder technique is applied on this dataset. The main function of an Autoencoder is to reconstruct its input image which is given in output through a neural network. Once the object is reconstructed to its exact color, understanding the object for any model becomes much more efficient in comparison with existing object detection models.

1. INTRODUCTION

Camera sensors can only capture a limited range of luminance simultaneously, and in order to create high dynamic range (HDR) images a set of different exposures are typically combined.we address the problem of predicting information that have been lost in saturated image areas. We show that this problem is well-suited for deep learning algorithms, and propose a deep convolutional neural network (CNN) that is specifically designed taking into account the challenges in predicting HDR values. We demonstrate that our approach can reconstruct high-resolution visually convincing HDR results in a wide range of situations, and that it generalizes well to reconstruction of images captured with arbitrary and low-end cameras that use unknown camera response functions and post-processing. Furthermore, we compare to existing methods for HDR expansion, and show high quality results also for image based lighting. Finally, we evaluate the results in a subjective experiment performed on an HDR display. This shows that the reconstructed HDR images are visually convincing, with large improvements as compared to existing methods.

1.1 **Problem Statement**

Lighting is a key factor in creating a successful image. Lighting determines not only brightness and darkness, but also tone, mood, and atmosphere. Therefore, it is necessary to control and manipulate light correctly in order to get the best texture, vibrancy of colour, and luminosity on your objects. Camera sensors should be able to detect objects in different lightning conditions. In different times of day these sensors work properly but when it comes to night these sensors fail to detect those objects. Our model proposes a solution which can detect the objects capture in low light conditions and can transfer the image of the object to its exact color

.LITERATURE SURVEY

P. Prystavka[1], O. Cholyshkina,S. Dolgikh[2], and D. Karpenko[3],"Automated Object Recognition System Based On Convolutional Autoencoder".

In this paper, they have implemented and tested an automated technology for object recognition based on digital images obtained from aerial photography that employed informative latent feature extraction with a deep convolutional autoencoder.

A.Raghunandan[1], Mohana, P. Raghav[2] and H. V. R. Aradhya[3], "Object Detection Algorithms For Video Surveillance Applications".

In this paper,the various object detection algorithms such as skin detection, colour detection, face detection and target detection are simulated using MATLAB 2017b with an accuracy of approximately

Three-Phase Asynchronous Motor using Industry 4.0 with Load Expedient

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ABSTRACT

  The asynchronous motor leads industrial applications in the current environment. Asynchronous motors' main advantage is its robust and straightforward construction. It is quite costly and can operate in any environment. In order to apply industry 4.0 in a safe and cost-effective manner, this project provides information on the load expedient of an asynchronous motor in several industries. Asynchronous motors are protected by the design from failures such as overcurrent, overvoltage, under voltage, and single phasing. Voltage and current are also observed, and manual and automatic methods of controlling an asynchronous motor are provided. Due to their high level of robustness, dependability, cheap cost, maintenance, and high efficiency, asynchronous motors are used in the majority of industrial applications, so protecting them is crucial. The sensors collect data on variables such as an asynchronous machine's load current and voltage and communicate it to the processing unit (Arduino). It will check the parameters and display results. This project provides automatic and manual induction machine start and stop control to communicate data for web monitoring in order to prevent system failure. In order to automate and user-friendly the system, it also offers an industrial application.

  Keywords: Asynchronous motor, industry 4.0, Wireless area network (WLAN), ATmega 328 Microcontroller, Contactor, Relay.

1. INTRODUCTION

DC motors were widely used in the advancement of electrical technology for many different industrial applications. Due to the significant advantages of asynchronous motors, the outlook of industry altered after the advent of AC motors, particularly asynchronous motors. An asynchronous motor has two major components: a rotating component and a stationary component. Mutual induction, which is based on the same principles as the transformer, is used to connect the two components. Another name for an induction is a revolving transformer. The primary benefits of 3-phase asynchronous motors are self-starting, durable design, strong power factor, and inexpensive cost, however the speed cannot be regulated without sacrificing efficiency: The following variables, such as an unbalanced 3-phase supply, overvoltage, and overload, can contribute to electrical problems. Mechanical faults: The mechanical faults can be caused by a broken rotor bar, an eccentric air gap, bearing damage, rotor and stator winding failure.

Due to technological development, monitoring and control is automatic. Industry 4.0 is the latest development to control and monitor the motor from a remote location. This method provides easy control and reliability. The reliability of the motor is achieved by continuous monitoring of electrical and mechanical parameters. The performance of the asynchronous motor depends on the above electrical and mechanical parameters. Therefore, continuous monitoring of the induction motor is required for safe and reliable operation of industrial motors.

  The drivers of these motors are mostly focused on motor control and the predictive maintenance schedules of the motors are not calculated. Enterprise resource planning (ERP) is being used to increase efficiency, particularly in 7/24 manufacturing companies. However, unexpected failures are not predicted by the ERP system, which may cause disruptions in the production process. In this study, the temperature, current, voltage, cycle, speed, frequency, torque, and flux data of single-phase and three- phase asynchronous motors (S / 3PIM) were read using TCP/IP protocol via Wi-Fi.These characteristics were read and transferred to the central programme utilising the already-existing Internet network, avoiding the need for new wiring. All of the motors' parameters were gathered by the central software, which also established the appropriate maintenance schedules. This system was applied and used in a textile factory. Frequency controlled motors have special 50/60 Hz filters in their structure, which make it impossible to measure the energy with the uniform integrations developed for normal energy measurement.

Integrated DC-DC Converter Based Grid Connected Transformerless Inverter

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Abstract

Owing to low cost, small size, and low weight, transformerless inverters became prominent in single-phase grid connected photovoltaic (PV) systems. Key issues pertaining to these inverters include suppression of common mode (CM) leakage current and improvement of conversion efficiency. Achieving higher efficiency in single-phase grid-connected photovoltaic systems depends on the number of stages involved in feeding power to the grid, predominantly, if the PV array voltage is less than the peak value of the grid voltage. In this paper, an integrated dc-dc converter based grid-connected transformerless PV inverter is proposed which is aimed at maintaining high efficiency, even if the PV array voltage falls below the peak value of grid voltage (efficient operation at an extended input voltage range). A modulation strategy is discussed in order to minimize the flow of CM leakage current. Further, the efficiencies of certain transformerless inverter topologies are analyzed and compared with that of the proposed topology.

Literature Review

In recent years, Photovoltaic (PV) holds a pivotal position in ever-increasing energy demand due to easy accessibility, easy installation, high return on investment, and low maintenance cost. A complete PV system consists of a PV array, DC–DC converter (optional), DC-link (DCL) capacitor, inverter, filter, and a grid. Therefore, based on the devices, the PV system configuration is categorized into two types i.e., single-stage and two-stage configuration systems.

A single-stage system consists of a PV array, DCL capacitor, inverter, filter, and a grid. In this system, the weight and size of the system are considerably reduced but complexity is greatly increased due to the handling of different functionalities (Maximum Power Point Tracking (MPPT), current control, voltage control, and grid synchronization) by the inverter alone. Moreover, for some applications, the PV voltage needed to be increased to the desired level that cannot be achieved without the use of a DC–DC converter. Therefore, to reduce the system complexity and widen its applications range, a DC–DC converter is introduced in the two-stage configuration system [2].

In the 1st stage of the PV system, a DC–DC boost converter is used to extract the maximum power from the PV panel through the maximum power point technique and lift-up the voltage level according to the desired application. Generally, the classical converters such as boost, Single Ended Primary Inductor Converter (SEPIC), and cuk, etc. are used to attain a High Voltage Gain (HVG). For this purpose, a converter is needed to be operated at a high duty cycle, which has some disadvantages, such as

(a) increased duty cycle causing lower efficiency due to increased losses in parasitic resistances of a diode, capacitor, and inductor;

(b) as the duty cycle increases, the voltage stress on the switch increases; and

(c) increased conduction and switching losses [3].

To overcome the above-mentioned limitations, numerous researchers have designed different converter topologies that can be categorized into isolated and non-isolated topologies based on coupling [4].

A transformer is used in isolated topologies to attain a HVG; however, due to the heavy weight of the transformer and its core and winding losses, they are not feasible for low power PV applications. Consequently, the authors used non-isolated topologies to overcome the issues in isolated topologies [5–9]. A coupled inductor-based Switch Inductor (SL) configured high lift-up converters for renewable application is proposed in [5].

Due to the usage of coupled inductors, the efficiency of these topologies is low due to the leakage inductances of the windings. The authors proposed single inductor-based converter topologies that can achieve a HVG while maintaining good efficiency [6–9].

In [6], eight different SL-based converter topologies are presented, in which SL is configured with traditional boost, cuk, and SEPIC. Although HVG is achieved by most of these topologies, usage of high

Energy Audit in Viraj Profiles Ltd. (Wire Division) MIDC Tarapur

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ABSTRACT : Today India having less electrical power availability. Industrial sector is major sector in high energy consumption in the world. The demand of electrical energy is increasing due to this gap between demand and supply is increasing. There are two ways to reduce this gap, first electrical conservation and second electricity generation. Due to limited energy resources Increasing electric power generation is very difficult. The effective way to solve this problem is use the available energy in efficient manner. This can be possible by controlling the use of energy. Hence to find out potential for improvements in energy use, to suggest the method with or without finical investment, to accomplish estimated energy saving and cost of energy without affecting production process. This paper suggest ways and means to conduct an energy audit in an industry.

Keywords- Energy Audit, Energy Conservation, Energy Efficiency.

INTRODUCTION :
As per the energy conservation act 2001. "Energy audit is defined as the verification, monitoring and analysis of use of energy including submission of technical report." Containing recommendation for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption. In general energy audit is the strategy of adjusting and optimizing energy using systems and methods to minimize energy requirements. The energy, labor and material are three top ranker operating expenses in an industry. An energy is first ranker in them. Hence management of energy is most important for operating cost reduction. An energy audit give methods for energy saving opportunities, information of new improved technologies in energy saving, Maintenance methods, quality control of energy, area which require energy conservation and improvements.

ENERGY AUDIT : An energy audit is survey, observation and analysis of energy flow to conserve energy. The energy audit method is help to minimize amount of energy consumption. In which energy conservation measures, recommendations for improvements, solutions on existing problems, cost benefit analysis with payback period calculation. The recommendations are of three types. One is no cost, second is low cost and third is high cost investment. The final answer to problem is not given by an audit it identify area. where improvements require and where energy management is required.

NEED AND IMPORTANCE : The industrial sector is the biggest consumer of energy. In the form of electricity of accounts for 48% of the total commercial energy consumption. The competition in the market the industrial sector has to take the steps. continuously to cut down costs mainly through better technology and improved efficiency of resources employed. An energy is an important resource. and energy cost is always rising due to increase in cost of energy resources. As demand and cost of energy is increasing the improvement of energy efficiency. The conservation of energy and proper management of energy is required.

This can be achieved through following methods;

- Reducing wastage of energy
- By using proper technology, energy improves efficiency of energy.
- Use of proper resources of energy which have environmental benefits.
- Buying an energy at economic price
- Wherever possible to make best use of energy by modifying the appliances.
- Raising awareness in staff about energy conservation.

Speed control of BLDC motor using IOT

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ABSTRACT – Brushless DC (BLDC) motors are widely used for many industrial applications because of their high torque, high efficiency and low volume. motors are employed in fans called super fans, electric and hybrid vehicles, industrial automation as actuators for industrial robots, extruder drive motors and feed drives for Computer Numerical Control (CNC) machine tools are employed in fans called super fans, electric and hybrid vehicles, industrial automation as actuators for industrial robots, extruder drive motors and feed drives for Computer Numerical Control (CNC) machine tools and home appliances The aim of this research is to develop a model of the BLDC motor and to design an optimal controller for its position control. Generally, PID controller is used for many control problems because of its simple structure and easy implementation. But, in practice, we often do not get the optimum results with the conventionally tuned PID controllers. The purpose of this project is to control and monitor the Brushless DC (BLDC) motor by using IOT and PWM techniques. The speed regulation of sensor less BLDC drive using four-switch three-phase inverter BLDC motor and ESP32 logic controller is proposed here compared the PID controller and Fuzzy logic controller. Our main aim is to design a system which is advanced, useful, easy to handle and cheapest. So why we are control the speed control of BLDC motor using ESP32 Microcontroller, android app & PWM technique.

Keywords – BLDC motor, IOT, PWM, ESP32 microcontroller.

1. INTRODUCTION - BLDC motors are very popular in areas which need high performance because of their smaller volume, high force, and simple system structure. Brushless Direct Current (BLDC) motors are AC synchronous motors with windings on the stator and permanent magnets on the rotor. Permanent magnets create the rotor flux and the energized stator windings create electromagnetic poles. The rotor is attracted by the energized stator phase. In practice, the design of the BLDCM drive involves a complex process such as modeling, control scheme selection and parameters tuning etc. An expert knowledge of the system is required for tuning the controller parameters of the servo system to get the optimal performance. Recently, various modern control solutions are proposed for the optimal control design of BLDC motors [1][2]. However, these methods are very complex in nature and require excessive computation. In contrast, PID control provides a simple and yet effective solution to many control problems [3]. Although PID controllers have a simple structure but it is quite challenging to find the optimized PID gains. The continuing performance improvements of computational systems have made Genetic Algorithm appropriate for finding global optimal solution for control system such as the search of optimal PID controller parameters [4][5]. A sensor less six switch three phase inverter BLDC motor drive is designed using a ESP32 logic controller which eliminates Hall position sensors and operates using a reduced number of switches. The sensor-less speed regulation ensures reliability and can provide a wide speed range with high starting torque for the BLDC motor drive system. The BLDC motor in closed loop control is analyzed and a hardware model of sensor-less three phase six- switch BLDC drive using ESP32 logic controller and Android app is developed.

2. LITERATURE SURVEY

Permanent Magnet Brushless DC motors, known as BLDCM succeeded to gain a great importance in various traditional and critical industries that require speed stability, high force power and high efficiency. Beside their better characteristics in affecting the performance of the whole system, BLDC is characterized by their simple structure, small size, light weight, high force power & efficiency and low maintenance & repair [1], [2], [3]. In the last decade, due to their mechanical friction and electric erosion, BLDC started to replace other famous traditional kinds of motors such as Brushed DC motor, induction motor, etc. Moreover, BLDC guarantees high system efficiency and low audible noise by the total elimination of the brush/commutator assembly [2], [3], [4]. Speed regulation of BLDC is an important control challenge for any brushless DC motor. The stability of the BLDC speed allows the motor to produce a desired high torque. Conventional control techniques such as Proportional-integral-derivative (PID) and proportional integral (PI) were used widely in the field of BLDC speed control. These control techniques are characterized by their simple structure, low cost, fast response, small settling and rise time and low overshoot. The main disadvantage of using these traditional control

Analysis of HEMS (EV, PV, ESS, RT Appliances) using MATLAB

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ABSTRACT: In this project, we proposed a home energy management system (HEMS) that includes photovoltaic (PV), electric vehicle (EV), and energy storage systems (ESS). The proposed HEMS fully utilizes the PV power in operating domestic appliances and charging EV/ESS. The surplus power is fed back to the grid to achieve economic benefits. A novel charging and discharging scheme of EV/ESS is presented to minimize the energy cost, control the maximum load demand, increase the battery life, and satisfy the user's-traveling needs. The EV/ESS charges during low pricing periods and discharges in high pricing periods. In the proposed method, a multi-objective problem is formulated, which simultaneously minimizes the energy cost, peak to average ratio (PAR), and customer dissatisfaction. The multi-objective optimization is solved using binary particle swarm optimization (BPSO). The results clearly show that it minimizes the operating cost from 402.89 cents to 191.46 cents, so that a reduction of 52.47% is obtained. Moreover, it reduces the PAR and discomfort index by 15.11% and 16.67%, respectively, in a 24 h time span. Furthermore, the home has home to grid (H2G) capability as it sells the surplus energy, and the total cost is further reduced by 29.41%.

KEYWORDS: Energy Grid, Electric Vehicle, Single Feed, Solar, Photo Voltaic, Battery, Distribution, Bidirectional Controller.

INTRODUCTION: Energy demand increases very sharply day by day. To overcome this problem and optimize the power generated, researchers have proposed various effective strategy. Consumers may shift their domestic appliances usage from peak hour to off-peak hour to achieve economic benefits. To achieve the benefits a HEMS is required at home. The HEMS optimally schedules domestic usage to reduce electricity bills. Moreover, HEMS increases consumer comfort, reduces peak-to-average ratio (PAR), and minimizes the burden on the grid. Several HEMS strategies have been proposed in the literature. They formulate a multiobjective optimization problem that considers bill minimization and user comfort as system objectives. Optimum scheduling of home appliances in an off-peak period may increase the peak-to-average ratio, which increases the burden on power utility and causes grid failure. To handle the problem of overloading, some researchers have considered PAR as one of the objectives or constraints in optimization problems. The contribution of this project concludes as follows:

1. Includes PV, EV, and ESS simultaneously to minimize the operating cost.
2. Fully utilizes the PV power by shiftable appliances, EV, and ESS while the surplus power is fed back to the grid for economic benefits.
3. The charging and discharging schemes have been presented, including the constraints of ESS and EV. The scheme utilizes the RTP, maximum demand limit, and availability of EV to rationally manage the energy flow between home and utility. The EV and ESS are charged during low RTP periods and provide power to peak energy periods. The discharging power is utilized by domestic appliances while the surplus power is sold back to the grid.
4. A multi-objective problem is formulated, which minimizes the operating cost, PAR, and user's discomfort simultaneously in the HEMS paradigm.

LITERATURE REVIEW: Not only does the shift to low-carbon energy and transportation systems need widespread adoption of clean technology and efficiency measures, but it also necessitates innovative energy management methods to effectively integrate these advances into existing infrastructure. Issues with grid integration of clean technologies may arise on both the energy supply and demand sides, with technologies such as photovoltaics (PV) and electric cars, respectively (EV). Sophisticated energy management may assist in resolving these challenges and optimising resource allocation, such as charging electric vehicles using solar power rather than electricity from coal or gas-fired power plants. There is an imbalance between PV power supply and energy consumption in the residential sector. PV panels provide the greatest power throughout the day [1,2], whereas home electricity consumption peaks in the morning and evening. In addition, typical EV charging patterns contribute to current residential power consumption peaks1. Increased PV and EV adoption will increase power transit across the electrical system, necessitating infrastructure expenditures to avoid overloads

Simulation Based In-built Charging Hybrid EV with IC Engine & External Source

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ABSTRACT --

This paper presents a detailed Hybrid Electric Vehicle (HEV) modelling method based on a multi-physics approach. The model is introduced in order to provide design engineers with the capability to investigate effects of component selection and to develop control systems and automatic optimization processes for HEV vehicles. A full drive train system of a series/parallel HEV is developed including the internal combustion engine (ICE), the motor generator (MG) and the power split device (PSD) along with the vehicle longitudinal dynamics. All aspects of rotational inertial dynamics, friction, damping and stiffness properties are considered. The interaction between all these modules is implemented in the MATLAB/Simulation/Sims-cape block-set environment. The concepts of modularity, flexibility, and user-friendly interface are emphasized during the model development. The numerical simulation results are compared with the analytical results of the same hybrid power train. The convergence between the results makes the model convenient for the future optimization techniques on HEV.

KEY WORDS

Hybrid vehicles, MATLAB/SIMULINK, modelling, simulation, PSD

3. INTRODUCTION

Over the past decade, the lack of petroleum resources and the increased emission rates have stimulated the automotive research all over the world to find more sustainable and clean energy resources. While the limited fossil fuel reserves are being continuously depleted, both the demand and the production rates are growing rapidly. Hybrid Electric Vehicle (HEV) has been considered as a short term solution to not only improve the fuel economy but also reduce its harmful emissions. It is widely known that, HEV combines two sources of energy namely; the conventional ICE and the electric propulsion systems which in turn reduce the dependency on petroleum fuels. Furthermore, the concept of having dual power sources enables the engine downsizing, load leveling and range extending. Proper engine sizing enables running the engine near to its economic conditions, regardless of the vehicle's required power and accordingly less emission levels.

Generally, according to the architecture of hybrid propulsion, there are three basic layouts of HEVs namely; series, parallel and series/parallel HEVs. In series HEV, the mechanical energy is produced by the engine and converted to electric energy through the generator. This electric energy is stored in the battery back and again is converted to mechanical energy via the electric motors to propel the vehicle as illustrated Ease of both installation and operation are the main features of this type but double energy conversion represents its major disadvantages. Also, the series power flow reduces the power-train redundancy. In parallel HEV, both the mechanical power from the engine and electric power from the motor are combined to drive the vehicle. While this layout provides more choices of operation, it is practically complex to implement in the drive-train. Series/parallel HEV layout joins the advantages of the aforementioned layouts and provides the choice of utilizing both the mechanical and electric energies either sequentially or simultaneously. Additionally, regenerative brakes can be applied to transform the vehicle kinetic energy into potential electric one. Nevertheless, the construction complexity is one of its main drawbacks

Accurate modelling and simulation of HEVs enables better understanding and control of their operation. Among the well-known published literature, Khan developed a model for 'Honda Integrated Motor Assist' (IMA) in MATLAB/Simulation environment. Three parameters were considered and compared during two different standard drive cycles; these are fuel consumption, regenerated energy and consumed energy. Peng and Liu introduced an optimization algorithm for the series/parallel 'Toyota Hybrid System' (THS). Later, they discussed the argument between improvements of component sizing or power-train architecture for 'Toyota Hybrid System' (THSII) considering rule based optimization. Peng et al. developed another control algorithm for the model of parallel HEV considering adaptive energy management control systems . Stein et al. introduced a MATLAB/ Simulation model to apply a dynamic programming algorithm. Using ADVISOR, Wipke et al. developed a simulator to simulate the full HEV power-train. While the reviewed work has contributed to the state of the art in HEV, it should

RFID-based Smart Public Transportation System

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Abstract

In today's world, smart ticketing systems for public transport serve multiple useful purposes. Given India's position as the second most populous country globally, a significant number of people rely on public transport. However, issuing tickets to every passenger manually during peak hours can be a tedious and time-consuming task, and providing exact change to passengers can also be problematic. This can result in a higher probability of ticket fraud. To address these issues, this project proposes a single ticketing system for all modes of public transport using an RFID (Radio Frequency Identification) reader machine. The tickets will be e-generated and sent to passengers via SMS, eliminating the need for paper tickets that contribute to deforestation. According to the Forest Resource Assessment, nearly 80,000 to 160,000 trees are felled globally each day for paper production, exacerbating climate change. Additionally, paper tickets are of no use once a passenger disembarks from the bus and require passengers to safeguard them until they reach their destination. The proposed smart ticketing system aims to overcome these difficulties by providing an efficient and eco-friendly method of issuing tickets to passengers.

Keywords— Public Transport, RFID, Ticketing, Ticketless Travel, Smart, Node MCU.

I. INTRODUCTION

Introducing the cutting-edge innovation of a Smart Ticketing system, a game-changer in the realm of public transportation. While some may argue that transitioning to a paperless system would incur higher costs in terms of software and hardware requirements compared to the traditional paper-based approach, the benefits far outweigh the perceived drawbacks.

By leveraging the power of RFID (Radio Frequency Identification) technology in conjunction with a state-of-the-art microcontroller, such as the highly capable Nodemcu ESP32, this Smart Ticketing system takes public transportation to new heights of efficiency and sustainability. RFID has emerged as a top contender in the technology landscape, with its affordability and versatility making it a prime choice for various tracking and locating applications.

At the heart of this innovative system lies the RFID Reader, a powerful tool for detecting RFID cards carried by passengers. Coupled with the advanced capabilities of the Nodemcu ESP32 microcontroller, seamless communication between the RFID Reader and the system is achieved, ensuring smooth and reliable ticketing operations.

One of the standout features of this Smart Ticketing system is its eco-friendly approach. Gone are the days of wasteful ink and paper, as the system generates e-tickets that are sent directly to users' smartphones via SMS. This eliminates the need for physical tickets that are discarded after reaching the destination, contributing to a greener and more sustainable environment.

Furthermore, the system goes beyond ticketing by providing location updates at specific intervals during travel. This feature is particularly valuable for commuters with children, as it allows parents or guardians to have peace of mind by keeping track of their kids' whereabouts in real-time. This parental guardian approach adds an additional layer of safety and security to the daily commute, making the Smart Ticketing system a comprehensive solution for modern transportation needs.

In conclusion, the Smart Ticketing system with RFID technology and a microcontroller is a testament to the power of innovation in revolutionizing traditional systems. With its eco-friendly approach, seamless communication, and added safety features, this system represents the future of public transportation - a smarter, more sustainable, and customer-centric solution that brings benefits to both passengers and the environment alike.

Why You Should Strive To Be an Entrepreneurial Engineer

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Abstract

The main purpose of this paper is to present a innovation to Entrepreneurship Education in engineering courses. Conducting a research with the keywords Entrepreneurship and Education, and restricting to articles in journals and the engineering field. This paper Emphasizes on entrepreneurship and how it becomes an important aspect to integrate within the engineering curriculum due to it's focus on the development of collaborative skills, technical, analytical skills, flexibility, resiliency, creativity, empathy the ability to recognize and seize opportunities. A few research studies have examined the practices and beliefs in entrepreneurship education. Thus, this paper consolidates concepts from literature to help understand, develop and drive models of the entrepreneurship education in engineering. Based on the Report review, this paper provides a useful core of references that includes the oldest, the newest and the highest citations of Entrepreneurship Education in engineering

Keywords: entrepreneurship education; technology transfer; entrepreneurship business.

I) Introduction

Due to its great importance in the establishment of companies to contribute to economic growth around the world, entrepreneurship is one of the most currently discussed academic subject's. According to Stamboulis and Barlas, entrepreneurship and new businesses have become a valuable potential for development and economic growth in modern society. Since the 1960s, the number of entrepreneurship courses offered by universities has increased expressively; primarily due to increased government emphasis on creating new ventures and alleviating unemployment. The increase in entrepreneurship education opened a number of issues that still surrounds the delivery of entrepreneurship in universities. It has become a necessity for universities to cultivate students' entrepreneurial ability to adapt to the economic transformation and upgrading, as well as to construction and development of entrepreneurial economy. It is also important to improve education system in colleges and universities, strengthening innovation training of entrepreneurial talent. Universities are increasingly including technology entrepreneurship in engineering education to follow expansion of the subject of engineering design education in recent decades . Ruda, Martin, Arnold and Danko suggest that innovative opportunities at regional, national and international level
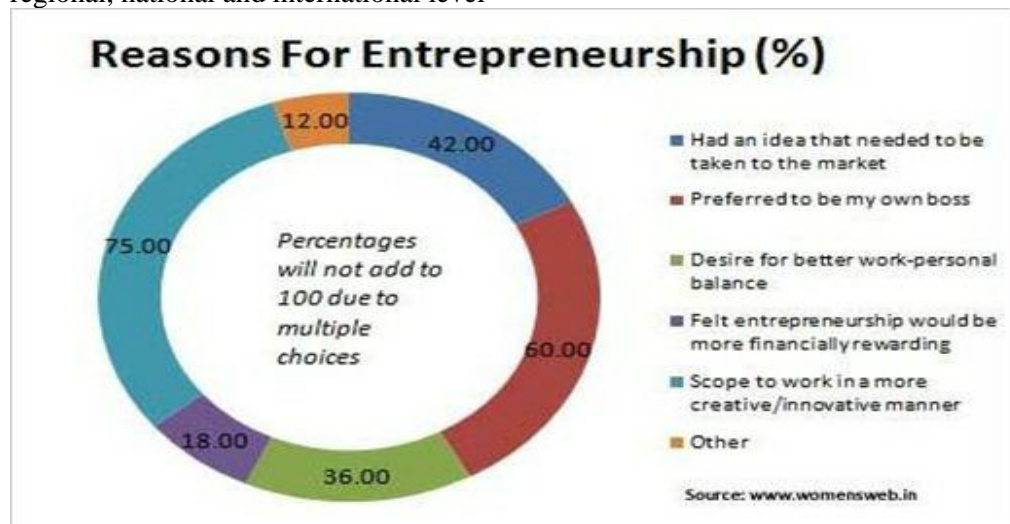
are able to build basic conditions for achieving economic stability. A proposal to deal with such innovative issues is through the spread of entrepreneurial culture, i.e., in educational projects in production engineering undergraduate courses where the entrepreneurship discipline has been implemented. Advanced countries, such as the United States and Japan, have been strongly promoting entrepreneurship education. In addition, they also provide relevant supporting measures to encourage graduates to start an enterprise as one of the major measures to increase the employability of students .

Automatic Car Washer

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Abstract

The automatic car wash system is very commonly used in metro cities and towns in India. This system is used for all types of cars i.e., sedans, hatchbacks, SUVs, etc. The production of cars in India is increasing day by day due to the high demand by people in India. The number of cars on Indian roads has increased significantly so high-end technology must be developed which must be efficient, must use less water, and should be eco-friendly. The appearance of the car is important for people nowadays. So, this project would solve this problem very efficiently. Various steps involved in automatic car washing are rinsing, shampooing, washing, drying, and then waxing. The design of the pipe nozzle and water regulation system used in automatic car washers is discussed in this report. This system reduces the excessive use of water and reduces labor work. We hope this report will be useful to understand the basics of automatic car wash systems.

Keywords: *Car wash, PLC, Pipe, Nozzle*

INTRODUCTION

Nobody likes a dirty car, and while you may prefer washing your car with a particular method, knowing the strengths and weaknesses of different car wash processes is a must. The automatic car wash method has been around for many years. But determining if it is the best method to wash your car can be tricky. When we look at the world in the 21st century, there is no single industry left that does not use machines and their automated functions. The car washing industry is no different. An Automatic Car Washer is a machine designed to automatically wash cars. The system typically consists of a control unit, motors, sensors, a user interface, a water supply, wash components, and a drain. The control unit manages the washing process, the motors drive the washing components, the sensors detect the position of the car and obstacles, the user interface allows the user to control the process, the water supply supplies water to the wash components, the wash components clean the car, and the drain removes the used water. Automatic car washers offer a convenient, efficient, and consistent way to wash cars, reducing the time and effort required compared to washing by hand. They can also conserve water, reduce the risk of injury, and generate revenue by providing a paid car washing service.

TYPES OF AUTOMATIC CAR WASHERS

1.   Touchless Car Washers:
Touchless car washers are machines that use high-pressure water jets and detergents to clean cars without physical contact. The water jets spray water at high pressure to remove dirt and grime. The detergents are usually pre-applied to the car's surface and allowed to soak for a few minutes before the water jets are activated.

2.   Brush Car Washers:
Brush car washers use soft brushes to clean the car's surface. The brushes are mounted on a rotating arm that moves around the car, cleaning the car's surface. The brushes are usually made of soft materials to prevent scratches and damages to the car's surface.

3.   Combination Car Washers:
Combination car washers use both touchless and brush technologies to clean cars. The machines use high-pressure water jets to remove dirt and grime and soft brushes to clean the car's surface.

FUNCTIONALITIES OF AUTOMATIC CAR WASHERS

1.   **High-pressure water jets:** The high-pressure water jets are designed to remove dirt, grime, and other contaminants from the car's surface.

Literature Review on Design and Analysis of Floater

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ABSTRACT:

Floaters are structures designed to provide a stable platform for floating solar panels on bodies of water. They typically consist of a buoyant platform that is anchored to the bottom of the body of water and a support structure that holds the solar panels above the water's surface. The main advantage of using floaters for floating PV panels is that they can be installed in bodies of water that are not suitable for other types of solar installations, such as rooftops or land-based systems. The design of floaters must take into account several factors, including the strength of the anchoring system, the potential impact of waves and wind, and the effects of water currents and tides. Floaters also need to be able to withstand the corrosive effects of exposure to water and sunlight, and they must be designed to minimize the risk of environmental damage. Overall, floaters offer a promising solution for expanding the use of solar energy in areas where land-based installations are not feasible. As solar technology continues to improve and the demand for renewable energy grows, floaters are likely to become an increasingly important component of the energy landscape.

Keywords: Floaters, Solar Panels, Anchored, Floating PV panels.

1.INTRODUCTION:

A floating solar PV panel, also known as a floating solar array or floating photovoltaic (FPV) system, is a type of solar energy system where solar panels are mounted on a floating structure on a body of water, such as a lake, pond, or reservoir. The floating platform is anchored to the bottom of the water body and connected to the shore through a cable, where it can transmit the generated electricity to the grid or to a nearby facility. Floating solar PV panels have several advantages over traditional land-based solar systems. They make use of water surfaces that are often unused, providing an alternative location for solar installations in areas where land is scarce or expensive. Additionally, the natural cooling effect of the water can help to increase the efficiency of the solar panels, as they operate more efficiently at lower temperatures. Floating solar PV panels can also help to reduce water evaporation and algae growth, as they provide shading for the water surface. This can be particularly beneficial in arid regions where water resources are limited. Overall, floating solar PV panels offer a promising renewable energy solution for areas with limited land resources, and have the potential to significantly increase the global capacity of solar power. The floaters used for floating PV panels are typically made of high-density polyethylene (HDPE) or other materials such as fiberglass, steel or aluminum. HDPE is a durable, lightweight, and environmentally-friendly material that is resistant to ultraviolet (UV) rays, corrosion, and chemicals, making it an ideal choice for floating structures. The floaters can come in different shapes and sizes, depending on the specific design requirements of the project. Overall, the choice of floaters depends on a variety of factors, such as the size and weight of the PV panels, the water conditions, and the environmental regulations of the project site. The design and installation of the floaters are critical to ensuring the stability, durability, and safety of the floating PV system. Floating solar PV panels have several advantages over traditional land-based solar systems. They make use of water surfaces that are often unused, providing an alternative location for solar installations in areas where land is scarce or expensive. Additionally, the natural cooling effect of the water can help to increase the efficiency of the solar panels, as they operate more efficiently at lower temperatures. Floating solar PV panels can also help to reduce water evaporation and algae growth, as they provide shading for the water surface. This can be particularly beneficial in arid regions where water resources are limited. Overall, floating solar PV panels offer a promising renewable energy solution for areas with limited land resources, and have the potential to significantly increase the global capacity of solar power.

2.LITERATURE REVIEW:

Washington DC et al, studies conducted by the Solar Energy Research Institute of Singapore (SERIS) has the stature of a research institute at the level of the NUS states the Site identification, Energy yield analysis, Engineering design, Financial and legal consideration, Environmental and social consideration, Procurement and construction, Testing and commission, Operation and maintenance,

Solar-Powered Water Purification System

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ABSTRACT: A solar-powered water purification system is a technology that uses solar energy to purify water from various sources, such as rivers, lakes, or underground wells. This system works by using solar panels to collect and convert sunlight into electricity, which powers a water pump or a filtration system. The process of purification usually involves the removal of impurities and contaminants, such as bacteria, viruses, and minerals. This is achieved through different methods, including reverse osmosis, ultraviolet (UV) disinfection, and activated carbon filtration. The use of solar energy in water purification systems has several advantages. Firstly, it is a sustainable and renewable energy source that does not produce any harmful emissions or pollutants. Secondly, it reduces the dependence on traditional sources of energy, such as fossil fuels, which are becoming increasingly scarce and expensive. Finally, it can provide clean and safe drinking water to remote or off-grid communities that do not have access to electricity or clean water. One of the key advantages of a solar-powered water purification system is that it can operate in areas where there is no access to electricity. This makes it ideal for remote communities that rely on contaminated water sources. Additionally, the system is environmentally friendly and sustainable, as it relies on renewable energy sources and does not produce greenhouse gas emissions.
KEYWORDS: Water Filter, Reverse Osmosis (RO), Solar Panel, Battery, Motor, Membrane

INTRODUCTION

The decreasing availability of water has necessitated in the search for fresh sources of drinking water. There are many processes available for purification of drinking water like Chlorine tablets, Pot chlorination of wells, Slow and rapid sand filters, Fluoride removal, Reverse osmosis plants, etc. In this project, we are making a water purifier which works on solar energy. We are using solar energy which is a renewable source, abundant and cheap. The basic principle behind this project is reverse osmosis(RO). The use of solar energy in water purification systems has several advantages. Firstly, it is a sustainable and renewable energy source that does not produce any harmful emissions or pollutants. Secondly, it reduces the dependence on traditional sources of energy, such as fossil fuels, which are becoming increasingly scarce and expensive. Finally, it can provide clean and safe drinking water to remote or off-grid communities that do not have access to electricity or clean water.

METHODS AND MATERIALS

Materials:
• Solar panel(s)
• DC water pump
• Water filter (such as activated carbon, reverse osmosis, or UV filter)
• Water storage tank
• Plumbing materials (such as PVC pipes and fittings)
• Electrical wiring and connectors
• Batteries (optional, for energy storage)

Methodology:
1. Determine the water source and quality: Identify the water source that needs to be purified and assess its quality. Depending on the level of contamination and impurities, different types of water filters may be required.
2. Choose the appropriate solar panels: Select the appropriate solar panel(s) based on the required power output and water flow rate. The solar panel should be able to generate enough power to run the water pump and the filter.
3. Install the solar panels: Install the solar panels in a location where they receive maximum sunlight exposure. They can be mounted on a rooftop, ground-mounted, or integrated into a solar canopy. Connect the solar panels to the water pump using electrical wiring and connectors.

Automated Seat Belt Integrated Brake System

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ABSRACT

It has been observed that people who drive vehicles prefer places other than metropolitan cities. Wearing a seat belt is generally not compulsory in urban areas. Not only violates traffic rules, but also poses safety concerns for drivers and passengers. To overcome this and make seat belts mandatory, we are going to implement this system to keep drivers safe. In safety point of view, we have been developing project "Design and development of automatic seat belt integrated secure parking brake system" for automotive safety. The main objective of this project is to ensure the safety of drivers by modernizing the handbrake of the car. The handbrake is an additional braking mechanism fitted to all commercial vehicles and this completely separate from the pedals - In a car, the parking brake, also called a handbrake, emergency brake or brake, is a locking brake and generally used for stopping the vehicle. Most often used to prevent a vehicle from rolling when parked. Car handbrakes consist of a cable that connects directly to the brake mechanism on one side and to a lever at the driver's station. Using the handbrake to stop a moving car could damage the braking system. The project brief is to design and manufacture a safety parking brake for use in automotive safety brakes. The main benefit of this system is passenger/driver safety, if you are not wearing a seat belt, the vehicle's handbrake will not be removed for added safety. The system reduces the extra effort involved in operating the handbrake release process when the vehicle's brake system is activated. It performs the strictest operation with a safety braking system when starting and stopping the vehicle

KEYWORDS: Hand Break, Seat Belt, Pneumatic Compressor, Sensor

INTRODUCTION

The purpose of this project is to secure the driver with a handbrake system set on the safety car. The handbrake is an additional braking mechanism fitted to all commercial vehicles and operates completely independently of the pedals. In a car, the parking brake, also called a handbrake, emergency brake or brake, is a locking brake that is generally used to stop a vehicle. Most often used to prevent a vehicle from rolling when parked. Car handbrakes consist of a cable that connects directly to the brake mechanism on one side and to a lever at the driver's station. Using the handbrake to stop a moving car could damage the braking system. Seat belts are installed inside the car to ensure driver safety. The increase in the number of fatalities in accidents is due to drivers carelessly wearing their seat belts, despite strict enforcement of the law. The purpose of our article is to impose the wearing of seat belts while driving. We can do this using pneumatic tires and hand brakes. Changes to be made Ensure that drivers wear their seat belts while driving. Here, the car's seat belt activates the handbrake (parking brake) via a cylinder. The air compressor used to release the handbrake gets an outward stroke in the cylinder when the seat belt activates the push-button DC valve. Also, on the retract stroke of the piston, the handbrake engages

BLOCK DIAGRAM

Advance Parking System

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ABSTRACT

An Advance Parking System is an Automatic type of parking system where we can exclude the work of mortal. This system can lock the vehicle automatically by using detector and these advance system can also handle plutocrat deals without any mortal need. This system is more secure and enhances also being parking system. The design and working mechanics of advanced parking system is bandied in this report. This system eliminates the mortal hindrance and makes Parking of two wheels more secure. We hope this report will be useful to understand the basics of Advanced parking system.

Keywords: More secure, Advanced, No need of Human.

1. INTRODUCTION

The growing population of India has created numerous problems, one of the grueling bones being bike parking which we defy nearly every day. So don't you feel the need for further systematized parking system? This being the problem, my platoon wants to contribute to it. So we've come up with an idea that's advance Parking system. Principally, parking system first appeared in Europe as early as the 1900's ad in the North America in 1920's. The need for automated parking system was the same as it's now.

Maximize the value of available land by condensing parking. The 1950's saw the peak of the assiduity in North America with a number of high profile system erected, as the demand was growing in Japan, Korea and corridor of Europe. The technology has been around for a long time. Extensively used in other corridor of the country and world. But there's a excrescence in this system, it requires mortal resource. So our idea will help to exclude the mortal coffers, as this is a automated parking system and will make the parking system more systematized.

2. LITERATURE REVIEW AND OBJECTIVE

In Transportation operation system parking niche allotment is a measure issue. It takes 43 seconds to steal a bike with no security. Just 20 of bike that are stolen are recovered in UK the rate is indeed worst in India.

IOT use of microprocessor and high resolution camera for parking system. This system uses jeer processor. By using cameras we can identify empty spot for parking. If you have been in a London lately you have seen a long line of rent-a-cycle situated up and securely fastened to existent. Concerning theft also have part is start up. A start up in UK carpeted around 40k motor cycle from theft annually with total timber value of 3 million Euros.

Objective:

To produce a secure and amicable parking service to insure the safety of vehicle and to save the time of guests.

To produce a parking system that can operate automatically with minimal stoner hindrance.

To fulfill the request demand of secure automatic parking with charging installation for EVs.

3. MATERIALS AND METHODS

When it comes to material considerations for a bike rack, there are two areas to punctuate the material of the bike rack itself, and the material of the installation surface.

A. Bike rack material

Bike racks can be constructed from colorful accoutrements as long as the material covers a many important principles it's durable, water- resistant, and functional.

Popular construction accoutrements for bike racks

- Stainless steel
- Steel
- Recycled plastic
- Thermoplastic

Construction of bike racks can be completed with a finishing material. This enhances the overall appearance of the bike rack and helps it to endure harsh rainfall conditions. Exemplifications of homestretches include galvanized coating, makeup, greasepaint- coating, or Iron Armor, Frame Safe.

Refrigeration using LPG Cylinder

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ABSTRACT

In this project we have designed and analysed a refrigerator using LPG as refrigerant. As the pressure of LPG is high this stored in cylinder. As this pressurised LPG is passed through the capillary tube of small internal diameter, the pressure of LPG is decreased due to expansion and phase change of LPG occurs in an isenthalpic process. Due to phase change from liquid to gas latent heat of evaporation is gained by the liquid refrigerant and the temperature decreased. In this way LPG can produce refrigerating effect in the surrounding. From experimental investigations, we have found that the COP of a LPG Refrigerator is higher than a domestic refrigerator.

Key Words: LPG Refrigeration, Capillary tube, Evaporator, COP, Vapour Compression Refrigeration system, Refrigerating Effect.

INTRODUCTION

LPG (Liquefied Petroleum Gas) refrigeration is a cooling system that uses LPG (propane or butane) as the refrigerant. It operates on the vapor-compression cycle and is commonly used in remote or off-grid locations where electricity is scarce. LPG refrigeration has several advantages, such as energy efficiency, low maintenance costs, and low environmental impact. However, it also requires proper handling and storage of LPG gas, as well as regular maintenance to ensure safe and efficient operation.

PROPOSED METHODOLOGY

1. Design of the project
2. Research and analysis of components
3. Gauge inspection
4. Valve inspection
5. Analysis of safety precautions
6. Cost estimation
7. Implementation of the project
8. Finalization of the project with calculation and inspection

COMPONENTS

1. LPG Cylinder
2. Evaporator box
3. Refrigeration box
4. Temperature sensor
5. Burner
6. Capillary tube
7. Pressure gauge
8. Relief valve
9. Gas pipe

WORKING

The LPG Refrigerator uses evaporation of LPG to absorb heat. LPG is stored high pressure in cylinders and working Pressure at about 70 psi. We lowering this pressure to Atmospheric pressure so that the heat absorbed adiabatically From refrigeration box and cooling is obtained on Surrounding. LPG is stored in

Multi Function Security Device for Car

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Abstract

The multi-function security device for cars is an innovative and advanced system designed to provide robust security features to cars. It is a highly integrated system that incorporates various security features such as anti-theft alarms, GPS tracking, immobilizers, and remote-control access. The device is designed to monitor and secure the car from theft, vandalism, and unauthorized access. It can detect any suspicious activity and trigger alarms to alert the owner and relevant authorities. The GPS tracking feature enables the owner to locate the car remotely, which helps in recovering the car if stolen. The device also features a panic button, which can be used to alert the authorities in case of an emergency. The multi-function security device for cars is a highly reliable and efficient solution for car security, and it provides car owners with peace of mind knowing that their cars are well protected

Keywords: Gps Tracking, Anti Theft, Remote Control Access

INTRODUCTION

We are introducing the high-tech car security system in the lowest budget and compact for the car.The Multi-Function Security Device is a highly advanced and versatile security system that utilizes a combination of cutting-edge technology to provide comprehensive protection. With the integration of GPS module, RFID, Wi-Fi module, and ATMEGA328, this device offers a range of features such as real-time location tracking, identification and access control, wireless connectivity, and microcontroller-based automation. Whether used for personal or commercial purposes, this device is designed to deliver reliable and efficient security solutions in a compact and user-friendly package.

FUNCTIONALITIES OF Multi-Function Security Device For Car

1. Alarm System: The device has an alarm system that triggers when the car is being tampered with or when someone tries to break into the car. This alarm alerts the car owner and the people around, making it difficult for thieves to steal the car.

2. GPS Tracking: The device comes with GPS tracking technology that allows the car owner to track the location of their car in real-time. This feature is useful if the car is stolen or if the car owner forgets where they parked their car.

3. Remote Locking and Unlocking: The device allows the car owner to remotely lock and unlock the car doors, which adds an extra layer of security. This feature is useful if the car owner forgets to lock the car or if they want to allow someone to access the car remotely.

4. Immobilizer: The device has an immobilizer that prevents the car from being started without the right key or code. This feature makes it difficult for thieves to steal the car, even if they have managed to break into it.

COMPONENTS
1. Micro-controller
2. Rfid tags and receivers
3. Gps tracker
4. Latch
5. Wifi module

Design of Three Wheels Electric Scooters a Personal Mobility Vehicle

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ABSTRACT

In today's world, infrastructure of Airports, Industries, Recreational Parks, Sanctuaries, Palaces, and museum are becoming large so if one has to travel or visit from one place to another, he has to walk long distance and sometimes it becomes very hasty and inconvenient. Sometimes after too many traveling in industrial area causes strain and pain in body. so, to travel these distances two-wheeled or three wheeled electric scooter like Segway PT, Airway were introduced. But these scooters are very costly such as they start from ₹ 50,000. Another problem with those vehicles is that they are difficult to handle when we drive first time. So, in alternate to this product, we developed whole newly designed product and this is Reliable, Eco-friendly, Compact vehicle for mentioned places. Its utilities are college campus, Airports, Industries, Recreational Parks, Sanctuaries, Museums, Palaces, Villas etc. So, our research is on design and development of three-wheel personal mobility vehicle and also its multipurpose utility among the society.

Keywords: Personal Mobility, Front wheel drive, Three-wheel electric scooter, Campus mobility solution, Lithium-ion battery, Electric vehicle.

1.INTRODUCTION

Our proposed three wheels e-scooter as a personal mobility vehicle will plays a promising role in designing and creation So, our main Objectives to design a 3-wheel e-scooter is to development of an economical, compact and eco-friendly electric vehicle for the large infrastructure such as Airports, Industries, Recreational Parks, Sanctuaries, Museums, Palaces, Villas etc which are used to build in large area & when visitors or tourist visit those places, they have to cover a long distance 7 to 8 kilometres by walking, which consume more time & people start feeling tired of walking. Where walking consumes a lot of time. This personal mobility front wheel drive battery operated vehicle, specially design in Solid work 3D designing software for indoor and outdoor mobility in large campuses and long distances area can be cover in short period of time. It is front wheel drive with In-wheel hub motor mounted on front of the vehicle provided with disc brake at rear axle. 10inch 24v 350w front wheel hub motor which will have 100 Kg of endurance capacity of load while giving 20 to 30kmph of speed with 400 RPM of motor. 20ah 25v lithium-ion battery will be use to provide power to motor. A controller will be use to connect all electrical components like battery, motor, throttle. mild steel material will be uses for frame & platform purpose to make vehicle light weight & strength.

LIERATURE REIEW AND OBJECTIVE

[1] In this modelling and analysis of the two wheels electric vehicle were done using Solid-works software. In results it indicated that the Von-mises stress and total deformation were less and the fatigue life was more for the designed vehicle. So, it was concluded that, the proposed design of the lightweight two-wheeler electric vehicle offers sufficient strength and is safe for use. [2] In this project they have design and developed a two wheeled electric scooter. Where hub motor is use in rear wheel which make it rear wheel drive vehicle with providing drum brakes. they have work on various calculation such as vehicle performance, aerodynamic drag, gradient resistance. [3] In this paper an innovative concept for designing the electrical drive of automobiles is presented which allows optimizing the acoustic behaviour on a virtual basis. In special, the acoustics of an electric wheel hub motor is studied in detail. Therefore, a holistic simulation workflow has been developed which takes into account the electromagnetic field as the most important vibration excitation as well as the structural vibrations coupled with air volume around the to calculate the air pressure. [4] In this project, they have work on large size three wheel e-scooter for carriage purpose .this vehicle was integration of the electric scooters with the industrial load carriers into a single vehicle. so that the customer using it can get the privilege of using it for both the transportation purpose and also for load carrying and the proposed model is lighter in weight, requires less maintenance. They analysed frame structure & focused on fabrication

Design And Fabrication of Automated Lawn Mower

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ABSTRACT

This paper presents an automatic lawn mower which is a device or robot that help human to cut grass automatically. Due to rapid development, many conventional lawn mowers have turn into robotic mowers. But they are expensive and have certain demerits. Hence, we designed autonomous lawn mower that fulfills the requirement of a robotic mower, which is economically feasible and environmentally friendly. Sensors are used to provide feedback from outside world. Arduino UNO and Motor Drive Controller microcontrollers controls the entire system. Every action of the Lawn Mower is monitored by the microcontroller with the help of the sensor. Furthermore, Siemens NX as CAD software used to design the structure of the lawn mower. Also, this lawn mower will be self-guided without a need of human directional control due to ultrasonic sensor and the microcontroller that helps in the movement of the machine. The discharge type of this lawn mower is of bagging type. The overall conclusion of this paper is to select proper components with proper designing calculations and also analysis the structure by using Ansys as Engineering Simulation   software.

Key Words: Robotic Mowers, Arduino Uno, Bagging type, Rapid Development, Siemens NX

INTRODUCTION

Lawn mowers designed by Edwin Beard have been in existence since the early 1800s. Machines for grass cutting is popular amongst workers in agriculture, gardening, landscaping, horticulture, etc. Automatic lawn mower is a machine that cut grass automatically. It can be state as a machine or robot that helps people to do cutting grass work. The automatic lawn mower will do the cutting grass task with a preset setting by the user. Unlike other robotic lawn mowers on the market, this design requires no perimeter wires to maintain the robot within the lawn. Through an array of sensors, this robot will not only stay on the lawn, it will avoid and detect objects and humans . Lawn care and maintenance is a tedious thing to do for people who are always busy in daily life. Because it's not just about cutting the grass, it also includes services to receive the necessary nutrients to achieve its thickness, colour and overall health benefits. There are many things that are harmful to your lawn. for example, high temperature, draught, weeds, insects etc. Cutting grass cannot be easily accomplished by elderly, younger, or disabled people. Motor powered push lawn mowers and riding lawn mowers create noise pollution due to the loud engine, and local air pollution due to the combustion in the engine. Also, a motor powered engine requires periodic maintenance such as changing the engine oil. Even though electric lawn mowers are environmentally friendly, they too can be an inconvenience. Along with motor powered lawn mowers, electric lawn mowers are also hazardous and cannot be easily used by all.

Motivation of the Project:

The primary motivation for our project is to remove the chore of mowing your lawn. By creating a lawn mower that handles this task autonomously, t he user is freed from this physically demanding and time consuming task. O ur design helps those with physical limitations who could not otherwise mow their own lawn. Even without a physical limitation, the autonomous lawn mower provides the user with more free time. This freedom is provided in a worry-free platform in which little user

Ramp Pump

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ABSTRACT:

In order to start a hydraulic ram pump, the user must first manually prime the pump. This involves manually opening and closing the waste valve in order to begin the pumping cycle. As part of the ESW Philippines Ram Pump Project I lead the design and construction of a working lever prototype for 3" AIDFI ram pumps here at Northwestern. This summer I then traveled to the pump site in order to fully field test the mechanism. During field testing and observations, it became clear that the originally planned methods of collecting observations would have to be changed due to ram pump construction schedules, time constraints, and cultural respect. Detailed observations of AIDFI technician lever field testing was done at two scheduled primary tests. The field testing provided vital information regarding regular use and conditions of testing. The lever design itself also changed quite drastically during testing with the help of new information.

INTRODUCTION:

A ramp pump, also known as a hydraulic ram pump, is a type of water pump that uses the energy of flowing water to lift a smaller amount of water to a higher elevation without the need for external power or electricity. The pump works by using the kinetic energy of a large volume of water flowing at a low head and diverting a small portion of that water into a vertical delivery pipe, where it is lifted to a higher elevation through a series of valves and a check valve.The ramp pump is an effective and sustainable technology for water supply in rural areas, especially in locations where there is a continuous supply of flowing water. It is low-maintenance, cost-effective, and has no environmental impact. It is often used for irrigation, livestock watering, and household water supply.The ramp pump was invented by the Frenchman Joseph Michel Montgolfier in the late 18th century and has since been refined and improved by many inventors and engineers. Today, ramp pumps are widely used in developing countries and remote areas around the world, where access to electricity and conventional water pumps is limited.A ramp pump is a type of water pump that uses the energy from flowing water to pump a portion of that water to a higher elevation. The pump operates using a simple hydraulic principle known as the water hammer effect, which is caused by the sudden stoppage of a fluid in a pipe.The ramp pump consists of a long, sloping pipe, called the ramp, which is connected to a shorter, vertical pipe, called the delivery pipe. The ramp is placed at a slight angle, usually between 4 and 8 degrees, and water flows down the ramp due to gravity. As the water reaches the bottom of the ramp, it strikes a check valve that causes the water to abruptly stop, creating a pressure wave that travels up the ramp and into the delivery pipe

MATERIALS FOR RAMP PUMP:

The materials needed to build a ramp pump can vary depending on the design and specifications of the pump. However, here are some common materials that may be required:

PVC pipes: These are usually used as the main body of the pump.
Check valve: This is a one-way valve that allows water to flow in one direction only.
PVC glue: Used to connect the PVC pipes and fittings.
Rubber ball: This is used to create a seal between the PVC pipes and check valve.
Metal screen: This is used to filter out debris from the water before it enters the pump.
PVC fittings: These are used to connect different sections of PVC pipes.
Concrete or cement: This is used to create a base for the pump.
PVC primer: This is used to prepare the PVC pipes and fittings for gluing.
PVC cutter: This is used to cut the PVC pipes to the desired length.
Hose clamps: These are used to secure the hose to the pump and the water outlet.
Water hose: This is used to transfer water from the pump to the desired location.
Teflon tape: This is used to wrap around the threads of the PVC fittings to create a watertight seal.

Pollution Elimination Device

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ABSTRACT

Air pollution refers to the release of pollutants in the air, it is detrimental to human health as well as the planet also. According to WHO each year air pollution is responsible for nearly seven million deaths around the globe. Nine out ten human beings currently breathing air that exceeds the WHO's guidelines limit for pollutants. Air pollution in the form of methane and carbon dioxide raises earth's temperature which is resulting in extreme climate changes around the world. In this project we are making an attempt to eliminate exhaust pollutant gases completely. The high pressure exhaust gases will strike the turbine. The turbine is connected to a dynamo, which is used to generate power. Depending upon the airflow the turbine will start rotating, and then the dynamo will also start to rotate. A dynamo is a device that is used to convert kinetic energy into electrical energy. The generated power is stored in the battery. The pressure of exhaust gases will decrease after it hits the turbine. Then after that low pressure exhaust gases will go through exhaust pipe. At the outlet of exhaust pipe we will put carbon filters which will absorbs low pressure exhaust gases in it. The pollutant gases will be completely eliminated by this.

1. INTRODUCTION

Human Activities worldwide has been associated with large amounts of emissions of harmful species into the atmosphere. Today the air is severely polluted and this has a tremendous effect on the health and economic factors of the human population.
Industrialization and growth in vehicles has led to rapid deterioration of indoor and outdoor air quality.

In urban areas Transportation sector has the major contribution, producing 74% of all CO and lead emitted into the atmosphere. With the number of vehicles steadily increasing, the situation had gone even more worse. People now even look at the air quality of the locality before choosing new home. The emissions of CO_2, SO_2, NOx, Unburned HC, PM and N_2O has received great concern. The researchers in different part of the world are engaged in development of technologies for control of these species.

This project is aims to explore and put forward the vehicular emission control techniques, technology and allied environmental issues. A complete scenario of the emission control measures from Indian perspective has been included. Government norms, their implications and viewpoints have been presented. We hope that this work would serve as a reference for further work in this field.

LITERATURE REVIEW AND OBJECTIVE

TYPES OF POLLUTANTS EMITTED FROM A VEHICLE:

- Hydrocarbons: This class is made up of unburned or partially burned fuel, and is a major contributor to urban smog, as well as being toxic. They can cause liver damage and even cancer.
- Nitrogen oxides (NOx): These are generated when nitrogen in the air reacts with oxygen under the high temperature and pressure conditions inside the engine. NOx emissions contribute to both smog and acid rain.
- Carbon monoxide (CO): A product of incomplete combustion, carbon monoxide reduces the blood's ability to carry oxygen and is dangerous to people

Cost Optimization Possibilities in Elliptical Bicycle

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ABSTRACT

Health is a serious issue everywhere in the world. The sprinting lifestyle restricted everyone's time for exercise. There are numerous expensive machines and devices available to the various gym industries. These devices have ergonomics built into their design. However, the busy lifestyles of most individuals make it difficult to stay motivated to spend more time exercising. A key concern is also how affordable the costs are. ElliptiGO created the idea of a mobile bicycle, which combines the motions of running, cycling, and elliptical pedalling. The performance of athletes and fitness enthusiasts is undoubtedly improved. An elliptical bike encourages weight loss while enhancing physical health. Additionally, it offers a remedy for hip and knee problems. The distinctive mechanism of elliptical motion during pedalling is a major appeal for its use. ElliptiGO, however, is too expensive for the economically middle-income working class to afford. The goal of the present work is to create an elliptical bicycle, named Bi-Ellipta, that is lightweight, reasonably priced, and has the best performance possible. This bicycle's outside workout also enhances people's wellbeing. Compared to the currently available products on the market, the existing concept suggested a cost cut that was roughly ten times smaller. The estimated number of calories burned during the workout is also provided in this work.

Keywords: *Elliptical Bicycle, Frame, ride, economical, ergonomics.*

1 INTRODUCTION

Bi-ellipta is a type of elliptical bicycle. The Bi-ellipta bicycle modifies the elliptical trainer motion and combines it with the functionality of a bicycle to give a high-performance workout. It closely resembles running outside while removing the impact. The most convenient, enjoyable and efficient way to get out and stay active. A Bi-ellipta is very dissimilar from a standard bicycle. Unlike to regular bicycles, which frequently have a wide seat with a back support, the Bi-Ellipta has no seat at all. Regular bicycle riders must keep their legs parallel to the ground, whereas Bi-Ellipta riders must keep their legs perpendicular to the ground when standing and pedaling. Due to their elevated line of sight, cyclists using elliptical machines have unusually good visibility [1].

The Bi-Ellipta can be used by anyone who wants to get a great outdoor workout without risking their body. The people who will profit most from it are runners who wish to mimic jogging while protecting their knees and joints from the damage that running causes. Bi-Ellipta is ideal for the riders who want to enjoy riding without the hardship of stooping over or sitting on a conventional bike seat.

Bryan Pate, a former Ironman triathlete and co-founder of ElliptiGO, was driven to develop the first elliptical bicycle after suffering from injuries that prevented him from running for exercise. Pate, a seasoned biker, decided against riding a bike to stay in shape because he favored the elliptical trainer. Pate had a vision of creating a product that would allow him to enjoy both the outdoor "running experience" and the indoor "running experience" [2].

2 METHODOLOGY AND MATERIALS

A Bi-cycle frame should have low weight, high lateral stiffness and moderate vertical stiffness. Because of chain load, frame lateral deformation during pedaling is bigger when the rider pushes on right pedal (a pro rider may apply a force up to two times his weight).
The bicycle is made of mild steel and galvanized pipes with diameters of 24.5 mm and 32 mm. The most popular and economical variety of steel is mild steel. Steel is utilized in practically every steel-

Experimental Investigation of Radiator System Coolant Using Propylene Glycol

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ABSTRACT: This research paper presents an experimental investigation of the use of propylene glycol (PG) as a radiator coolant. The aim of the study was to investigate the performance of PG as a coolant. In this study, the heat transfer characteristics of water/propylene glycol was analyzed experimentally. Three different proportions were prepared by adding water and proplyne glycol in 1:2, 1:1 and 2:1. The experiments were conducted by measuring the different outlet temperature of the coolant. The outcomes showed that PG had a lower edge of boiling over than EG, however had a higher intensity move coefficient, demonstrating better intensity move execution.
Keywords: Propylene glycol, Proportions, Radiator.

1.INTRODUCTION

The use of engine coolant is essential for maintaining the temperature of an engine within a safe operating range. Radiator coolant helps dissipate the heat generated by the engine and prevents the engine from overheating. Traditional engine coolants are based on ethylene glycol, but there has been an increasing interest in using propylene glycol as an alternative coolant. This is due to propylene glycol's lower toxicity and higher biodegradability compared to ethylene glycol. The conventional heat transfer fluids for radiators such as water and ethylene glycol have poor heat transfer performance due to their low thermal conductivity. Numerous studies have been conducted to improve the heat transfer rate of the coolants.

Ordinary liquids have restricted heat move capacities. The nanofluids have drawn in much interest in heat move applications in ongoing past. A need to improvement new sorts of liquids with further developed heat move capacities is felt by various examination bunches across the globe to day. The thought behind advancement of nanofluids is to further develop the intensity move coefficient and to limit the size of intensity move supplies for protection of material and energy. It is notable that the significant boundaries which impact the intensity move attributes of nanofluids are their thermo physical properties like warm conductivity, thickness, explicit intensity and thickness. Regularly miniature estimated strong particles are suspended in the customary liquids to expand their warm conductivity of traditional intensity move liquids.

2. LITERATURE REVIEW AND OBJECTIVE

TYPES OF COOLANT USED IN AUTOMATIVE MACHINE: -

• Water is an exceptionally utilitarian liquid to be utilized as radiator coolant. Water is ordered as an ideal coolant in view of its capacity to proficiently retain and deliver heat. Aside from that, water is a fluid with low thickness where it can stream without any problem.

• Ethylene Glycol is broadly utilized as an car radiator fluid. It is boring and scentless in its unadulterated structure yet Ethylene Glycol is very perilous and any ingestion can bring about death. This is for the most part because of its high poisonous properties. Ethylene Glycol advertised as radiator fluid and it tends to be utilized during mid year as well as during cold climate in view of its higher edges of boiling over.

• Propylene Glycol is impressively less harmful radiator fluid contrasted with Ethylene Glycol. Propylene Glycol is used as radiator fluid where the Ethylene Glycol utilization would be unseemly. Any openness to intensity and air makes Propylene Glycol oxidize.

Hydraulic Drainage Cleaner

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ABSTRACT

An Innovative Solution for Clearing Clogged Drain Pipes. The project aims to design and develop a hydraulic device that utilizes low-pressure water to efficiently remove blockages from drain pipes. The device will be portable, easy to operate, and cost-effective. This report includes a detailed literature review, design and development of the hydraulic clog cutter, performance tests and results, and conclusion and future recommendations.

A mechanical clog cutter and hydraulic jetter can be combined by using the high-pressure water jet from the jetter to loosen the blockage, then using the clog cutter to break up and remove the debris. This combination allows for more efficient removal of tough clogs in pipes and drains.
The combined cutting and flushing action of the mechanical cutter and hydraulic jetter provides a more thorough cleaning of the pipes and drains, removing even the most stubborn clogs

INTRODUCTION

Introduction to Sewage problem in Mumbai.
Sewage pipe blockages are a common problem in Mumbai, India. With a growing population and increasing development, the city's sewage and drainage systems are under increasing strain. The overburdened pipes and aging infrastructure are often unable to cope with the volume of waste, leading to frequent clogs and backups.

The blockages can cause sewage to overflow into streets and homes, leading to health and environmental hazards. They can also cause damage to the pipes and other components of the system, resulting in costly repairs and downtime.

The Mumbai Municipal Corporation has taken various steps to address the problem of sewage pipe blockages, including the installation of new pipes, the upgrade of existing infrastructure, and the use of modern technologies. However, the problem continues to persist, and the city faces ongoing challenges in effectively managing its sewage and drainage systems.

Overall, sewage pipe blockages remain a significant challenge in Mumbai, and continued efforts are needed to address the problem and improve the city's sewage and drainage systems

METHODS AVAILABLE FOR UNCLOGGING SEWAGE PIPES

In the last 25 years, the best way to unclog sewage pipes has evolved to include a variety of techniques and tools, including:

▪ Hydro jetting: Using high-pressure water streams to blast away blockages and clean pipes.
▪ Mechanical rodding: Using flexible rods with augers or blades to physically remove blockages.
▪ Cable machines: Using spinning cable with cutting blades to remove blockages.
▪ Drain cameras: Inspecting pipes using cameras to locate blockages and assess the severity of the clog.
▪ Chemical drain cleaners: Using chemical solutions to dissolve blockages.
▪ Trenchless technologies: Using no-dig methods to repair or replace pipes without excavation.

FUNCTION OF HYDRAULIC DRAINAGE CLEANER

Automatic Fire Suppression System in Vehicle: A Proposed Model

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ABSTRACT

Today's customer has become more conscious about the safety while choosing their automobile. In order to stay relevant in the market it is essential for every company to work on safety of vehicles. One of the most important safety issues in the vehicle is abrupt fires in the engine. To overcome this issue, a model is proposed in the work that could be an efficient model to extinguish fires in the engine Bay or the bonnet. The model is more efficient in spreading the fire extinguishing material throughout the engine bay if the fire breaks out. It works on the principle of bursting of instantly pressurized ball.

Keywords : *Vehicle Safety, Fire Extinguisher , Fire Suppression, Infrared Sensors, Pneumatic Actuation, Automation, Microprocessor*

I. INTRODUCTION

Fire related accidents have been one of the biggest issue in the safety of vehicles. The automobile fires result in serious big garage fires, fires in tunnel and transportation. A report [1] says that 66 % highway transportation fires are resulted from the automobile fires. It is worth of noting that though the risk of fires cannot be eliminated but can be minimized. Since a car is a complex machine with mechanical and electrical components which consists of frictional components, flammable liquids and complex electric wiring, fire is one of the most probable event to occur. The combustible fluids and flammable materials are stored in close proximity to potential ignition sources. Research has been ongoing for decades to mitigate the risks and damages caused by fire on a vehicle. Zhang et al. [2] focused on the defects as the means of fire accidents in vehicle. They classified the defects causing fire in the vehicle as four categories like defects in (i) electrical system, (ii) fuel system, (iii) flammable liquid transportation system, and (iv) other defects. Shaoqi Cui et al. [3] stressed on the precaution against the fuel leakage since it is one of the major causes of fire hazards. They worked on hydrogen fuel and found that the leakage within the tunnel is a common cause of braeking of engine fire. Vladimir et al. [4] reported that motor vehicle safety against fire can be ensured by providing a bursting diaphragm on each high-pressure cylinder. However, the precaution is necessary, but it cannot not ensure 100 % safety. In case, if fire breaks out, it is important think over the safety of passengers as well as the minimal damage to vehicle. In this regard, many researches have been done and going on. Lou et al. [5] worked on the performance check of aqueous film-forming foam (AFFF) and protein foam (PF) materials in fire extinguishing in a diesel engine. They reported better flow ability and extinguishing effect of AFFF as compared to PF. They found that increasing gas-liquid ratio (up to 17% AFFF) increases the fire-extinguishing efficiency of foam. After this limit, the response time decreases. On a certain diesel engine, AFFF and PF took 45 and 50 seconds for extinguishing, respectively. Wang et al. [6] investigated the fire extinguishing effect of CAF (compressed air foam) and CNF 9compressed nitrogen foam) on n-heptane tank fire. The investigation revealed that CNF was more efficient in spreading along with increase in foam thickness than CAF. Wang et al. [7] did the research on the effect of water mist on the suppression of jet fire of diesel fuel. They observed that water mist might be a good fire extinguisher since it reduces the velocity of fire plumes and spreads on more area resulting in reducing intensity of fire. Gradual increase in fraction of water vapour suppresses the fire. Yan et al. [8] designed a pneumatic conveying device for the conveying fire extinguishing materials to the fire zone. They used the cement particles as fire extinguishing agent for the metal magnesium fires. Cement was used because of its tendency to reduce the combustion temperature of metal magnesium fire rapidly. Liu et al.[9] studied on the mechanism and effect of water mist on fire suppression. After the experimental and computer modelling, they reported that the effectiveness of water mist system can be improved by controlling over spray characteristics according to the fire scenario. They reported that the system works on the cooling of fuel and flame, attenuation of radiant heat. Adam et al. [10] reported a n automatic fire suppression system for the fire safety of building. They developed fire detection and fire suppression automated system. For fire detection, sensors were used find out the signal of fire

PetCare: Pet Animals Care Management and Health Website

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ABSTRACT

The primary objective of this project is to develop a comprehensive web application that centers around pet animals and the services related to them. The website will serve as a platform for pet adoption and donations, offering users the ability to search for pets and make look up directly to NGOs. The pet shelter feature will provide a safe haven for animals in need, and the directory of pet-related products and services will make it easier for pet owners to find what they need for their beloved pets. One of the key features of this website is its user-friendly interface, which allows users to log in and access various services with ease. The website's aim is to provide a seamless experience for pet owners and animal lovers, making it easy for them to adopt and donate pets, as well as consult with pet doctors. The website's content is also tailored to cater to the interests of those who are curious about pet animals, with a section dedicated to providing information about various species of pet animals. Moreover, the website will have a section dedicated to pet animal diseases, where users can connect directly with pet doctors and get expert advice on how to care for their pets. The inclusion of a food and toy category will allow users to purchase items directly from the website, eliminating the need to visit multiple websites. The application will be built using cutting-edge technologies such as HTML, CSS, JavaScript, Java, SQL, and JSP, ensuring a fast and secure user experience.

Keywords: Pet Animal Adoption-Donation, Website, Animal Shelter, Ngo, Doctor Consultation, User-Friendly

1. INTRODUCTION

There are numerous websites available on the internet that offer services related to pet animals. However, it is frustrating to have to switch between different websites just to fulfill all of one's pet-related needs. That is why we are creating a single platform that combines all the essential features in one place. Our website will offer a user-friendly interface that allows users to log in and easily adopt or donate pet animals. The Ngo section is another significant aspect of our website that provides a platform for users to help and support animal welfare organizations. By making a donation, users can help NGOs overcome their financial constraints and provide better facilities for pet animals in need.

Moreover, our website will also provide information on pet animal biographies, summaries, and diseases, making it easy for pet owners to learn more about their pets. The pet shelters feature will allow pet owners to keep their pets in a safe and secure environment for a specified period, providing peace of mind for pet owners who have to travel or be away from their pets for an extended period.

Additionally, website will offer direct consultation with pet doctors, making it easier for pet owners to seek professional help when their pets are in need. The website will also have a section dedicated to animal-related toys and food, ensuring that pet owners can find the right products and services for their pets. In conclusion, our website is designed to provide a comprehensive solution for all pet-related needs. With its user-friendly interface, Ngo section, pet shelter feature, doctor consultation, and pet-related products and services, it is the one-stop-shop for pet owners and animal lovers.

2. LITERATURE REVIEW AND OBJECTIVE

We came across the website that will also allow users to donate money to support animal shelters and rescue missions. It will offer a platform for those who want to help stray dogs but are unable to adopt them. The website's user-friendly interface and comprehensive information about the dogs will make it easy for users to find the perfect pet for them. The technology used in the website will ensure that it is secure and fast, allowing users to easily navigate and access the information they need[01].

By connecting potential pet owners with rescued dogs, this project make a positive impact in the lives of both the animals and their new families. The website provide a platform for people to find their furry friends, while also promoting responsible pet ownership and helping to reduce the number of stray dogs on the streets. This project is bring hope and happiness to both the dogs and the people who adopt them, creating a brighter future for everyone involved. this project is to make it easier for people to

Aahar: Homemade Food Delivery Application Using React Native, Expo and AWS Amplify

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ABSTRACT

The Aahar app is a homemade food delivery application designed to disrupt traditional food delivery services by offering a platform for housewives and homemakers to sell their home-cooked meals. Using React Native [1], Expo [2], and AWS Amplify [3], the Aahar app provides a user-friendly and efficient platform for individuals who prefer homemade meals over fast food or restaurant food. This paper outlines the design, development, and implementation of the Aahar app, including the technologies and methodologies used in its creation. The Aahar app offers a unique and innovative approach to food delivery services, providing a platform for home-based food entrepreneurs to showcase their culinary skills and earn an extra income while providing healthy and delicious meals to customers.

Keywords: Aahar, Homemade Food, Delivery App, React Native [1], AWS Amplify [3]

7. INTRODUCTION

In recent years, the food industry has witnessed a significant shift in consumer preferences towards healthier and more authentic food options. However, the existing food delivery services are largely tied to popular and profitable restaurants, limiting the availability of homemade food options. To address this issue, we introduce Aahar, a homemade food delivery application that connects individuals seeking homemade meals with those who offer them.

Aahar provides a unique and innovative platform for home-based food entrepreneurs to showcase their culinary skills and earn an extra income while offering customers a healthy and delicious meal option. The application has been designed using React Native [1], Expo, and AWS Amplify, and provides a user-friendly and efficient platform for individuals who prefer homemade meals over fast food or restaurant food.

Our system is designed to replace the outdated manual method and to overcome the challenges that come with it. The software has been created with the specific needs of the company in mind, ensuring smooth and effective operations. With error-free, secure, reliable, and fast management features, the platform offers customized solutions for organizations of all sizes.

The Aahar app also provides a solution for busy executives who are always on the move, with remote access features allowing them to manage their workforce from anywhere, at any time. Moreover, housewives and homemakers who wish to earn extra income can now sell their homemade food items on the platform. Aahar is set offering a unique solution that meets the evolving demands of the food industry.

8. LITERATURE REVIEW AND OBJECTIVE

While researching our topic we referred some IEEE Research Paper, which gave us insights to create and head our project direction, the papers we referred were:

2.1. Netfood: A Software System for Food Ordering and Delivery [4]

Netfood is a software system designed for food delivery companies that allows customers to order from multiple restaurants at once. It offers the ability to place orders individually or as a group and is accessible through a web interface. The system is delivery-oriented and provides a mobile application for delivery personnel. Administrators manage the data related to restaurants, food, and orders. During the development process, new functionalities emerged, such as the possibility to assemble daily menus from already uploaded foods, sending customers a message with the estimated delivery time, an iOS version for the mobile application, and Google Maps integration into the mobile application. The technology used includes STS for the server, Android Studio for the Android application, and Visual Studio Code for the web interface, with Maven used for build automation and dependency management.

Problem They Faced:

Automatic System for Solar Grass Cutting Using IoT

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ABSTRACT

Machines for cutting grass in the modern era are becoming very common. Older lawn mowers had IC engines, which were bad for the environment. Pollution levels grew as a result. Our solar grass cutter evenly cuts a lawn using a set of sliding blades. In every industry, there are technologies that are even more cutting edge. Future power usage is crucial. A solar grass cutter is a very practical tool with a very straightforward design. It is used to maintain and care for lawns in parks, gardens, schools, and other locations. To make applications easier to use and lower costs, we have made a few changes to the current machine. By doing this, we can accomplish our main goal of reducing pollution. Workers who lack training can finish their work quickly and keep the very neat and elegant appearance of the lawn. In this project, we used 8051 microcontrollers to direct the actions of a grass cutter. In order to identify obstacles, the grass cutter also has an ultrasonic sensor. Since a grass cutter is automatic, no specialized knowledge is needed to operate one. Our project's objective is to create a solar-powered lawnmower with reduced energy usage and labor requirements.

Keywords: sensor, battery, dc motor, grass trimmer, microcontroller, solar panel.

1.INTRODUCTION

An automated system for solar grass cutting is a robotic vehicle that can cut grass automatically, avoid obstacles, and do so without the help of a human. Solar energy is used to power it. Both the motor for the grass cutter and the motors that move the vehicle are powered by batteries in the system. Additionally, we use a solar panel to charge the battery, eliminating the need for external charging. The vehicle and grass cutter motors are connected to a microcontroller from the 8051 family, which manages the operation of each motor. To find objects, it connects to an ultrasonic sensor. In the absence of a barrier, the microcontroller advances the vehicle's motors. Obstructions are discovered by the ultrasonic sensor. It is monitored, and the microcontroller disables the grass cutter's motor to prevent any harm from occurring to the thing, person, or animal, as the situation demands.

Performance-wise, the solar-powered lawn mower outperforms conventional lawn mowers. It is also referred to as the demand for solar energy to power an electric motor that also rotates a blade used to cut the grass on the pasture. This solar lawn mower also has a battery. This solar-powered lawn mower uses a rechargeable battery as a result, which is cautiously supportive for the user. When using this solar lawn mower, users can cut the grass in the desired area by entering information through the keypad.

1.1 Problem Statement

The manual operation of earlier grass-cutting technology required the use of hand tools like scissors, which led to more time-consuming and labor-intensive processes.

This project aims to develop a solar-powered lawnmower that consumes less electricity and labour.

2. LITERATURE SURVEY

The widely used smartphone is used to operate the IOT-based solar cutter. In this device, a solar panel was used to create a battery. An 8051 microcontroller is in charge of all the motors. The DC motor can be used to generate an upward or downward motion when an ultrasonic sensor detects a problem. The simple design of this Smart Solar Grass Cutter maximizes the use of resources. The overall dimensions will depend on the size or dimensions of the solar panel.

Koushik Ahmed[1],Md. Rawshan Habib[2] PID controller based automatic solar power. Research on colour sensors, microcontrollers, DC motors, and the use of solar panels for grass cutting is presented in this paper, with a focus on design and solar energy implementation.

NAS and Media Server using Raspberry Pi

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ABSTRACT

We rely on the Internet so heavily that there is a growing market demand for more storage space. To manage all types of files, Network Attached Storage (NAS) offers a dedicated file server. It is a standalone storage device with a direct network connection. Modern information dissemination and preservation increasingly rely on network storage, which allows many users to share resources. Yet, customers have expressed concerns regarding the security of the network storage infrastructure. As a result, a variety of private cloud storage platforms appear, giving users access to a somewhat independent space for personal use. After extensive use, it has been discovered that the traditional private cloud storage platform can provide a certain level of security, but only in open public network locations. Multiple users are simultaneously experiencing instantaneous access protocol congestion, and big data feedback causes the issue of high interaction nodes to be delayed. The paper proposes a private cloud storage platform design and implementation method based on the NAS in light of the traditional architectural characteristics and issues that private cloud storage causes.

Keywords: OMV, NAS.

1. INTRODUCTION

Nowadays, high-resolution photos and high-definition video capture consume a lot of storage space in our PCs and mobile devices. We can use an external storage device to backup our data and free up space on our mobile devices by moving data to the external storage. The constraint would be to keep the external storage device with you at all times. As a result, if the external storage device is not present, the data cannot be accessed. In today's world, access to data and information is literally at your fingertips. Indirectly, data security is threatened by the hands of those who take advantage. Maintaining a computer network is an important step in preventing these criminals from breaking into our computers. Even the most basic features, such as file sharing, photo storage, messaging, and video playback, require an internet connection.

In this dynamic environment with ever-changing technologies, the security of our data is critical, as is the amount of storage we require to store the data and maintain control over our data. This project is primarily concerned with the aforementioned issues. Because third-party cloud services are accessible to other users, privacy concerns arise. We can access our data from an external hard drive using Open Media Vault from any device that has internet access, effectively treating our external hard drive as a cloud storage device.

1.1 Problem Statement

As technology continues to advance, the security of our information is now more important than ever, just as the amount of storage space and control we have over it are. The fact that other users can access third-party cloud services raises a security concern. Some cloud service companies also have some control over our data and only offer a small quantity of storage. To use these cloud services, we must spend a substantial sum of money. For users, bringing around pricey storage devices becomes challenging.

2. LITERATURE SURVEY

With so many new technologies being developed, cloud computing is one of the most popular ones right now. Many significant issues, including mobility, security and disaster recovery, scalability and flexibility, and cost management, have been resolved by cloud computing. Cloud storage is a choice for storing data online and allowing us to access it whenever we want when our device's storage is full. When data accumulates over time, preserving it becomes crucial because so many crucial things rely on it.

Fatma Salih[1], Mysoon S.A. Omer[2]. Raspberry Pi Video Server. Raspberry pi microcomputer can be used as a real-time video server. System uses a video stream of 800×400 at 24 frames per second.

Prevention Of Drowning Incidents In Swimming Pool On Automated Vision Based Surveillance System

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ABSTRACT

Swimming pools are everywhere, like in homes, restaurants, clubs. There will be a lifeguard at each pool and many swimmers at the swimming pool, but even then there are many drownings. The numbers are increasing daily. To protect people from drowning in the pool, we use machine learning and a net lifting system to prevent drowning incidents. The system will include a net to help the drowning person rise in the water, this movement of the net will be controlled by servo motors that are connected to the Arduino Uno board, and there will be a buzzer and LED indication to alert people near the pool and. Drowning is detected by machine learning using a camera that is trained to detect such situations, the camera is connected to a computer or laptop, this system is used to monitor the pool, watch the swimmers in it, if there is a person in it, the drowning state system detects it and sends a command to the Arduino Uno board to she raised the net. With the help of servomotors, the mesh rises together with the sinking one.

1. INTRODUCTION

Nowadays, video surveillance can be used as a monitoring and security tool. Surveillance of public and private places is increasingly becoming a very sensitive matter. Video surveillance systems are designed and installed in places like railways, airports and even hazardous environments. Image processing pattern recognition and machine learning-based methods are effective ways to intelligently monitor objects or events in real time. The use of intelligence in video surveillance systems enables real-time monitoring of places, people and their activities. The surveillance approach can change with different goals and can change with different goals and change from a single camera to a multi-camera configuration. Tracking must be robust to automatically detect drownings. This tracking information is very useful for understanding events later or as incriminating evidence, many researchers are studying the possibility of using these huge amounts of data and analyzing them in real time with the hope of preventing some of these extraordinary events or facilitating faster or more efficient .

The main contribution of this project is to develop a pool monitoring system so that swimmers can swim freely without fear of drowning. Have an automated model that will work by itself, without the presence of a lifeguard.

1.1 Problem Statement

According to the WHO (World Health Organization), drowning is the leading cause of unintentional death in the world, with approximately 372,000 drowning deaths reported annually. Swimming Pool Drowning Deaths and Children It's an unbelievable statistic: According to the CDC, drowning is the leading cause of unintentional death for children ages 1 to 4. To overcome this problem, an IoT monitoring model will help to avoid the maximum number of cases.

2. LITERATURE SURVEY

The system consists of a PC/laptop running Windows and Anaconda, an Arduino Uno board, servo motors, an alarm system and motor controllers. The proposed system is based on the circular Hough transform algorithm for locating and rescuing drowning swimmers. The results of the experiments indicate that the system has a unique ability to track and monitor swimmers, allowing it to mitigate and reduce the number of drowning deaths.

Lei Fei[1], Wang Xueli[2], Off-time Swimming Pool Surveillance Using Thermal Imaging System, proposed a background subtraction method for drowning detection and swimmer identification using visual tracking in their research. This method cannot accurately reflect the real background, which limits the model-accurate shape detection of moving objects.

A Systematic Augmented Reality based ATM model to Enhance   Security and Safety

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ABSTRACT

Augmented reality (AR) can be applied to automated teller machines (ATMs) to enhance the user experience and provide additional functionality. By using AR, users can interact with ATMs in new ways, such as through visual cues or gestures.One potential use of AR in ATMs is to provide step-by-step guidance to users. For example, AR could be used to overlay instructions on the ATM screen that show users how to insert their card, enter their PIN, and complete their transactions. In addition to making the ATM experience more user-friendly, AR can also provide users with additional information about their accounts.Another potential use of AR in ATMs is to provide users with additional information about their accounts. For example, AR could be used to overlay account balances or recent transaction history on the user's smartphone screen, allowing them to quickly and easily access this information without having to navigate through multiple menus on the ATM.In addition, AR could be used to enhance security at ATMs. For example, AR could be used to detect and highlight potential skimming devices or other fraudulent activity at the ATM, helping to prevent identity theft and other types of financial fraud.Overall, the use of AR in ATMs has the potential to provide a more intuitive and engaging user experience, as well as improve security and access to account information. However, further research and development is needed to fully realize the potential of this technology in the ATM industry.

Keywords - Augmented reality, automated teller machine, Mobile banking , mobile application.

1. INTRODUCTION

Preventing the spreading of diseases like COVID-19 is very critical to flattening the curve. Research shows that the COVID-19 virus can transmit through public objects similarly used by many people during the course of a day such as ATM keypads, Gas station keypads, and self-checkout at grocery stores. Sanitizing the keypad after every use is simply not feasible. So we need a technology that can help us operate the keypad without physically touching it. At the same time, we need to consider the cost of a new system or enhancement. Using Augmented Reality, we can impose a virtual keypad on a digital image in real-time.

Moreover, this technology is vital for healthcare workers who interface with medical equipment as well as those who rent ATMs, sales equipment, and learning devices. A variety of issues must be addressed as soon as possible with regards to the appearance, development, and acceptance of such technologies. A non-contact method of communication is possible with augmented reality technology, which bridges the gap between the physical and virtual worlds using sensory control sensors and communications. A number of intangible communication technologies have also been explored in the following areas: Non-touch technology provided with touch-based technology, low-resolution sensors used in touch-based medical imaging interactions, and interactions with devices that are not surgical like Kinect and Leap Motion.

1.1 Problem Statement

Researchers have discovered that the COVID-19 virus can be spread through common public objects including ATM keypads that must be kept open despite critical situations like lockdowns. Additionally, existing ATM cabins have cameras installed for security purposes, however with advances in hacking, these cameras might be abused, and ATM pins could be disclosed by screening fingerprints. Another challenge is the development of intuitive and user-friendly interfaces that make it easy for customers to interact with the ATM using AR technology. This requires careful consideration of factors such as the size and position of the AR overlays, as well as the design of the user interface. Overall, the development of an AR ATM system presents a number of exciting opportunities, but also significant technical and design challenges that must be carefully addressed in order to ensure a successful implementation.

Effective Approach Towards Hybrid Intrusion Detection for Cyber Attacks

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ABSTRACT

Network intrusion has become a biggest issue for the industry and government organization in the domain of the cyber-threat landscape. The current cybersecurity solutions are no longer excellent in tackling these cyber-attacks. Huge amount of data is being flown over the internet and providing security to these data is necessary for that an Intrusion Detection System (IDS) comes into the picture and helps in detecting security threats. Network intrusion detection system is very important in identifying network traffic as normal or anomaly. Correct identification of the threat depends on the accuracy and efficiency of the Network Intrusion Detection System (NIDS). In this paper we proposed two different methods Binary classification and Multiclass classification. For each classification we proposed five models namely Gaussian, KNN, Logistic Regression, Random Forest and Hybrid stacking model is combination of Random Forest and KNN.Our proposed stacking model effectively detects the nine types of threats such as Dos, Fuzzers, Exploit, Worm, Shellcode, Reconnaissance, Generic, Analysis and Backdoor. Stacking Machine Learning (ML) models are proposed for better accuracy of the NIDS.We applied these different types of models on the UNSW-NB15 packet-based dataset. Our proposed stacking hybrid model shows better accuracy (96.92%) than any other existing models. Testing accuracy of the stacking models is better than all individual models.

Keywords: NIDS, Machine Learning, UNSW-NB15, KNN, Random Forest

1.INTRODUCTION

People are now more connected to the network therefore use of internet is increasing day by day. people more dependent on the global internet to complete both personal and professional tasks.Considering all different types of attacks building a reliable Network Intrusion Detection System is a very difficult task. Network intrusion is nothing but unauthorized access to the network. Network intrusions often target to threaten the security of networks by stealing valuable data of the users and network resources. To detect and respond to various intrusions, we need to install NIDS at the perimeter of our network. NIDS is a software application that can monitor the network activity. ML approaches have been used in different ways for network intrusion detection. Among the all-best approaches application of hybrid and stacking Machine Learning models to improve the performance of the NIDS. We proposed two different methods namely Binary classification and Multiclass classification. We have implemented our stacking ML Model on the UNSW-NB 15 dataset with accuracy 96.92% which is better than the other models presented in recent papers.

1.1Problem Statement

Intrusion detection begins where the firewall ends. Preventing unauthorized entry is mandatory, but not always possible. It is important that the system is efficient and secure enough to detect the all types of attack. The task is to build hybrid stacking Machine Learning based Network Intrusion Detection capable of detection for different types of attacks on network. Hybrid approach is used for improve the performance of Network Intrusion Detection System (NIDS).

2.LITERATURE SURVEY

With the increasing use of WLAN technology, interest in the subject has also increased among researchers. A lot of research and studies have been done in this area. Researchers performed various methods on different datasets to detect WLAN attacks. When these studies are examined, it is seen that there are important results that have been obtained up to the present

[1] Singhrova [1] **described the architecture of Host-based Intrusion Detection System for DoS attack in distributed WLAN.** The presented system is an intelligent system that detects the intrusion

Real-Time Speech Emotion Recognition using Deep Learning

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ABSTRACT

The ability to recognize human emotions is vital in understanding a person's behavior and mental state. As of late, there has been an increasing interest in detecting emotions from voice data. However, identifying speech signals as expressing emotions can be difficult due to the variation and noise in audio waves. Additionally, the classification of emotions in deep learning requires a vast amount of data for effective training and classification. This study proposes a method for identifying human emotions from speech signals using real-time Internet of Things (IoT)-based deep learning. The research offers two key contributions to address this issue. Firstly, a real-time system using audio IoT was created to capture human voices and predict emotions using deep learning. Secondly, a model for advanced categorization was developed using augmentation techniques. An integrated deep-learning model using a 1D convolutional neural network was created and reported an accuracy of 95%, surpassing all state-of-the-art approaches.

Keywords: Emotions, IoT, Speech signals, Data Augmentation, Classification, Deep learning

1. INTRODUCTION

Speech recognition is a critical aspect of natural language processing that has been the subject of extensive research in recent years. With the advent of the Internet of Things (IoT) and the widespread use of smart devices, there is a growing demand for real-time speech recognition systems. In this paper, we propose a method for real-time speech recognition using the Raspberry Pi 4 Model B, a popular IoT device. Our proposed system utilizes the Mel Frequency Cepstral Coefficients (MFCC) along with root mean square (RMS) and zero-crossing rate (ZCR) features for audio feature extraction. Additionally, we apply four data augmentation techniques - data without augmentation, data with noise, pitching, and pitching with noise - to improve the performance of our model. Our model description includes a 1D convolutional neural network (CNN) with seven layers for accurate speech recognition. The proposed model achieved an accuracy of approximately 95%, which outperforms existing state-of-the-art approaches. This paper provides insights into the development of a real-time speech recognition system that can be deployed on the Raspberry Pi 4 Model B, making it suitable for IoT applications. The proposed methodology and techniques can be useful for developing other real-time speech recognition systems in various domains such as home automation, healthcare, and education.

1.1   Problem Statement

The first problem is the presence of noise in the audio data that affects the accuracy of the speech recognition system. Removing noise from the audio data is a challenging task that requires advanced signal processing techniques to ensure accurate speech recognition.

The second problem is the large amount of data required for efficient training and classification of the speech recognition system. Collecting and annotating a large dataset is time-consuming and requires significant resources. Moreover, training a deep learning model on a large dataset requires high computational resources, which is a limiting factor for many applications, particularly in real-time speech recognition. Therefore, there is a need for efficient data collection and processing techniques that can reduce the amount of data required for training and classification while maintaining high accuracy in speech recognition

Steel Defect Detection Using Data Science Techniques

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ABSTRACT

In recent years, due to the continuous development of deep learning, more and more researchers have devoted themselves to the research of target detection algorithm. Among them, the detection and recognition of small targets and complex is another issue that needs to be addressed. We understand the shortcomings of deep learning detection algorithms in detecting small and complex targets, and here we share the application of a new improved target detection algorithm in detecting steel surface flaws. A series of improvements have been made to the traditional Faster R-CNN algorithm, such as the reconstruction of the network structure of Faster R-CNN. Based on the small features of the object, we train the network with multi-scale fusion. For the complex features of objects, we replace some conventional convolutional networks with deformable convolutional networks.

Keywords: CNN(Convolution Neural Network), R-CNN (Recurrent-CNN)

1.INTRODUCTION

In the steel industry, quality control during production becomes very important. Steel quality control is carried out by detecting surface defects of steel. If steel defects are not properly detected, quality degradation can occur. Detecting steel defects at the right time helps to deal with the quality problems of the steel to be produced. The quality of the steel will directly determine the durability and life of the steel itself.

Today, automation is used to perform quality control. A flaw detection method can be performed by applying algorithms to it to help detect images from high frequency and high resolution cameras. Such detection requires a sophisticated learning algorithm that improves the quality of detection over time. Deep learning technology underpins the technology because it is able to learn from its computer. Deep learning has revolutionized various industries due to its excellence in computer vision.

Unlike its predecessor, machine learning, deep learning can work without instructions from its creators to produce fast and accurate predictions that could help ease the workload of engineers in the steel industry. A commonly used deep learning model for image recognition is a convolutional neural network (CNN). A CNN will help find defective objects in images of steel surfaces.

Therefore, this study will use CNN model deep learning to detect defects in steel.

1.1 Problem Statement

Identifying flaws in steel is a tedious and repetitive task for humans. There will be different types of defects (scratches, broken parts, welds, etc.) and sometimes it is difficult to categorize a defect into one of the defect types. Delivering defective steel to customers leads to dissatisfied customers. This detection method can effectively identify tiny target defects on the steel surface
and can provide a reference for automatic detection of steel defects.

Intelligent monitoring and diagnosis of steel defects play an important role in improving steel quality, production efficiency and related smart manufacturing.

2.LITERATURE SURVEY

The surface flaw detection process simplifies image analysis by dramatically reducing the amount of data processed while simultaneously storing useful geometric data about the object. There is certainly a huge choice in the application of point fault detection, but it seems that many applications share a common set of requirements, so their solutions can be applied to any problem area.

Liu Y[1], Hsu Y[2] Computer vision system for automatic steel surface detection. In flaw detection, it only takes 0.2839 seconds to detect an image (2048 x 512 pixels). For all experiments on the defective and normal images, the average and correct detection rates exceed 85%.

Z Zhang[1], Q Liu[2] An end-to-end biomedical image segmentation architecture combining the strengths of residual learning and U-Net. Skipping the connections within the remaining units and between the encoding and decoding paths of the network will facilitate the propagation of information in the computations both forward and backward.

An Open-source Portfolio Builder website using MERN stack

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ABSTRACT

Port4leo is an online no-code portfolio builder website, a platform which is designed to offer an intuitive interface that enables users to create a polished and personalized portfolio website without the knowledge of any coding skills. The main vision of this paper is to showcase the advantages of using a portfolio website over a traditional resume or LinkedIn profile. The advantages of a portfolio website over traditional resumes and LinkedIn profiles are clear. A portfolio website enables freshers to showcase their work in a more engaging and interactive way, making a stronger impression on potential employers. This paper outlines the design, development, and implementation of the portfolio builder website. With Port4leo, job seekers can build their personal brand, improve their visibility in the job market, and ultimately increase their chances of landing their dream job. The website can be used to highlight projects, previous work experience, and educational background. Port4Leo leverages the MERN stack and Material UI to provide a user-friendly interface that enables users to choose from a range of customizable templates, add personalized sections, and showcase their skills, experience, and projects. In addition, Port4leo offers a range of features that make it unique and valuable to job seekers, including social media integration, AIpowered resume parsing, interactive portfolio elements, and a recruiter dashboard. Port4leo is an innovative platform that offers a valuable solution for freshers seeking jobs. With its user-friendly interface, unique features, and proposed new features, Port4leo has the potential to become a go-to platform for anyone looking to create a professional online presence. The proposed features will further enhance the user experience and make Port4leo a unique and valuable platform for job seekers.

Keywords: Portfolio website, No-code, Freshers, Job seekers, MERN stack.

1. INTRODUCTION

In today's job market, standing out among the sea of applicants is a daunting task, particularly for freshers with limited work experience. The traditional methods of showcasing one's credentials, such as resumes and LinkedIn profiles, are no longer sufficient to grab the attention of potential employers. Instead, candidates need to build a professional online presence that highlights their skills, experience, and projects. This is where Port4leo comes in – a no-code online portfolio builder designed specifically for freshers seeking jobs.

The idea of creating a portfolio website as a means of showcasing one's work is not new. However, the process of building a portfolio website often requires coding skills, making it a daunting task for freshers with limited technical knowledge. Port4leo aims to address this issue by offering a user-friendly interface that enables users to create a professional portfolio website without any coding skills. Port4leo leverages the MERN stack and Material UI to provide a customizable and interactive platform that showcases a candidate's skills and experience in an engaging way.

The importance of creating a strong online presence for job seekers is highlighted by [1], who argue that "a strong digital presence is essential for today's job seekers." Similarly, [2] state that "a well-crafted online presence is critical for success in today's job market." Port4leo aims to provide job seekers with a solution to build a professional online presence that truly represents their skills and experience.

In this paper, we present the features and advantages of Port4leo as a unique and valuable platform for freshers seeking jobs. We also propose several new features that could be added to Port4leo to make it even more valuable to job seekers. The proposed features include video introduction options, share portfolio, templates, and an invite feature for project collaborators. Ultimately, the goal of Port4leo is to empower freshers to build a professional portfolio website that truly represents their skills and experience, making a strong first impression on potential employers and ultimately landing their dream job.

Digital Assistance for Elder People

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Abstract— **This project aims to develop a digital assistant for elderly people that can provide a range of services to help them with their daily tasks and activities. As the world population continues to age, the demand for elder care services is increasing rapidly. Elder care applications offer a promising solution to support the elderly population in various ways. This abstract will discuss an elder people care application that aims to address the challenges faced by the elderly and their caregivers. The elder people care application is a mobile application that provides a range of features to support the elderly and their caregivers. The application is designed to be user-friendly and accessible to both the elderly and their caregivers. The application offers features such as medication reminders, activity tracking, emergency alerts, and a communication platform to connect the elderly with their caregivers. The medication reminder feature allows the elderly to keep track of their medications and schedule reminders for taking them. The activity tracking feature allows the elderly to monitor their physical activities and track their progress towards their fitness goals. The emergency alert feature allows the elderly to quickly alert their caregivers in case of an emergency. The communication platform enables the elderly to connect with their caregivers and family members through video calls and instant messaging. This feature helps to combat loneliness and social isolation, which are common issues faced by the elderly. Overall, the elder people care application provides a comprehensive solution to support the elderly population and their caregivers. The application aims to enhance the quality of life of the elderly, promote independence, and reduce the burden on their caregivers.**

This project will help improve the quality of life for elderly people by providing them with an easy-to-use and convenient tool to help them with their daily tasks

Keywords :- Elderly, Medication adherence, Mobile app, pills , Digital Service Center, Digital Assistance, Care for elder people.

I. INTRODUCTION

As the global population ages, the demand for elder care services is increasing rapidly. In order to provide high-quality care to older adults, it is important to use technology to improve communication, coordination, and information sharing between care providers, family members, and the older adults themselves. A new elder people care application can help meet these needs by providing a platform for caregivers, family members, and older adults to connect and share information. The elder people care application can be designed to be user-friendly, simple, and accessible to older adults. The application can include features such as medication reminders, emergency alerts, and appointment scheduling to help seniors manage their health and stay connected with their caregivers. Caregivers can use the application to track the health status of the older adults, manage their care plans, and communicate with family members about any updates or changes in their health. The elder people care application can also include social features that help older adults stay connected with their friends and family members. For example, the application can allow older adults to share photos, videos, and messages with their loved ones, helping them feel less isolated and more connected to their community. In addition, the elder people care application can be designed to be customizable, allowing users to tailor the application to their specific needs and preferences. For example, older adults can choose which features they want to use, and caregivers can customize care plans to meet the unique needs of each older adult.

seniors, we understand the importance of staying connected with family and friends, especially as we age and face various health challenges. That's why we have developed a state-of-the-art elder care application designed specifically to meet your needs. Our app provides a convenient and accessible way for you to stay connected with your loved ones, manage your health, and get support whenever you need it.

Online Bidding Using Mern

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Abstract— This web application is an online auction platform that enables users to buy and sell items through an easy-to-use interface. The platform allows users to create and manage their own auctions, set starting bids and reserve prices, and monitor bids in real-time. The application also provides a secure payment system to ensure safe and reliable transactions between buyers and sellers. Users can search for items by category, keyword, or location, and can view detailed information and images of each item. The application offers a personalized user experience with features such as notifications and alerts for bidding activity, as well as a messaging system for communication between buyers and sellers. Overall, the online auction web application provides a convenient and secure platform for individuals and businesses to participate in online auctions and trade goods.

I.   INTRODUCTION

The internet has revolutionized the way people buy and sell products and services, and online auction websites have played a significant role in this revolution. Online auction websites offer a virtual marketplace where buyers and sellers can interact, exchange goods and services, and complete transactions without having to be physically present in the same location. Over the years, online auction websites have gained immense popularity, becoming a ubiquitous platform for e-commerce. They offer several benefits, such as convenience, accessibility, and a vast range of products to choose from. Buyers can access a wide range of products from the comfort of their homes, while sellers can reach a global audience with ease. However, online auction websites also face several challenges that need to be addressed. One of the biggest challenges is maintaining trust and transparency between buyers and sellers. In traditional auctions, buyers can physically inspect the product before bidding, which is not possible in online auctions. This makes it crucial for online auction websites to ensure that the products listed are genuine and of high quality. The lack of trust can discourage buyers from participating in the auction and can result in a negative experience for all parties involved. To overcome these challenges, online auction websites need to implement features that ensure trust and transparency. For instance, they can provide detailed product descriptions, clear photographs, and a review system that allows buyers to rate the sellers based on their experience. These features help build trust between buyers and sellers, making online auctions a more attractive option for e-commerce. In this paper, we present an in-depth analysis of an online auction website that addresses the challenges of trust and transparency. We discuss the design and implementation of the website, the features that make it unique, and the technologies used to create it. We also evaluate the website's performance, security, and scalability. Our analysis provides valuable insights for developers and designers of online auction websites, as well as potential users who are interested in using such websites for their e-commerce needs. Overall, online auction websites have transformed the way people buy and sell products and services. With the right features and tools, they can provide a trustworthy and transparent platform that benefits both buyers and sellers. This paper provides a detailed analysis of one such website and offers valuable insights for the development and design of online auction websites in the future.

II. LITERATURE REVIEW

ONLINE AUCTIONS: THEORETICAL AND EMPIRICAL INVESTIGATIONS" by YU ZHANG, et al. (2010)
This study examines the classical economics argues the principle of one price. In real world, we know it is often the exception than the rule. There exist a lot of mechanisms or institutions that might lead to

An Improved Method for Face Recognition with Incremental Approach in Illumination Invariant Conditions

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Abstract—In this paper we propose an enhanced method with an acceptable level of accuracy for face recognition with an incremental approach in invariant conditions like illumination, pose, expressions and occlusions. The proposed method hold the class-separation criterion for maximizing the input samples as well as the asymmetrical characteristics for training data distributions. This enhanced approach helps the learning model to get adjusted the weak features inline with enhanced or boosted feature classifier for online samples. This enhanced model also helps in calculating feature loses during the training process of offline samples. For representing the illumination invariant face features local binary pattern (LBP) are extracted from the input samples and IFLDA is used for representation and classification. This modified algorithm with incremental approach gives the acceptable results by detecting and recognizing the faces in extreme illuminations varying conditions.

Keywords- Face detection, Incremental online and offline learning; LBP,IFLDA, illumination invariant, etc.
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I. INTRODUCTION

During the past decade, the biometric security systems based on face recognition have attracted the research community due to its significant usage in different applications [1,2,4-5]. In general, the face problem for recognition is defined and be formulated like [,11] i.e. from a given set of stored databases, localizing and extracting the equivalent face images. There are various challenges in face recognition such as varying lighting conditions, pose, overfitting etc. We find that the problem of illumination is big challenge in face recognition especially for single image based recognition system. This problem can be addressed effectively by extracting illumination invariant features [4,5,8]. However, the conventional methods found be very difficult in extracting the multi-scale and multi-directional geometric features simultaneously and are very much essential for accurate face recognition and extracting the important intrinsic required face features. Intrinsic features extracted shows a significant variations captured due to uncontrolled environment surrounded by varying wide spectral changes. [4,5,8,10].

In a controlled environment, the face identification and recognition is very simple since in this case, the human faces of all the participants are acquired in a fully synchronized environment with uniform background and frontal pose only. But in maximum cases, in real time scenario we come across varying environmental conditions, poses, scaling, beards, makeup, turbans, colors, occlusions etc. affecting the accuracy of the face recognition. In all these challenges, for a face recognition algorithms the varying lighting conditions are considered as the most trivial challenge. It is very difficult task and found to be very impractical to recognize the faces

in an illumination invariant appearance conditions due to complex model of recovery and accurate recognition. Oftenly, we find the larger magnitude difference between the same face samples due to varying illumination. This leads the biometric recognition system towards the poor performance. But today there is need of real world application supporting systems which must be efficient in localizing and recognizing or matching algorithms with dynamic constraints [8]. The problem of face recognition associated with the challenging constraints have attracted researchers from the different discipline like psychology, computer vision, Data Science, Security, pattern recognition, neural networks, computer graphics, AI and Machine Learning [12]. The major challenge which affects the performance of the face recognition system includes the following factors:

- **Illumination**: The face images found to be varied due to the position of light source.
- **Pose**: The face images may found in varying poses due to the relative camera positions or face poses.

NEEDS OF PROFESSIONAL COMMUNICATION IN ENGINEERING

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ABSTRACT

Conventional engineering curriculum is strongly focused on the development in students for technical knowledge and skill. Recognition is one of the most important factor in which communicative skills plays an important role. The purpose of the paper to portray the Impact of English Communication on Rural Area Engineering Students and provide remedies to overcome the problems. Based primarily on the review of some relevant literature available the present article reveals the fact that professional communication is one of the most important parts in the communicative field all over the world and it has a basic tool which is English language.

Keywords: Engineering, Technical Knowledge, Communication Skills, Professional Communication

I) INTRODUCTION

Communication, a process of exchanging ideas and facts for common understanding, helps the participants to share their ideas, thoughts, experience and feelings with each other. It is one of the most important tries of the human being, without this, it is almost impossible for any human being to survive in this complex world. Communication uses a common language as the most important medium and it can be taught to create common understanding among the people. People according to their community, culture and the nature of their professions use different varieties of language as well as professional skills to get success in it.

In the arena of corporate world, especially in the field of engineering, English is used as a global language and it can be the only convenient language in the means of professional communication. The main aim of this paper is to highlight the importance of Professional Communication in engineering and needs of English for communicating to the people of the world. The paper broadly encompasses a wide range or sub headings such as definition of professional communication, communication in workplace and institutes' professional for execution of engineering jobs respectively.

II) LITERATURE REVIEW

The survey of other literature related to this research helped us to bring some related terms to complete the paper. On the review of some relevant literature available the present article reveals the fact that professional communication is one of the most important part any profession. In the communicative field all over the world, professional communication has a basic tool named as English language. Learning this language, helps you to lead yourself in the world and explore your views, ideas and thoughts internationally. The paper which were guided us to define the following points:

1) Developing an awareness of social justice and ethics, teamwork and conflict resolution are must for industry professionals.

2) Promoting these among the engineering students helps to build their recognition on the importance of Professional communication in engineering.

3) Language, Paralanguage and Body language are complement each other in professional communication in order to provide meaningful information (Zimmerman & Uecke, 2012).

4) The quality of life and survival data provided for those who use the technology.

III) What is Communication?

Any professional individual needs the art of good communication skills for enabling him or her to perform the job in a most effective and attractive manner. Professional Communication skills determines the employment opportunity and the sustenance of their job. In engineering jobs, this skill plays an important role and absence of quality communication skills can affect effectiveness of their performance as well as their job maintenance.

As the engineer have international job market, they need to prove that they are deserving candidate for grabbing those job opportunities. Just completing the academic syllabus and scoring marks are insufficient. Multilingual skills are considered as a salient element in the makeup of the new global engineer. Even the candidate who have secured distinct throughout the academic career in engineering may be unsuccessful in executing their job unless they process the high level of expertise in communication in English

IMPACT OF ENGLISH COMMUNICATION ON RURAL AREA ENGINEERING STUDENTS

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ABSTRACT
Coming from a upper class, well to do family, from a tier 1 town, studying in an top rated engineering *college, life looks like a cakewalk but it isn't the same for everyone. Here, using our research paper as a medium, we have tried to portray what obstacles students coming from other side of what we think is "good life" face when they first enter engineering colleges with a ray of hope in their eyes to bring their family out of poverty, to uplift their society! The biggest hurdle that they have to jump through is facing the English language. They need to understand its importance and include it in their lifestyle which is a tough job but once they make themselves comfortable then life will be good! English has its importance spread throughout life likewise it has its share due in engineering both in academics and in workplaces. One needs to understand and apply themselves to gather the knowledge that the beautiful language has to offer. Students coming from not well to do families, rural areas, underdeveloped cities are not comfortable speaking the language due to numerous reasons mainly less exposure, lack of practice but there are lot of ways one can face the language, one can increase their grip in speaking in English and this is what we have tried to explain through our paper.*

Keywords: English Communication, Obstacles, Rural Engineering Students, Comfort to Speak in English

1) INTRODUCTION

Basically, we study English language since schooling but one question that really comes in our thought is "Where does it come of? What is the use of this language? and What is its background?" It is studied that the English is originally a language of the people from England only spoken by some troops but in the present century, this language is become an International Language. It is also said that over 18% of the world population speaks English. Are they really sound and comfortable speaking in English? The answer is 'not everyone' but some really hesitate to speak or express their thoughts in English. The reason behind it is lack of basic knowledge of the language such as grammar, insufficient exposure to vocabulary, and lack of confidence.

English language has the highest importance in the professional fields. Similarly, in the engineering field, English is considered as one of the high profile language to show your personality. An engineer should have English fluency and accuracy with good communication skills to excel in his/her profession. These skills play very important roles in engineers' life to build their team and leadership. Hence, a various measures have been taken for improving this, there are various bridge courses has been declared by the government and various universities declared English as their main language, the pressure to improve English Language Education (ELE) has been steadily increasing.

There are some other measures have also been taken by the students for example, students communicate most probably in English no matter at first they may face grammatical errors but they keep learning. Schools and college teachers should only communicate in English language with students. Vernacular mediums should also give preferences to teach English and many more efforts should be taken place.

2) LITERATURE REVIEW: The survey of other literature related to this research helped us to bring some related terms to complete the paper. The paper which were referred has given many views and thoughts as given below:

1) Understood that this problem has not raised suddenly but it has been passed on from generation to generation.

2) This problem also depends on what level of society one comes from, the geographical location where a student is helped in a way for example, as people from south are relatively good English speakers compared to people from north in the same way people from north east have a good hand on the language compared to people from west.

3) Understood how this can be solved too.

3) IMPORTANCE OF ENGLISH LANGUAGE IN ENGINEERING

Engineering people think all about building big sculptures, huge monuments, crazy tech, humanlike robots all in all taking humankind to a better tomorrow. Talented engineers can make these things and make our world a better place to live. The challenge in this is how to amplify one's invention to the whole world. How the globe will notice what will make in a corner of my drawing room. It is a big question. The answer to this is a paper

NEEDS OF ETHICS IN ENGINEERING

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ABSTRACT
This paper emphasizes the "Needs of Ethics in Engineering" and educates engineering students the importance of it for building life-long relationships with stakeholders, suppliers and customers to achieve their goals in personal and professional life. The study also focuses on why people connect Ethics to Engineering and why Engineers should enhance Ethics. The study also highlights the corporate skills such as Personality Development, Communication Skill, Soft Skills, Leadership Skills and views on importance of Values and Ethics and its importance. The conclusion of the study is presented with explanation of Ethics and Benefits and its results.

Keywords: Ethics, Engineering, Life-long Relationships, Corporate Skills, Personality Development, Communication Skill, Soft Skills, Leadership Skills

I) INTRODUCTION

The main objective of this research article is to educate engineering students the "Needs of Ethics in Engineering". Earlier, it is believed that the engineers should have Techno-oriented knowledge and skills to develop their creativity and productivity. In the present years, the universe emphasizes that the engineers should have not only the technical sciences concepts but also the knowledge and experience in communication skills, soft skills, leadership skills and views on importance of Values and Ethics. This article studies the reason of these demands and presents its essences to engineering students.

Fig. 1: Value of Ethics

The study depicts the truth that these skills are important to the engineers because they help them communicate effectively to their stakeholders, suppliers and customers which leads them to build good and life-long relationships with them to achieve their goals in business and in social life. The study exclusively focuses on Ethics and why people connect Ethics to Engineering and why Engineers should enhance Ethics. By the end of this article, the engineers will be familiar with or get the better ideas about the Ethics and applying it in the field of Engineering to get benefits of the Ethics.

II) LITERATURE REVIEW

The literature survey of this research work guided a lot for knowing the value of ethics in social and professional life. It provided more knowledge about it as well as system of engineering in production as well as business. The survey has helped us to target the following points:

➢ Recognizing the context ethics with a sound knowledge of its usage

➢ The function of human communication and its importance in personal and professional are clearly understood

➢ Code of Ethical Conduct in Engineering is learnt

➢ Professional Communication and Ethics help to promote moral authority to society and to maintain Creativity and Conflict Resolution

➢ Improves engineers' attributes, presentation skills and life-long relationships

➢ Implementing ethics leads to gain the skill of assessing the engineering ethics and education reforms and learning achievement of goals

IMPACT OF SPEECH ANXIETY ON STUDENTS PUBLIC SPEAKING SKILLS

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ABSTRACT
Public Speaking Skills are important aspect of students in higher education. They have to present their works in the form of assessment and enhance verbally engaged experiential learning in small and large group settings. This research evidences that many students experience speech anxiety and also sought further insight into the six themes namely: fear of being judged, physical symptoms, uncertainty about the topic, negative effect on university experience, practice and preparation, and more needed practical support. The second objective was to determine whether their fear affected their experience in higher education or not. The results of this survey identify the differences between Trait-anxiety, State-anxiety, and Scrutiny fear in public speaking. It provides evidence of the overall negative effect on their higher education experience and suggests that the higher education institutions should admit the presence of speech anxiety among students and guide them by providing more support in oral presentation and assessments for overcoming the issue.

Keywords: Speech Anxiety, Public Speaking Skills, Experiential-learning, Overcome the Fear of Presentation and Assessment

A) INTRODUCTION
Students are very common among them but their performance level is different. Before they begin the practical tasks or activities, why do they feel that they won't be able to deliver a speech or presentation well! They start to feel what people think about me! They are interested in me or not, due to their speech anxiety, stage fear, lack of confidence and negative thoughts in mind. All these start to creep them from inside and leading them to low participants or failure or rejection.

The main purpose of this study is to identify the cause behind the impact of speech anxiety known as glossophobia on students' public speaking skills and to investigate finding a solution to it. "As soon as the fear approaches near, attack and destroy it"- Chanakya.

Fig.1: Speaker Thinks on People's View

B) OBJECTIVES
Simply learning what to say is not Effective Public Speaking but developing how to say with confidence so, the study aims to examine the following:

- Understanding the nature of Speech Anxiety (SP) and dealing with it to build your brand
- Analyse objectively the formation of students' habitual frame
- Understand the importance of personal preparation and routine practice in your topic
- Apply Cognitive Restructuring (CR) techniques to create a more positive frame to minimize your anxiety

APACHE ZOOKEEPER AN OPEN SOURCE SERVER

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ABSTRACT
The main purpose of this paper is to introduce apache application and give some information about it. For the readers who are not familiar with Apache Zookeeper, We hope that this paper will be a useful map for researchers who are going to explore further about Apache Zookeeper, an open server, although some parts of the map are very rough and other parts are empty, and waiting for the readers to fill in.

I.   INTRODUCTION

In the Hadoop ecosystem, Apache Zookeeper plays an important role in coordination amongst distributed resources. Apart from being an important component of Hadoop, it is also a very good concept to learn for a system design interview.

In very simple words, it is a central data store of key-value using which distributed systems can coordinate. Since it needs to be able to handle the load, Zookeeper itself runs on many machines.Zookeeper provides a simple set of primitives and it is very easy to program to.
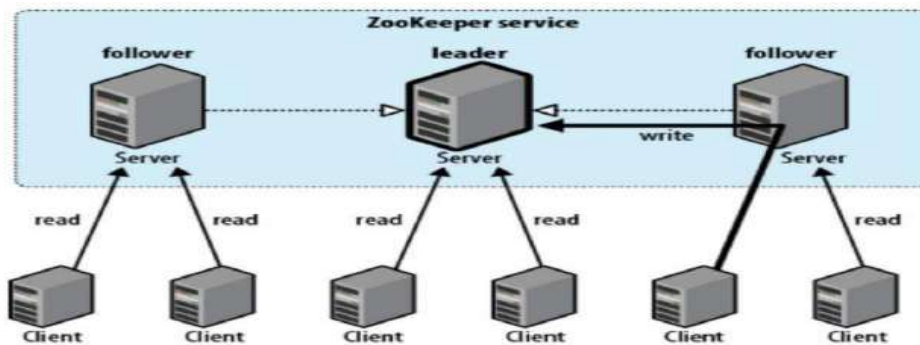
II.   Zookeeper Coordination

Say, there is an inbox from which we need to index emails. Indexing is a heavy process and might take a lot of time. So, you have multiple machines which are indexing the emails. Every email has an id. You can not delete any email. You can only read an email and mark it read or unread. Now how would you handle the coordination between multiple indexer processes so that every email is indexed? If indexers were running as multiple threads of a single process, it was easier by the way of using synchronization constructs of programming language.

But since there are multiple processes running on multiple machines which need to coordinate, we need central storage. This central storage should be safe from all concurrency-related problems. This central storage is exactly the role of Zookeeper.

III.   Zookeeper Architecture
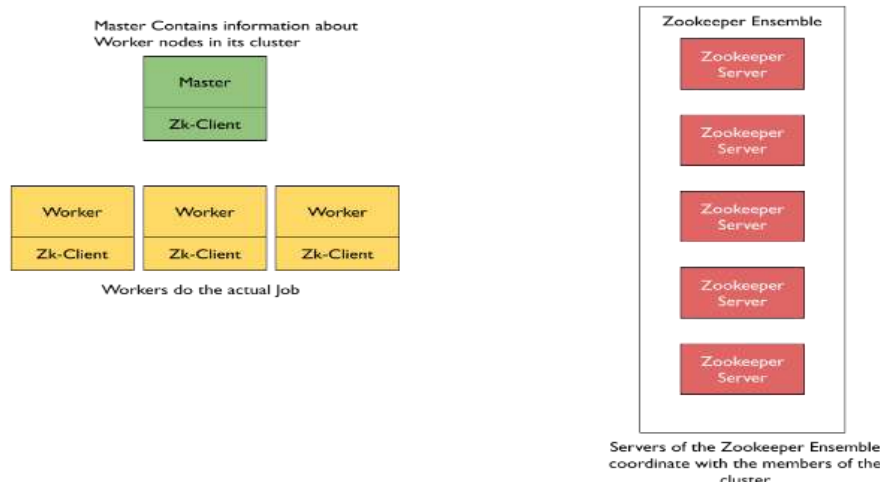
ODERISTA: ONLINE FOOD ORDERING WITH QR CODE

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ABSTRACT

The purpose of this project is to develop an online food ordering system. It is a system that enables customer of Food to place their order online at any anytime at any place.

The reason to develop the system is due to the issues of facing by Food Industry. These issues are such as peak hour-long queue issues, increase of take away than visitors ,speed major request of Food management , limited promotion, and quality control of food management.

Therefore this system enhances the speed and standardization of taking orders from the customers and display it to the staff in the kitchen accordingly.

Since the onset of the COVID-19 pandemic, restaurants and other small businesses worldwide have looking for ways to adopt contact-free strategies that cultivate a healthier and safer dining Experience.

Since the onset of the COVID-19 pandemic, restaurants and other small businesses worldwide have been looking for ways to Adopt contact free statergies that cultivate a healthier and safer dining experience QR codes that take customers to a personalized menu where they can peruse their options, order directly from their smartphone and pay, all from their phone. This kind of contact-free technology will completely alter how we view experience as a whole, not just during this global pandemic but also beyond it.

It's going to change the trajectory of how we approach restaurants and restaurant technology at its Core.

This kind of contact-free technology will completely alter how we view the restaurant experience as a whole, not just during this global pandemic but also beyond it.

It's going to change the trajectory of how we approach restaurants and restaurant technology at its very Core.

Keywords:

INTRODUCTION

Food ordering system means it an application which will help restaurants to optimized and control over their restaurants. And my project "Food ordering system" {Oderista} is also based on the same point.

Through this website user can do a lot of things from anywhere from home, from office, from train and many more places.

User can order his/her favourite food from desired restaurant and enjoy them with his/her loved ones. and through this website only the admin who has the contraption power of this website can look up to every activities of user and can guide or help them whenever a user is needed for help.

As you open the website Oderista animated page will load and it will have two options one i.e log-in and other i.e sign-up.

If a user is new to the website then he has to sign-up first then he will get a user id and password , through which he can then

Login into the website easily, and if he has that user id and password from previously so he can direct switch on to login area.

After login the user will be redirected to home page where he will get to see a navbar containing options like about section, menu section , cart section, contact section, logout section .

Scrolling down there he will get option to explore our website. Then if he want to book order for food then he will get option of verities of foods options user have to go down the website where the option will be available.

User can book his favourite foods and can cancel it also , after booking the page will redirect to add to cart he will get a message that his order has been placed after that it will lead to the payment option , where user has to pay the required amount through Cash on Delivery or Wallet.

WEATHER APPLICATION

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ABSTRACT

We aim to create a mobile application specifically for real-time weather checking status across the globe. Mobiles are handy and load with different features. Thus, Mobile application gain the popularity and its popularity is increasing day by day. We have use Flutter as our front-end and Android Studio to edit the code. The results show that even if the advances in mobile communication technologies could, in principle, improve the effectiveness of weather communication enormously, the expectations created around weather forecasts appear to be inconsistent with current forecasting capabilities, particularly with their inherent uncertainties in space and time, as well as in the nature of the predicted weather events.

Weather is the state of the atmosphere at a given place and time in regards to heat, cloudiness, dryness, sunshine, wind, and rain. Of all the geophysical phenomena weather is the most significant one that influences us. Weather can vary greatly and largely depends on climate, seasons and various other factors. The chief goal of this work is to get the weather forecast of any city throughout the world through an application. This paper aims at creating a web application using Flutter.

I. INTRODUCTION

In recent times, the advancement in the wireless technology and the growth in market potentials have led to an increase in the number of mobile device users. The emergence of this technology has given rise to rapid development of mobile e-commerce technologies. This brings on-the-go Internet access to the general online market world without geographical and time constraints.

Mobile application development is the process to making software for smartphones and digital assistants, most commonly for Android and iOS. The software can be preinstalled on the device, downloaded from a mobile app store or accessed through a mobile web browser. The programming and markup languages used for this kind of software development include Java, Swift, C# and HTML5. Mobile app development is rapidly growing.

From retail, telecommunications and ecommerce to insurance, healthcare and government, organizations across industries must meet user expectations for real-time, convenient ways to conduct transactions and access information. Today, mobile devices— and the mobile applications that unlock their value—are the most popular way for people and businesses to connect to the internet. To stay relevant, responsive and successful, organizations need to develop the mobile applications that their customers, partners and employee demand.

The app consists of a single screen, on which the user can enter the name of a city. The weather for the current day is displayed and a 3-day daily forecast. The app appearance also adapts for day-time and night-time weather conditions.

The motivation for doing this project was that A weather app can bring you the latest conditions, any breaking alerts, and forecasts for what to expect next. A weather app can bring you the latest conditions, any breaking alerts, and forecasts for what to expect next. There's a lot of competition among the best weather apps, which deliver extensive forecasts, radar images of weather patterns and lots of data to study. It allows users to see the conditions, forecast, temperature, and other related metrics of the device's current location, as well as a number of other cities. Locations can be added or removed by pressing the list icon in the bottom right corner of the application, which allows the user to type in the city's name, ZIP code or postal code or airport code.

For each city, the app will display the current, highest, and lowest temperatures, a 10-day forecast, time of sunrise and sunset, current wind direction and speed, rainfall measurements, current humidity, outdoor visibility range, and barometric pressure. In some locations, the app will also display an air quality report and show next-hour precipitation when raining or snowing.

In this project, we design and development mobile application for a Weather app. The application provides exact information for users, while offering a way of knowing their weather report. With this application, users can directly search any city, town and country name. We can enable users to search for nearby areas or their selective locations. They can also search the area that they want to read next, based on different areas and region. User will be provided with enough description of the weather report, there will also be a report search functionality. User might also be able to bookmark their favorite places. In nutshell this app will be a total blast for those who like to know the weather before heading off somewhere.

TRAFFIC SIGN RECOGNITION

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ABSTRACT

There are a few unique kinds of traffic signs like speed restricts, no access, traffic lights, turn left or right, youngsters crossing, no going of substantial vehicles, and so forth. Traffic signs order is the way toward recognizing which class a traffic sign has a place with. You more likely than not found out about oneself driving vehicles in which the traveler can completely rely upon the vehicle for voyaging. Yet, to accomplish level 5 self-sufficient, it is vital for vehicles to comprehend and adhere to all traffic rules. In the realm of Artificial Intelligence and progression in advanzcements, numerous specialists and huge organizations like Tesla, Uber, Google, Mercedes-Benz, Toyota, Ford, Audi, and so on are taking a shot at self-governing vehicles and self-driving vehicles. Along these lines, for accomplishing precision in this innovation, the vehicles ought to have the option to decipher traffic signs and settle on choices likewise. The exact acknowledgment rate and normal preparing time are particularly improved. This improvement is critical to diminish the mishap rate and upgrade the street traffic wellbeing circumstance, giving a solid specialized assurance to the consistent advancement of astute vehicle driving help. Many scientific methods of traffic signs recognition involving digital image analysis have been proposed. Most of them are appearance-based approaches, employing template matching. In most cases they work on color images (or videos) and deal with all types of signs, regarding their shape and color. On the other hand, commercial systems, installed in higher-class cars, detect only the round speed limit signs and overtaking restrictions found all across Europe. The main disadvantage of visual recognition of traffic signs is associated with difficult conditions of image acquisition and hence problems with noise, blurring, scale and orientation changes should be solved.

Keywords: Convolution Neural Network (CNN), Tensorflow, Traffic Sign Recognition, Machine Learning, Tkinter.

IV. INTRODUCTION

There are several different types of traffic signs like speed limits, no entry, traffic signals, turn left or right, children crossing, no passing of heavy vehicles, etc. Traffic signs classification is the process of identifying which class a traffic sign belongs to. Each individual, regardless of whether a traveler, driver, walker would have seen 8along the side of the road different sign board that fill significant needs. These significant street gear help us as course aides, admonitions and traffic controllers. As control gadgets for traffic, signs need complete consideration, regard and suitable driver's reaction.

With the approach of mechanized traffic and its expanding pressure on street, many have received pictorial signs and normalized their signs to encourage global travel, where language contrasts would make hindrances. In unfavorable rush hour gridlock conditions, the driver may not see traffic signs, which may cause mishaps. In such situations, programmed street sign recognition becomes effective.

Road and traffic signs considered in this thesis are those that use a visual/symbolic language about the road(s) ahead that can be interpreted by drivers. The terms are used interchangeably in this thesis, and elsewhere might also appear in combination, as "road traffic signs". They provide the driver with pieces of information that make driving safe and convenient. A type of sign that is NOT considered in this thesis is the direction sign, in which the upcoming directions for getting to named towns or on numbered routes are shown not symbolically but essentially by text.

Road and traffic signs must be properly installed in the necessary locations and an inventory of them is ideally needed to help ensure adequate updating and maintenance. Meetings with the highway authorities in both Scotland and Sweden revealed the absence of but a need for an inventory of traffic signs.

An automatic means of detecting and recognizing traffic signs can make a significant contribution to this goal by providing a fast method of detecting, classifying and logging signs. This method helps to develop the inventory accurately and consistently. Once this is done, the detection of disfigured or obscured signs becomes easier for human operator.

STUDENT ATTENDANCE SYSTEM USING FINGERPRINT

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ABSTRACT

A student attendance system using fingerprint is a hand-held device that aims to automate the attendance procedure of an educational institution using biometric techniques. This will save time spent on calling out roll no., and names and it gives a fool-proof method of attendance marking. This system operates on a rechargeable battery. This system can be passed to students during lecture time to mark their attendance in the class. The system communicates with the host computer with the help of a USB interface. The system is connected with a GUI application to manage the system and attendance tracking. The fingerprint scanning, retrieving data, and attendance checking management platform were established on the teacher's computer, and the attendance information was stored in the database whichever can be inquired about on the server. The test results show that the attendance system can manage the student's attendance conveniently, and the system is stable.

Keywords: Biometric techniques, GUI, Hand-held device, MySQL Database, Server

I. INTRODUCTION

The traditional attendance system in which the teacher calls out the name of each and every student and marks their attendance was causing a waste of time during the lecture hours. It takes around 10 - 15 minutes. This situation gets more time-consuming when there are more students in a class. Managing a large amount of data is also very difficult. Students may also mark fake or proxy attendance of absent students which is another disadvantage of the traditional system. In the last few decades, student enrollment in schools, colleges, and universities has increased and is continuously growing. In view of the above problems and the needs of college teachers for the attendance system, the system implemented a special attendance management system for college students based on fingerprint identification. The system completes fingerprint information storage, transmission, check-in information query, statistics, and other functions, which through fingerprint collection, comparison, identification, database establishment, data transmission, and the design of upper and lower computer interfaces.

II. LITERATURE SURVEY

[1] L. X. LI Jian-po, ZHU Xu-ning, and Z. Chi-ming, "Wireless fingerprint attendance management system based on Zigbee technology," in 2nd International Workshop on Intelligent Systems and Applications (ISA), May 2010, pp. 1 – 4. The author created a database in a remote system and the fingerprint data is transmitted to the host using Zigbee wireless technology. But if the classroom is not in the range of Zigbee, the device was unable to access.

[2] Z. C. A. Kassem, M. Hamad, and S. E. Dahdah, "An RFID attendance system for university applications," in 17th IEEE International Conference on Electronics, Circuits, and Systems (ICECS), 2010, pp. 851 – 854. The users have to carry RFID tags to mark attendance. The database was introduced on the computer and students have to carry the RFID tags to the reader. Because of this system, students can also mark proxy or fake attendance of absent students with RFID tags.

[3] L. Kamelia, E. A. D. Hamidi, W. Darmalaksana and A. Nugraha, "Real-Time Attendance System Based On Fingerprint and Global Positioning System(GPS) in the Smartphone," 2018 4th International Conference on Wireless and Telematics (ICWT), Nusa Dua, 2018, pp. 1-4. To prevent proxy attendance marking, the author implemented a real-time attendance system using GPS technology. If a student is located on the premises of a school or college, then only the attendance will be marked, or else it will reject the entry. One of the main issues of using GPS is to detect employees' locations; attendance can be done by sending MMS messages between users and the system is accurate to identify the real-time locations.

[4] S. B. Oo, N. H. M. Oo, S. Chainan, A. Thongniam, and W. Chongdarakal, "Cloud-based web application with NFC for employee attendance system, " 2018 International Conference on Digital Arts, Media and Technology (ICDAMT), Phayao, 2018, pp. 162-167. The author proposed Near Field Communication (NFC) technology which is integrated with the user's device rather than RFID tags. The issue with this technology is that they proposed their NFC time attendance system based on a web application that can be accessed at any time showing the arrival time, leave, and many other report fields

SOCIAL MEDIA WEB FILTERING

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ABSTRACT

With the continuous uprising of social media, users especially adolescents are spending significant amount of time on various social networking sites to connect with others, to share details, and to pursue common interests. OSNs gives minimum support to prevent undesirable messages on user walls. A main part of social network content is formed by short text, a notable example are the messages permanently written by OSN users on particular public or private areas, called in general walls. With the lack of classification or filtering tools, the user receives all messages posted by the users he follows. In most cases, the user receive a noisy stream of updates. More security mechanisms need to be developed for various communication technologies, especially social networks. Therefore, the main task of modern social networks (OSNs) is information filtering.

This web application is designed to be provided free of charge to its users. This allows you to control who has access to your information and who has access to your application's principle statements. Being personally involved in the online space is our main goal. Our site avoid undesirable messages from being written to the user's wall. System selects detailed items based on the correlation between the content of the items and the user preferences as opposed to a collaborative filtering system that chooses items based on the correlation between people with similar preferences.

Keywords: Online Social Network(OSN); Offensive words; Lexical Syntactic Feature(LSF); Bag of Words (BoW); ngram algorithms; data filtration; short text classification.

I. INTRODUCTION

With the continuous uprising of social media, users especially adolescents are spending significant amount of time on various social networking sites to connect with others, to share details, and to pursue common interests. OSN gives minimum support to prevent undesirable messages on user walls. A main part of social network content is formed by short text, a notable example are the messages permanently written by OSN users on particular public or private areas, called in general walls. With the lack of classification or filtering tools, the user receives all messages posted by the users he follows. In most cases, users will receive a noisy update stream. More security mechanisms need to be developed for various communication technologies, especially social networks. Therefore, the main task of online social networks (OSNs) today is information filtering.

This web application is designed to be provided free of charge to its users. Consistent with your app's statement of principles, you should provide control over who has access to information and who has access to it. Personal participation in the online space is the main goal. Our site avoid undesirable messages from being written to the user's wall. Unlike collaborative filtering systems, which select items based on correlations between people with similar preferences, this system selects items of information based on correlations between item content and user preferences. The system provides advanced image captcha that prevents spammers from registering on the site.

Provides automatic filtering for users via administrator to automatically control spam messages between users. We will implement a filtering rule (FR) in our system. A blacklist (BL) is also maintained in this system. A sophisticated filtering system includes multi-level text classification that automatically classifies posts into partial topic categories. There is a filter graph showing how many bad words each user used.

II. LITERATURE SURVEY

Ying Chen, Yilu Zhuo, "Detection of Aggressive Language in Social Media to Protect Youth Online Safety", International Conference on ASE/IEEE Social Computing, 2012 on the detection of aggressive language at the often flawed message level Existing research Unable to accurately identify objectionable content. On the other hand, user-level detection of abusive behavior appears to be a more realistic approach, but is an area that has not been studied much. To fill this gap, we propose a Lexical Syntax Function (LSF) architecture to detect offensive content on social media and identify potential aggressive users. Experimental results show that our LSF structure outperforms traditional secure content detection methods. Detecting offensive sentences achieves 98.24% accuracy and 94.34% recall, and detecting user abuse achieves 77.9% accuracy and 77.8% recall. Therefore, you can refer to the ngram method based on this article.

FRAUD MINER: CREDIT CARD FRAUD DETECTION USING FREQUENT ITEMSET

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ABSTRACT

Now-a-days, as we are going through pandemic condition, 90% of people prefer to do online transaction for any purpose .Such as online shopping, bank to bank transaction, etc. As credit card hold large share of these transaction. So, Most of time there is possibility of Fake or Fraud transaction using credit card , which can cause a large amount of financial lose to financial institutions as well as individual. The fraud people do not use same techniques for stealing money or conducting fraud each time. As new technology are getting introduced, frauds also switch to new patterns everytime . So most of the financial institutions and banks use credit fraud detection system to reduce losses. In credit card fraud detection, both supervised and unsupervised learning is used. But in this system, we are going to use unsupervised learning technique to understand the different fraud patterns. The aim of this system is to classify the normal transaction and fraud transaction and stop the fraud one. It uses auto-encoder and other deep learning algorithms to detect fraud transaction. The auto-encoder compress the available data and convert it into small representation and then algorithms such as random forest algorithm, logistic regression and many other algorithms on compressed data to carry on detection process.

We load the data in the data frame of pandas .Pandas is open source package of python .It also provides high performance to use the data structure and data analysis tools. We have also created app which is going to detect fraud and normal transactions .Django is used to make app for its interface and logic .This app has many more features like getting analysis of transactions and many more.

Keywords: Autoencoder, Django, Fraud Transaction, Normal Transaction, Pandas.

I.INTRODUCTION

Due to developing modernization, people also get switch to new technologies, which are more efficient , comfortable and make our life easy .In past, people use to do all business, money transactions, payments, buying and selling and shopping using cash. But now there is change .Every country has their own currency ,such as dollar ,pound etc. So people find it difficult to use cash. Nowa day and as now covid condition is there , people avoid to give and take cash. Due to this most of the people fuse to do online transaction using cards for online shopping account to account transfer, etc. In this online transaction ,25% of online transaction is done using Credit cards. Credit cards is mostly used credit payment instruments as they allow you to easily avail an instant line of short term credit while making transactions. This help us to Increase our purchasing power and also provide us benefits like ease of use, reward Points and cashbacks. So transactions using credit card are an rapid speed.

But as use of credit cards is increasing for money transaction, the credit cards frauds is also increasing day-by-day .There are many types of credit cards frauds . In this fraud person ,use your information and issue a credit cards on your name and use it and for that you have to pay. Another way is stealing others credit card details such as credit card number, expiration date and three digit security code and use it for online transaction. This act will increase your credit card bill even thought you have not spend single rupee. Some credit card fraud cause huge amount of loses to many financial institution , banks as well as individual. This also causes damage to the reputation of credit card companies.

According to a survey, credit card fraud raise by 44.7% over 2019 and 3,93,207 credit card fraud complaints were filled .So to avoid this , almost all financial institution, banks credit cards companies use advance credit cards companies use advance credit card fraud detection system such that they can classify between genuine transaction and fake transaction to avoid their own as well as customer losses. Credit card fraud detection system use first only supervised learning which was based on only assumptions. But now due to new advance technology fraud switch from one fraud techniques to another. So to tackle this problem , we use unsupervised learning in this credit card fraud detection system . The supervised learning technique help the found detection system to find anomalies. This credit card fraud detection system also use on auto- encoder. It is a main part of the system. Autoencoder is basically a technique which is used to compress vast data into small one.

Auto- encoder has two important component that is encoder and decoder . Encoder is used to compress large data into smaller representation, where as decoder is used for reverse process means converting the compressed the data into decoder original one. In this credit fraud detection system ,the auto-encoder compress the vast of

PROMOTING HEALTHCARE IN RURAL AREAS

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ABSTRACT

Today's healthcare environment encourages patients to take an active role in their health management. Young adults are seeking health information online and regard it as a reliable source of health advice. Due to this, health care institutions are making significant restructuring and coordination to meet the growing demand for access to quality care and cost savings. Urban areas have medicine and medical facilities that differ from rural areas in medical terms. Accessibility to health services is a major concern in rural areas since they are more difficult to reach. In the Covid-19 crisis, health care in rural areas is inefficient and feels useless. Web-enabled information technology can increase the accessibility and effectiveness of Health Services Integration in the event of a lack of heterogeneous resources. Blogs have become an excellent content medium for healthcare institutions to demonstrate their knowledge, and understanding, it also increases awareness of current issues which affect the general population. There are many advanced technologies for web building. One of them is the MERN stack which is a Javascript-based technology. It increases security, and scalability and improves the UI of the website. We came up with developing a healthcare website that provides various services like video calling, chat app, doctor's appointments, and blogs on MERN stack technology.

Keywords: Healthcare, Blogs, Rural areas, Awareness, MERN.

I. INTRODUCTION

The global Internet continues to grow exponentially, providing innovative ways to act, communicate, learn, connect and transform almost every aspect of our daily lives. Also, with the use of medical information on the Internet, the expansion of health information on the Internet is affecting the relationship between doctors and patients. With the rapid development of smartphones and mobile devices, it is becoming more and more common for people to access information in this flexible way. The Internet can change a user's information-seeking behavior and attitude. People are 2 looking for ways to get information about their health by searching online for information that will help them decide whether to see a doctor in the post-pandemic world. The public healthcare system in rural India has a great impact on rural society due to its cost-effectiveness and availability. We have developed a website that provides various medical services. It's easy to use and low in cost. It's built on the MERN stack which makes it secure and responsive. MERN (MongoDB, Express, React, and NodeJS) Stack is a collection of powerful and robust technologies, used to develop scalable master web applications comprising backend, front-end, and database components. JavaScript is used to build full-stack web applications faster and easier. MERN Stack is a technology that is a user-friendly full-stack JavaScript framework for building applications and is dynamic and secure.

II. LITERATURE SURVEY

In June 2021, [1] Jahnvi Gupta, Vinay Singh, and Ish Kumar, in this research, explained how chatbots may predict user's diseases. This research will utilize the RASA framework to create a chatbot. The chatbot, like any other person, can connect with others and acquire the user's symptoms. It will then determine the most likely disease and predict it, as well as the treatment options.

In July 2007, [2] D.S. Venkateswarlu, K.S. Verma and K.S.R.A. Murthy, this paper examined healthcare issues in India and potential solutions from the standpoint of information and communication technology (ICT). It starts with the needs of the rural population, the elderly, chronic patients, and accident victims, and then moves on to. Healthcare requires an integrated solution to convey voice, video, and other data.

In August 2010, [3] Zui Chih Lee, Jenniffer, Yurchisin, and Chih Te Lin, In this paper we evaluated how to make a website more attractive and trustworthy. The causes of consumers' willingness to purchase from apparel retail websites, such as website attractiveness, consumer website identification, and website trustworthiness, were investigated in this research study. Theories developed from social identity theory and earlier research on online customer behavior were tested using a structural equation model.

In September 2020, [4] Ajay Rana, Nitin Pandey, Vinod Kumar Shukla, and Lekha Athota, in this paper we evaluated how healthcare chatbot is important. Healthcare is critical to a healthy lifestyle. But, getting a doctor's appointment for every health issue is quite tough. The concept is to use Artificial Intelligence to construct a medical chatbot that can diagnose diseases and provide basic information about them before contacting a doctor. The use of a medical chatbot will help to minimize healthcare expenses and enhance access to medical knowledge.

ORGAN DONATION APPLICATION AND WEB SERVICE

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ABSTRACT
This Application acts as a vital role in saving the lives of individuals and that is additionally its main aim is to assist the user to urge the desired organs at the right time. And it's a mobile-based Application developed within the Android Studio. This Android Studio application provides a simple and quick thanks to look for organs. This app permits users to search out organs in an emergency. Users have to register with the application that is accessible on the app. And also, they'll get transient data on the donor's contact details including their location. The Objective of this Mobile Application is to style associate Android Studio Application to take care of necessary data of the Patients, Donors, and report details for any bio-related organization. Project Organ Donation App was developed in order that users will read the knowledge concerning registered Organ donors like Name, Address, and different such personal details in conjunction with their details of people and different Medical Details of the donor. This Mobile Application conjointly incorporates a login page wherever the user is needed to register and solely then they'll read the supply of organ, if he/she needs to the most aim of developing this Application is to scale back the time to an excellent extent to avoid outlay time in looking for the correct donor and therefore the convenience of organ needed.
This Android Application will store the details of the donor in firebase and allow patients to see the available donors. It also provides high performance of the health of donors.
Keywords: Android Studio, Donor, Firebase, Organ, Donation, Web application.

I.INTRODUCTION

The demand of the organ has increased year by year and this has caused a lot of problems because of the common sense that the organ cannot be harvested like plants. An organ should have been used by a human to get confirmation that the organ is good to use in another human. But human are confused that are they good donator to give organ and which organ can be donate. Humans are going lazy day by day and this makes them fail to understand what good deeds can be done if they work a little more. In the case of organ donation if humans find out how this organ donation works and what are the steps. They will be making a big change in people's minds and life.

It is said that on an average day, there are nearly 300 deaths every day Roughly 5 lakh people die annually in India due to lack of an organ donor but with less than one per million people opting to donate, the organ donation rate in the country is one of the lowest in the world, according to estimates in India the statistics are even worse as quite 8000 people suffer per annum without the right acquisition of a donor, why do these fallacies occur? These mistakes occur as a scarcity of proper connection between a willing donor and a needful patient, however this also hasn't stopped the illegal processes of organ transplants, where certain organizations kidnap people and perform organ trafficking, there has always been a requirement to place a check of control on of these issues. The Transplantation of human organ act (THO) was passed in India in 1994 to monitor and coordinate organ donation and transplantation activities, there are certain higher authority bodies that were commissioned thereunder , Appropriate Authority (AA): inspects and grants registration to hospitals for transplantation, Advisory Committee (AC) : consisting of experts within the domain who shall advise the acceptable authority , Medical board (Brain Death Committee): Panel of doctors responsible for brain death certification. The main idea of this proposition is to possess a mobile application that provides people the selection to be a donor when a hospital near them is in need of an organ, the application named as ' Organ Donation App' will be able to fetch the authorizations from the above-mentioned bodies, and connect the donors with the most needful patient of the hour. The application is about bent start as an Android based one, but eventually aimed toward reaching bent devices of all types , the appliance allows any normal civilian user to register, but only the authorized admin from the opposite end can validate the credentials and user information before they will tend to the necessity of a patient, in case of an organ donation, the hospital sends request for the particular blood type and waits for a potential donor to respond.

Looking at the people who need help humans on the other side of the wall want to help these people with the imagination of a new future taking part with more humans who want to come to the other side of the wall where people are healthy with no physical drawbacks. So when they are on this side of the wall they will help others as one did to them. People want to help others in need in the hope that they might be doing good even after they are dead. But in most cases people have a lack of knowledge of how it is done or where to go for such things and lots more.

CREDIT CARD SCAM DETECTION USING MACHINE LEARNING

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ABSTRACT

Credit cards are the most convenient means of payment in today's society, both online and offline. It contributes to cashless buying all across the world, every people are using ATM cards and credit cards, so fraud is also increasing. Fraud occurs only when making an online payment since the credit card information is sufficient to conduct the transaction, which will be on the credit card. Frauds tend to follow a pattern. It's tough to analyze each credit card transaction separately when there are billions of them. We have used a machine learning-based algorithm, predictive algorithms that can assist in the detection of fraudulent transactions. Due to confidentiality issues, the dataset of credit card transactions is sourced from European cardholders containing 284,807 transactions. We employed random forest algorithms to analyze and predict fraud events, and so determined the number of fraud transactions. The random forest algorithm's accuracy and amount of errors have been calculated. This work is implemented in Python using the Tkinter framework and streamlit done by the implemented machine learning model.

Keywords: Credit Cards, Machine learning, Predictive, Python, Random forest, Streamlit, Tkinter

1. INTRODUCTION

As credit card usage is rising all over the world such as in government offices, finance, and corporate industries, and many other organizations, fraud is also increasing. Mostly the online transaction takes place under bank operations through credit cards or debit cards. There are many different types of credit card fraud that occur when the credit card information of the individual is stolen and used to make unauthorized purchases and or withdrawals from the original holder's account and, account takeover, misplace card, account bankruptcy, device intrusion, application fraud, counterfeit card, telecommunication fraud. all banks and financial institute needs a system to detect scam transaction because the credit card is issued by the financial institute and people used credit card funds for any purpose if unknown people use a credit card then additional charges are added to the cardholder's account. it is important that credit card companies should be able to recognize which transaction is fraudulent and which is legitimate so that customers are not charged for items that they do not purchase.

In credit card fraud detection systems many data mining and machine learning algorithms are used to solve this fraud detection problem. In this project, we are exactly going to use a machine learning algorithm deployed to analyze all the authorized transactions and fraud with high accuracy. Using a Kaggle dataset of nearly 284,800 credit card transactions dataset is labeled then it comes under a supervised learning-based algorithm, supervised algorithms consist of a predetermined set of data that is provided for training the system and the system tries to predict the results based on the previous examples or training data. Also, using metrics such as Accuracy, precision, recall, and F1 scores. In addition, we will explore the use of data visualization techniques common in data science, such as correlation matrices and confusion matrices, to gain a better understanding of the underlying distribution of data in our data set. We implement a model using the Random forest algorithm, which is a supervised classification algorithm. It is used for both regressions as well as classification kinds of problems. For user convenience, we create a Graphical User Interface (GUI) to analyze and check the accuracy of the legitimate and fraudulent transactions of the given dataset and predict the transaction using Web App (Streamlit).

2. LITERATURE SURVEY

In a survey of many papers, all authors have focused on pre-processing and analyzing data sets as well as the deployment of multiple anomaly detection algorithms such as Local Outlier Factor, Isolation Forest algorithm, Random Forest algorithm, Adaboost algorithm, Support Vector Machine, Naive Bayes, K-Nearest Neighbor, and Logistic Regression. To detect frauds, they compared one of two algorithms for better accuracy. On the basis of better outcomes, they worked with that algorithm. In most of the papers participants using a Kaggle dataset that is depending on the numeric value of probability between 0 and 1, a transaction will be classified into one of the following categories: Non-Fraudulent, Doubtful, Suspicious, and Fraudulent on the PCA transformed Credit Card Transaction data.

In [5] they have researched two techniques for credit card fraud detection as random forest algorithm and the Adaboost algorithm. They have concluded that both give the same accuracy, but they consider the precision,

AI BASED VIRTUAL KEYBOARD

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ABSTRACT
A keyboard requires a great deal of resources and is restricted by its physical features. Additionally, discarded keyboards also inevitably contribute to environmental pollution. Consequently, the touch screen is designed replace the physical keyboard and thus reduces these flaws. However, the internal digital keyboard on the touch screen takes up a substantial amount of space, which causes some content to be covered. Moreover, the touch screen can be dirtied by fingerprints and become worn over time by human fingernails through frequent use. Hence, it is necessary to develop a new type of environment-friendly virtual keyboard with fewer flaws. The user's fingertip has remained on a key for a long time; the program will regard this key as an input. Typing without touching the keyboard is fulfilled to ignore obstructions covering the paper keyboard.

Keywords: Hand Motion; Vision; Webcam; Finger recognition; gesture based;

I. INTRODUCTION

In this day and age, the PCs have become a significant part of life and are utilized in different fields notwithstanding, the frameworks and strategies that used to collaborate with PCs are obsolete and have different issues, which will talk about somewhat later right now. Consequently, an extremely new field attempting to defeat these issues has developed to be specific Human Computer Interactions (HCI). Despite the fact that, PCs have made various progression in the two fields of Software Hardware, Still the essential manner by which Humans collaborate with PCs continues as before, utilizing fundamental pointing gadget (mouse) and Keyboard or propelled Voice Recognition System, or possibly Natural Language handling in truly propelled cases to make this correspondence progressively human and simple for us.

Our proposed venture is the Hand motions acknowledgment framework to supplant the essential pointing gadgets utilized in PC to portray hand motions. Last, the affirmation of hand movements is rehearsed by evaluating the closeness of the component data.The input devices giving the main picture information fuses standard camera, sound framework camera, and ToF (time of flight) camera. The sound framework camera and ToF camera likewise give the significance information so it is definitely not hard to parcel the hand region from the establishment to the extent the significance map.

A virtual keyboard is software that is used to emulate a standard keyboard. To control machines, we generally need a controller equipped with a number of keys. As we all know, a keyboard takes up a large amount of space. In order to improve portability, an alternative to the physical keyboard must be found. A touch screen virtual keyboard is the most popular solution for portable devices such as iPads and smart phones. A picture of a keyboard is displayed on a computer screen and the user points and clicks on the pictures of keys to enter text. But our project is based on AI we will use a camera which will detect your hand and by clicking on the keyboard on the screen you can easily type what you want. This will help to reduce the space required for keyboard and it will be easy to use

Virtual keyboards are commonly used as an on-screen input method in devices with no physical keyboard, where there is no room for one, such as a pocket computer, personal digital assistant (PDA), tablet computer or touch screen-equipped mobile phone. Text is commonly inputted either by tapping a virtual keyboard or finger-tracing. Virtual keyboards are also used as features of emulation software for systems that have fewer buttons than a computer keyboard would have.

AI is much more about the process and the capability for super powered thinking and data analysis than it is about any particular format or function. Although

AI brings up images of high-functioning. AI has become a catchall term for applications that perform complex tasks that once required human input such as communicating with customer's online or playing chess. The term is often used interchangeably with its subfields, which include machine learning and deep learning. There are differences, however. For example, machine learning is focused on building systems that learn or improve their performance based on the data they consume. It's important to note that although all machine learning is AI, not all AI is machine learning.

CANCER PREDICTION USING NAIVEBAYES

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ABSTRACT

Cancer is the greatest cause of death worldwide. By the time of the pandemic, an estimated 1,735,350 additional cancer cases had been diagnosed in just one country. In just one year, 609,640 people died as a result of the sickness. Cancer comes in a variety of forms, including: Cancers include skin melanoma, lung bronchus cancer, breast cancer, prostate cancer, colon cancer, and rectum cancer. Bladder, kidney, and renal pelvis cancers, to name a few. With the prevalence of so many different types of cancer on the rise, it's critical to be well-informed and knowledgeable about it. Cancer affects a significant number of people and has a large number of victims. It has progressed in the field of research.

Keywords: Bayes Theorem, Cancer, Data Mining, Naïve Bayes, Predictive.

1. INTRODUCTION

Cancer has been characterized as a heterogeneous disease consisting of many different subtypes. The early diagnosis and prognosis of a cancer type have become a necessity in cancer research, as it can facilitate the subsequent clinical management of patients. The importance of classifying cancer patients into high or low risk groups has led many research teams, from the biomedical and the bioinformatics field, to study the application of machine learning (ML) methods. Therefore, these techniques have been utilized as an aim to model the progression and treatment of cancerous conditions. In addition, the ability of ML tools to detect key features from complex datasets reveals their importance. A variety of these techniques, including Artificial Neural Networks (ANNs), Bayesian Networks (BNs), Support Vector Machines (SVMs) and Decision Trees (DTs) have been widely applied in cancer research for the

development of predictive models, resulting in effective and accurate decision making. Even though it is evident that the use of ML methods can improve our understanding of cancer progression, an appropriate level of validation is needed in order for these methods to be considered in the everyday clinical practice. In this work, we present a review of recent ML approaches employed in the modelling of cancer progression. The predictive models discussed here are based on various supervised ML techniques as well as on different input features and data samples. Given the growing trend on the application of ML methods in cancer research, we present here the most recent publications that employ these techniques as an aim to model cancer risk or patient outcomes.

2. LITERATURE SURVEY

[1] Rajshree Dash; "A hybridized K-means clustering approach for high dimensional dataset"; International Journal of Engineering, science, and technology; 2010; Volume 2 As a first phase for K-means clustering, the Principal Component Study (PCA) method will facilitate the analysis and presentation of multi-dimensional data sets. We've also developed a novel way for locating the initial centroids in order to improve the algorithm's effectiveness and efficiency.

[2]AdaandRajneet Kaur; "Using some data mining techniques to predict the survival year of lung cancer patient"; International Journal of computer science and mobile computing; 2013; Volume Due to the nature of cancer cells, where the majority of the cells are overlapped with each other, early diagnosis of lung cancer is a difficult challenge. This study explains how to use a feature extraction procedure and a neural network classifier to determine whether a patient's condition is normal or abnormal at an early stage. Following that, we use the retrieved features to forecast a patient's survival rate.

[3]ZakariaSulimanzubi; "Improves treatement programs of lung cancer using data mining techniques; Journal of software engineering and applications; 2014 Although lung cancer is a fatal disease, there is a good chance that the patient will be cured if the disease is detected early enough. At first glance, lung X-ray chest films appear to be the most reliable method for early detection of lung cancers. However, due to serious errors in some diagnosing cases that result in poor outcomes and death, computer aided diagnosis systems are required to assist medical personnel in achieving high capability and effectiveness.

[4] Charles Edeki; "Comparitive study of data mining and statistical learning techniques for prediction of cancer survivability"; Mediterranean journal of Social sciences; 2012; Volume 3These methods are employed in the domains of computational biology and bioinformatics. Computational biology and bioinformatics combine components of biology, computer science, mathematics, and other disciplines to tackle biological problems (Adams, Matheson & Pruim, 2008).

MENTAL HEALTH AWARENESS & POSITIVE LIFESTYLE APPLICATION

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ABSTRACT
Today technology has made medical health very accessible to people. Mental health applications are a convenient method to improve your mental well-being. These applications are not intended to diagnose a disorder or to replace professional mental health care. They, however, can help with your general mental wellness. Apps are a convenient way to obtain extra help in between therapy sessions or office visits, and they can also provide ongoing support once you've completed therapy. Apps for mental health can give daily tasks, encouragement, and other strategies. Many types are evidence-based interventions based on research and therapy practices. According to Statista, one of the most popular categories in smartphone applications is "health and lifestyle". According to a credible study published in 2018, mental health apps may aid in the monitoring and management of mental health conditions. As a result, our software would be useful in advising and assisting users with their overall health management as well as offering access to appropriate expert assistance. Our software has the potential to improve self-management, cognition, skills training, social support, and symptom tracking by offering mental health interventions. The user can self-assess their own mental wellbeing as well as access professional help through our software.

Keywords: Coping Skills, Emotions, Healthcare, Journaling, Mental Health, Mood Tracker, Productivity, Self-care.

1. INTRODUCTION
"Having a mental disorder isn't easy, and it's even tougher when others assume you can just get over it," according to a mental health care portal.

That is correct. It is the persistent stigma that prevents sufferers from seeking appropriate therapy for their mental health problems. However, by offering many mental health apps, today's technology is helping to de-stigmatize psychological illnesses.

These apps are simple to use for anyone dealing with mental health issues, and they are even thought to be beneficial in tracking the therapy process of people with various mental health diseases. According to the National Institute of Mental Health, technology-based mental health solutions can help with a number of psychological issues.

This is where these applications come in handy, whether it's for information, self-improvement, or access to mental health treatment. Many users also use apps to educate themselves with the terminology of mental health wellbeing, which helps them gain confidence in seeking out established therapy and counselling providers.

1.1 PROBLEM STATEMENT
With people's lives becoming increasingly stressful and hectic, a system that can alert them to their physical and mental health for their well-being is needed.

One of the most effective and favored methods of coping with mental health has been self-assessing and tracking emotional well-being. Our application would make it simple to attain this goal.

To be able to assist and guide users in managing their overall health and to provide them with appropriate expert assistance.

1.2 LITERATURE SURVEY
- Rozita Yati Masri, Hajar Mat Jani, Alicia Tang Yee Chong [1] presented a proposal regarding an Expert System Approach in Diagnosing Mental Health.

Because the intended Expert System (ES) will be utilized to serve the Malaysian public, a survey of the general public was conducted to gauge public perceptions of mental health and mental disorders in the country. Interviews and a survey for psychotherapists are now being used to look at the prevalence, severity, and treatments of stress-related, psychotic, and neurological disorders among Malaysian mental patients. The proposed ES will be utilized by psychotherapists to assist them in the same way that a true expert would.

- Ariel Teles; Ivan Rodrigues; Davi Viana; Francisco Silva; Luciano Coutinho; Markus Endler; Ricardo Rabêlo published a paper for the topic Mobile Mental Health: A Review of Applications for Depression

ANIMAL DETECTION USING DEEP LEARNING

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ABSTRACT

Efficient and reliable monitoring of wild animals in their natural habitat is essential. This project develops an algorithm to detect the animals in wildlife. Since there are large number of different animals manually identifying them can be a difficult task. This algorithm classifies animals based on their images so we can monitor them more efficiently. Animal detection and classification can help to prevent animal-vehicle accidents, trace animals and prevent theft. This can be achieved by applying effective deep learning algorithms.

Keywords: Animal Detection and Classification, Camera-trap images, Deep learning Algorithm, DSNN features, SVM, etc. weather, rains, etc. Also, the natural camouflage of animals poses

1. INTRODUCTION

Nowadays, huge data on wildlife activity and behavior can be obtained over larger space and time domain.Camera-trap methods and many other digital technologies can be used in wildlife monitoring and analysis due to relatively low cost and easy to-use. With the growth in data on wildlife, the study related to wildlife has become more convenient such as studying the effects of climate change on wildlife, alterations in habitat, impact of human intervention on animals and biodiversity over different seasons, areas and species. For monitoring wildlife, sensor cameras are placed on trees in a region creating a stationary camera-trap network. The camera traps are activated; each time motion is sensed, and a short video of animals activities are recorded with details about the surroundings (illumination levels, humidity, temperature, and location). Camera-trap networks are vital for acquisition of wildlife data without any disturbance. Moreover, camera trap networks are economically feasible, easy to deploy at larger space and have low maintenance cost; as a result, they are widely used for wildlife monitoring. We can easily obtain data about the visual aspects of animal from the camera-trap images ,that help to know the behavior and biometric features of species along with the relevant features related to wildlife habitat and surroundings. Recently, a huge set of camera-trap images have been acquired which challenges the capability of manual annotation and image processing. There is a dire need to design multiple tools for automated processing of these huge camera-trap images such as animal identification, segmentation, extraction, and tracking. In this work, we propose a method to detect wildlife animal using CNN based on camera-trap images. Object segmentation and detection from the background based on the motion of object are a necessary step for automated analysis from image sequences. Several studies are based on background and foreground modeling for object detection, however, challenges are involved with complex dynamic scene modeling. The image sequences captured by camera traps consist of natural and dynamic scenes that are challenging to analyze using existing techniques. The natural scenes are usually highly cluttered with swinging trees, waving water, shifting shadows, changing another difficulty for analyzing natural scenes. The prime challenge for wildlife detection is to design models that can handle complex backgrounds and efficiently detect animals from dynamic scenes. Conventional approaches based on motion are inefficient with dynamic scenes. Lately, techniques based on deep neural networks are employed for object detection such as Region-based Convolutional Neural Networks (RCNN), Fast- RCNN, and Faster-RCNN. Generally, the object detection can be divided into two steps: first; the detection of image regions using region proposal methods that may contain desired object and second; classification step that detects whether the regions contain the desired object or not. Object detection in terms of animal detection deals with problem of accuracy and speed due to the highly dynamic and highly cluttered image sequences obtained from camera traps. The available region proposal approaches create a huge amount of candidate regions. We observe that DCNN is computationally comprehensive and also requires performing region classification multiple times for all candidate regions. Hence, it is important to study the distinct characteristics of camera-trap image sequences in spatiotemporal domain to model an efficient region proposal approach that creates a small number of candidate regions. Hence, we used the camera-trap image sequences that are analyzed using Iterative Embedded Graph Cut (IEGC) technique to create a small group of Wild Animal Detection Using Deep Convolutional Neural Network.

1.1 Algorithm Overview

Reliable and robust wildlife detection from highly dynamic and cluttered image sequences of camera-trap network is a challenging task. Hence to gain high performance, images need to be analyzed at pixel or small region level. However, due to low contrast and cluttered images, it becomes difficult to identify whether a particular region or pixel based on local information represents animal or background. Hence, we need to

TWITTER SENTIMENT ANALYSIS USING MACHINE LEARNING

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ABSTRACT

The Sentiment analysis does the identifying and classifying sentiments of source text. Social media is a place with vast amount of sentiment rich data in different form such as tweets, status updates, blog posts etc. Sentiment analysis generated by user's data is very useful in knowing the opinion of the group of people. Twitter is one of the most widely used social media platform used by the people to express their thoughts and opinions. Its sentiment analysis is difficult compared to general sentiment analysis due to the presence of slang words and misspellings. The maximum characters limit that we can use in Twitter is 140. Knowledge base approach and Machine learning approach are the two strategies used to analyze sentiments in text data. In this paper, we try to analyze the twitter posts about a specific topic defined by the user using Machine Learning approach. By doing sentiment analysis in specific field, it is possible to identify the effect of field information in sentiment classification. We present a new feature for classifying the tweets as positive, negative and to get people's opinion about that topic.

Keywords: Sentiment analysis, Social media, Naive Bayes, Real Time Data Streaming, Data Cleaning, Model Evolution, Per-Processing, machine Learning. Abbreviation: GUI (Graphic User Interface)KNN (K-Nearest Neighbors Algorithm), UML (Unified Modeling Language), SVM (Support Vector Machine Language), TXT (Text), NLP (Natural Language Processing).

I. INTRODUCTION

This Sentiment analysis is the automated process which involves identifying and classifying subjective information in text data. This might be judgment, opinion or feeling about a particular topic or product feature. It is extremely useful in social media monitoring as it allows to gain an overview of the wider public opinion behind concerned topic. With increasing capabilities in technology domain, analysis is becoming a more utilize tool for business Like it can be used by an organization if they want to know the review of the product. It can also be used to know the results of the upcoming election. Many researchers have worked on it by using various machine learning and deep learning algorithms. In machine learning algorithms like naive bias, decision tree and SVM have given a great accuracy depending on data. Even random-forest and KNN is used for classification when data is not classified into 0 and 1 i.e. (true and false or positive and negative). Sentiment analysis is that the machine-controlled method of distinctive and extracting the subjective data that written language. This could be an opinion, a judgment, or a sense a few specific topics or subject The leading common variety of sentiment analysis is known as 'polarity detection' and consists in classifying a press release as 'positive', 'negative' or 'neutral'. For example, allow us to take this sentence: "I don't realize the app useful: it's extremely hard and crashing". A sentiment analysis model would mechanically tag this as Negative or an analysis model would may tag this as positive. A sub-field of tongue process, sentiment analysis has been obtaining attention of many in recent years because of its several exciting apps in a various fields, starting from business to political studies.

II. LITERATURE SURVEY

We present a sequential and brief description of the research works carried out on this domain till now. Since Supervised Machine Learning Techniques is used in Sentiment Analysis (Naive Bayes or other algorithms) is an evolving trend over the past two decades or more, and is a vividly rich topic to explore, hence we explained some researches related to this.

Till now, research works have been considered on the aspect of sentiment classification based on categorization study, with the help of positive and negative This research discusses about sentimental analysis of text for political affiliation using machine learning. In this study, the NLTK and the VADER analyzer were applied to conduct a sentiment analysis of Twitter data and to categorize tweets according to a multi-classification system .it is written by Shihab Elbagir and Jing Yang in 2019[1].

This another research of M. D. Sykora, T. W. Jackson, A. O'Brien, S. Elayan and A. V. Lunen is fined grained emotional reactions to significant events are discussed brevity of messages textual content commonly encountered on social media is often not grammatically proper not even constructed properly and contains large scale use of slang, short-hand syntax, incorrect spelling, repeated letters, repeated words, inconsistent punctuation, odd Unicode glyphs, emoticons and overall a high proportion of terms. Hence it has been

ATTENDANCE SYSTEM USING ANDROID

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ABSTRACT

Student pursuit is a crucial issue for observation student performance within the room and in their studies. It becomes a matter of concern as a result of the university official adheres to the rule that one student will solely visit the communicating if his or her group action is higher or adequate many p.c (60%, seventieth or eightieth etc.) otherwise. the normal group action arrange needs the scholar to sign a group action sheet on every occasion for every category. This takes uncalled-for time to spot and tag the student's name on the group action sheet. It conjointly happens that some students might accidentally or voluntarily mark a student's name as a representative. A backup copy of the travel document could also be lost. By employing a smartphone as associate automaton technology the topic teacher are ready to simply access our mobile app designed and save the quantity of attendees on the phone and server and may read percentages and may print as a tough copy. victimization the info, the system is ready to tag attendees, mark attendees, proportion attendees statistics, send emails, and send SMS to caregivers to stay them hip concerning their child's presence at the middle. The designed system has net access from anyplace and anytime which will dramatically facilitate a topic teacher keep track of his or her students' presence.

Keywords: Mobile Application, Student's Attendance, Smartphone, SQLite Database, MySQL Database

I. INTRODUCTION

Mobile attending system is that the system of tacking the attending of the coed on basis of presence at school. Winning industries, schools, universities begin by partaking students and ensuring that they're going to come back frequently that the attending rate become important. The attending is very important as a result of students ar a lot of doubtless to achieve teachers once they attend category systematically. It's troublesome for the lecturer to make students' skills and progress if an outsized variety of scholars ar ofttimes absent. owing to the advancement of technology nowadays has immersed itself towards education.

The presence of technology has reached its most of providing property technology towards quality education through delivery and effective learning and sensible devices became how of life particularly in education educational fields be ready to develop their system into sensible attending. The mobile computing and mobile primarily based application process ar being well-liked all told environments and it's not exceptional to educational establishment too. the {traditional|the standard} and traditional mode of attending management system (AMS) leads heap of paper work and it's arduous to take care of for an extended amount of your time.

Due to the character of manual work, it's arduous to perform the activities associated with the management of attending, once there's a necessity in taking reports of specific interest and there's an opportunity of committing error in recording the information and data on the records. The computerised automation of educational attending management system obtainable|is out there|is on the market|is obtainable|is accessible|is offered} within the kind of pc primarily based application and available in varied computing platforms. the varied topologies equipped, computer {based|based mostly|primarily {based|based mostly|primarily primarily based}} management applications ar running economical and effective manner in several establishments and ar being within the class of either net based applications or computer network based applications.

The first class of net primarily based management applications; the system at backend is in would like of live server readying of its info server. The second class of computer network primarily based management applications; the system at backend is enforced among the native network as native info server. This automation of management systems provides the organization or establishment to manage their academic/administrative activities in effective manner and is accessed by their all types of system users in conjunction with the support of 24/7. The system with quality within the kind of movableness provides abundant accessibility. The mobile application primarily based educational management system provides paper less activities, comparison with ancient and private laptop primarily based computations. during this projected, "design and development of mechanical man primarily based educational Management System" (AAMS), the properties supported computer code engineering like simple use, effective user interface, versatile in accessibility, and using MIS principles ar thought-about.

EMAIL SPAM PREDICTOR

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ABSTRACT
Spam emails are known as unrequested capitalized emails or deceptive emails transferred to a specific person or a company. Spams can be detected through natural language processing and machine knowledge methodologies. Machine knowledge styles are generally used in spam filtering. These styles are used to render spam classifying emails to either ham (valid dispatches) or spam (unwanted dispatches) with the use of Machine Learning classifiers. The proposed work showcases secerning features of the content of documents. There has been a lot of work that has been performed in the area of spam filtering which is limited to some disciplines. Exploration on spam dispatch discovery either focuses on natural language processing methodologies on single machine learning algorithms or one natural language processing fashion on multiple machine learning algorithms. In this Design, a modeling channel is developed to review the machine learning methodologies.

Keywords: Machine Learning, Spam, NPL, Web application.

I. INTRODUCTION
Of all the different medium communication, dispatch is extremely important medium now a days. It has been used extensively for formal online communication. It can be penetrated from any part of the world just with the help of internet connectivity. According to D Tschabitscher, number of active dispatch accounts was 5 billion in 2017 and is adding exponentially. He also stated that, everyday further than 270 billion Emails are changed, but the worst part of that is, out of that roughly 57 emails are of no use as they're spam emails. Spam emails are creating a serious problem to the stoner as spammers submerge the stoner's system with spam emails which results in storehouse problem, consumption of bandwidth and leads to drop in performance of system.

Spam emails are called as junk emails or unasked communication which is set by spammer through dispatch. To make the dispatch more secure and effective, applicable dispatch filtering is essential. Several types of inquiries have been done on dispatch filtering, some acquired good delicacy but the progress is demanded in this field. In order to avoid discovery, spammers came with a new approach for transferring spams to other druggies. It's included in the announcements as the part of an embedded image train attachment in the form of gif, jpg, png, etc. rather than body of the emails, hence by passing textbook- grounded spam filtering ways. As we know that there are numerous ways formerly there for dispatch spam discovery, our design aims for questing and assaying the effectiveness of the vital fashion used for spam dispatch discovery from images and PDFs using Multinomial Naive Bayes' algorithm.

II. LITERATURE SURVEY
- G. Mujtaba),L. Shuib,R.G. Raj,N. Majeed,M.A. Al-Garadi Proposed the introductory three way which are common in every bracket process. The first step is pre-processing in which the given textbook is converted into commemoratives and this step is also used for junking of stop words. The alternate step is learning process and, in this point, set is erected which is veritably important necessary for the bracket of emails. The last step is bracket of dispatch as ham or spam by using effective algorithm. Algorithms like support vector machine, logistic retrogression, retrogression trees and arbitrary timber are considered for bracket. They used the Phishing Corpus dataset and with the help of Bag of words as point birth approach classified the dispatch as ham or spam. In his study, they didn't mention the different tools for reduction styles for dispatch bracket.

- S. Ajaz,M.T. Nafis,V.Sharma They collected dispatch dataset from the online available websites and used Naïve Bayes for filtering of emails. He proposed a mongrel approach using secure hash system and Naive Bayes to sludge dispatch data but couldn't give information regarding the abuse of storehouse coffers and network bandwidth. By using Secure Hash Algorithm, the dispatch is considered as a communication M due to a generated function. The communication M is farther classified into S and L where L stands for ham dispatch or genuine dispatch and on the other hand S stands for spam dispatch.

- N.F. Rusland, N.Wahid, S.Kasim, H.Hafit Performed analysis on dispatch bracket on two different dataset by using Naïve Bayes algorithm grounded on the Accuracy, Precision, F- Measure and Recall. It predicts whether the given textbook is ham or spam. By using Spam data Dataset, the author achieved an delicacy of 91.13% and for the other Spam Base dataset, delicacy achieved was 88. By his analysis, the author concluded that the performance of NaïveBayes algorithm is better on Spam data dataset compared to Spam Base.

VIRTUAL ASSISTANT FOR THE VISUALLY-IMPAIRED

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ABSTRACT

The field of AI has progressed to colourful virtual sidekicks similar to Google Assistant, Microsoft Cortana, Siri, etc. Indeed, after such a development, veritably little has been done for the operation of this technology for visually disabled people as visually disabled people don't have perfect or indeed near-perfect vision. Relating people or identifying objects can be simple for common people but can be delicate for people who are incompletely or fully eyeless. In this design, we reviewed the current state of assistive technology using voice recognition with the help of AI technology and will be developing an AI- grounded voice-controlled desktop operation model on the Microsoft Windows platform, especially which would be veritably useful for visually bloodied persons to reduce their problems for using a computer and penetrating colourful features handed by the computer. This adjunct can be used for posting task operations, media playback, etc. This is veritably useful as the development in technology is harmonious and desktops or laptops are one of the main platforms for it. We generally make use of the keyboard for every command but using voice-grounded software the command input would be done fluently. This will be helpful not only for normal people but also for visually disabled people. This is why we need a voice adjunct that will take command and execute the instruction by giving affair as voice or any other means. We aim to profit visually disabled people and to help them pierce the computer using a voice adjunct. In addition, indeed normal people can also use the installations handed by the operation and use them as virtual assistants.

Keywords: Python Script, speech recognition, voice assistant. Abbreviation: API (Application program interface), NLP (Natural Language Processing), TTS (Text to speech), STT (Speech to text).

[I] INTRODUCTION

As we all know the use of virtual assistants is increasing day by day. There are various features in the desktops and mobile phones which can be used more conveniently and in a faster way by using a virtual assistant. An AI personal assistant maybe a piece of software that understands verbal or written commands and completes tasks assigned by the client. It is an example of weak AI that's it can only execute and perform quests designed by the user. In this project, we give voice commands as input using a microphone which is converted into electrical energy. The understanding of the audio signal would be done through Google API. The voice assistant acts like a companion which will help the user with their day-to-day tasks. This assistant will work with minimum effort and will give daily updates. This has inspired the project which will perform tasks from playing music, sending emails, etc. We would use python language with the help of pyttsx3 which is a text to speech conversion library in python and speech recognition APIs. The software would repeat the commands that will be useful for visually impaired people to know what command they have inserted. Browsing the command through the internet and displaying the results through audio as well as the output would be printed on the screen. The visually impaired person would be free from remembering complex braille keyboard commands or the hassle of typing, he/she can simply voice out his/her command and the software will execute it. The system also has the functionality of providing a summary of the content on the website and answering questions asked by the user concerning the summary using a BERT model trained on the Stanford Question Answer Dataset. The main purpose of this project is to help the users who are visually impaired to give them a voice assistant which would help them use laptops and desktops.

[II] LITERATURE SURVEY

[1] MallapaD.Gurav, Shruti S. Salimath, Shruti B. Hatti, Vijayalaxmi I.Byakod, ShivaleelaKanade "A Reading aid for the Blind People using OCR and OpenCV"

Optical character recognition (OCR) is used to sight written or typed characters victimization photoelectric devices and laptop software. It converts footage of typed or written communication into machine-encoded text from scanned documents. throughout this analysis, these written communication square measures regenerate into audio output. OCR is employed in machine techniques like psychological feature computing, text to speech, key info and text mining. it's primarily used inside the sector of research in Character recognition, AI and pc vision. For pattern recognition and to perform Document Image Analysis (DIA) we tend to use data in a grid format in virtual digital library's vogue and construction. They promote Python programming as the main programming language in their system.

THREE LEVEL AUTHENTICATION SYSTEMS

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ABSTRACT

Despite many efforts taken nowadays still security threats can be seen everywhere. And from the start, we are using just single-level password authentication factors, which is not sufficient to give more security. To be more secure we can think of a Three-Level Password Authentication System. So this is an idea to implement three levels of password authentication for true users. In short, we can say, this is to implement three levels of security. The First level password constitutes of simple text-based password and double encrypted with a custom caesar cipher and AES algorithm this effort is taken to resist shoulder surfing attacks through the text password. In the Color Combination password, where users can set different combinations of colors using hex color codes according to their choice just by clicking on those colors forms the second level of authentication. The third level uses a Random File as a Password there at first user has to select a file to use as a password. These three levels are used as a key for custom substitution cipher algorithms.

Keywords: Authentication, Text Based Password, MySQL, JavaFx, Hex Color Code, JDBC, Eclipse, AES algorithm, Caesar cipher.

I. INTRODUCTION

As the ever-changing digital world provides us with a lot of perks and ease in everyday work, there are also security issues and challenges that arise daily, and one of these issues is authentication. Authentication is a very important part of any digital or software application, for a basic level of authentication we use text-based passwords but with time even they became vulnerable, so to increase the security two-factor authentication was introduced. In two-level authentication the second level of security is used as a biometric, captcha, etc which increases the complexity for hackers and makes the system more secure, thus to further increase the security we have used Three Level Authentication. This project gives more security to the user and validates users for accessing the system only when they have input the correct password. The project involves three levels of user authentication. This project contains three logins which include three different kinds of password systems. The password difficulty increases as the authentication level increases. Users have to enter or input the correct password for a successful login. Users will have the right to set passwords according to their wishes. This project comprises text passwords i.e.passphrase, color combination, and graphical password for the three levels respectively. Along these lines there would be immaterial odds of a bot or anybody splitting passwords regardless of whether they have broken the principal level or second level, it is difficult to break the third one. While making the innovation the accentuation was put on the utilization of inventive and untraditional techniques. Numerous clients locate the broadest text-based secret key frameworks hostile, so on account of the three-level secret key, we had a go at making a straightforward UI and giving clients the best possible comfort in solving passwords**.**

II. LITERATURE SURVEY

User Authentication: A Three-Level Password Authentication Mechanism by Gouri Sankar Mishra, Pradeep Kumar Mishra, Parma Nand, Rani Astya, Amrita. published by: International Journal of Engineering Research and Technology IJERT in 2020: In this paper, they have used three levels of authentication and in that the first level is a textual password where the user will have to set up a password at the time of registration and at login the same password needs to be entered to clear the level. The second level of authentication is a color pattern in which the user needs to select the same color pattern that he chose at the time of registration. The last level of authentication is OTP, where the user needs to enter an OTP that is sent at the time of login to the registered mail. [1]

3 Level Security System: A 3 Level Security System by Anaswara Davis, published by IJERT inn 2015 . Here the first level of this is the text-based password that the user needs to enter while login same as registration, then the second level comes as an image-based password where the user needs to select the same three images from three grids that they chose at the time of registration and lastly, they need to verify the third level of authentication which is an OTP sent to their registered email.[2]

Three Level Security System Using Image-Based Authentication: A Three-Level Security System Using Image-Based Authentication by S Gopalkrishna, M Aparna, C.M. Anjushree. Published by IJARCCE in 2018. In this,

MOVIE RECOMMENDATION SYSTEM USING SENTIMENTANALYSIS

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ABSTRACT

Recommendation system has become an essential part of E-commerce and Digital Marketing. It is difficult to filter out options for an Individual based on personal preference and it is a major challenge for the recommendation system. Many users keep wondering what would be the next best thing to watch in their limited free time. A good recommendation helps solve the issue. The proposed system is built on the Content-Based Recommendation System. Users will receive user preference-based results, as well as an analytical version of a set of reviews, saving them from having to read through a lengthy paragraph of review. The user will learn the simplest meaning of it by just two keywords: good and bad. Sentiment Analysis is used to perform this analysis. In the Movie Recommendation System machine learning algorithms are implemented to solve this issue. This system works on the individual's rating and would suggest certain options based on the user's previous watch. As it calculates the similarity between different users' taste and rating given by them for further Recommendations.

Keywords: Bad, Content-Based, Good, Movie Recommendation, Machine Learning Reviews, Sentiment Analysis.

I. INTRODUCTION

In today's world, entertainment is the most important element of one's lifestyle. As OTT grows in popularity as a result of the digital revolution, more and more people are turning away from traditional concrete block movie theatres and toward monthly subscription-based OTT. Users are enrolled to multiple OTT services, however, because corporates are competing to acquire major titles and publish them under their banner. As more content becomes available to the user, the user's perplexity about what to watch grows. A consumer spends more time perusing the catalogue than actually watching the content. Users should have a good number of recommendations from past material so that they can simply choose what to watch next. The goal of the movie recommendation system is to make the catalogue browsing experience more user friendly and easy to analyze for the user in order to reduce buffer time.

II. PROBLEM STATEMENT

We've all been in the situation when, instead of viewing something significant at lunch, we just keep scrolling through the vast catalogue of movies and shows, and before we know it, our time is gone. Instead of navigating through the sea of options, we may just check the recommendations for the genres we enjoy watching. As a result, this system is built on the Recommendation System, which provides consumers with a variety of choices from which to choose. Users will be recommended movies by this method. This system is based on the individual's rating and would recommend certain options based on the user's previous viewing history. As it computes the similarity between different users' tastes and ratings for future recommendations.

III. LITERATURE SURVEY

1) Bagher Rahimpour Cami, Hamid Hassanpour, and Hoda Mashayekhi proposed a Content- based Movie Recommender System Based on Temporal User Preferences. It implements the Temporal Preference Model, which is trained with three primary elements in mind: interest extraction, preference inference, and prediction. The dataset of movies is gathered from IMDB and then separated into these three key elements depending on the plot, rating, and genre. The suggested system provides consumers with reliable results based on the content seen, as well as recommendations for new movies connected to the content.

2) B Venkatesh and Subramanyam Kunisetti introduced Content-Based Movie Recommendation System Using Genre Correlation. The objective of this system is to give consumers with material based on a dataset that has been partitioned into two portions. One part offers a list of movies as well as the genres into which they have been classified. The other section of the dataset comprises a list of movie ratings given by the user on a scale of 1–5, with 5 being the highest. The rating has been converted to binary values for ease of use. It compares the similarity of the values.

3) Minjae Kim, SungHwan Jeon and Heeseong Shin proposed Movie Recommendation Based on User Similarity of Consumption Pattern Change. The purposed system is to forecast and propose a movie based on user movie consumption behaviours. Because it calculates user similarity based on movie rating data and

FORGE: A VOICE MIMICKING TECHNOLOGY

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ABSTRACT

Technological advancement has continued to develop over the once two decades impacting how we engage with each other. Text-to- speech has been a crucial area of focus for software inventors in recent times, especially those working in fields similar as developing AI for smart machines, deep- literacy, and NLP. We present a neural network- grounded system for textbook-to- speech (TTS) conflation that's suitable to induce speech audio in the voice of different speakers, including those unseen during training. Our system consists of three singly trained factors a speaker encoder network, a sequence-to- sequence conflation network grounded on Tacotron 2, an bus-accumulative WaveNet- grounded vocoder network. We demonstrate that the system is suitable to transfer the knowledge of speaker variability learned by the discriminatively trained speaker encoder to the multi-speaker TTS task and is suitable to synthesize natural speech from speakers'unseen during training. We quantify the significance of training the speaker encoder on a large and different speaker set in order to gain the stylish conception performance. Eventually, we show that aimlessly tried speaker embeddings can be used to synthesize speech in the voice of new speakers different from those used in training, indicating that the model has learned a high- quality speaker representation. As similar, the thing of this design was to produce a tool for generating natural speech from textbook for a variety of speakers. The result of this design demonstrates the capability of neural network to be useful in this task.

Keywords: Voice cloning, voice recognition, Deep learning, Speaker Encoder, Synthesizer, Wavenet , vocoder, Text-to-speech.

I. INTRODUCTION

Forge is an implementation of Transfer Learning from Speaker Verification to Multi-Speaker Text-to-Speech synthesis with a vocoder that works in real- time. It's a deep literacy frame in three stages. In the first stage, one creates a digital representation of a voice from a many seconds of audio. In the alternate and third stages, this representation is used as reference to induce speech given any arbitrary textbook.

It consists of three independent factors which is introduced to give an effective result to the multi-speaker adaption during speech conflation. These factors videlicet Speaker Encoder, Synthesizer and Vocoder are deep literacy models that are trained singly of each other. It allows creating a numerical representation of a voice from a many seconds of audio and to use it to condition the model to induce new voices.

The thing of this work is to make a TTS system which can induce natural speech for a variety of speakers in a data effective manner. We specifically address a zero- shot literacy setting, where a many seconds of un transcribed reference audio from a target speaker is used to synthesize new speech in that speaker's voice, without streamlining any model parameters. Similar systems have availability operations, similar as restoring the capability to communicate naturally to druggies who have lost their voice and are thus unfit to give numerous new training exemplifications. They could also enable new operations, similar as transferring a voice across languages for further natural speech-to- speech restatement or generating realistic speech from textbook in low resource settings.

Synthesizing natural speech requires training on a large number of high- quality speech- paraphrase dyads, and supporting numerous speakers generally uses knockouts of twinkles of training data per speaker. Recording a large quantum of high- quality data for numerous speakers is impracticable. Our approach is to uncouple speaker modeling from speech conflation by singly training a speaker-discriminational embedding network that captures the space of speaker characteristics and training a high- quality TTS model on a lower dataset conditioned on the representation learned by the first network. Divorcing the networks enables them to be trained on independent data, which reduces the need to gain high quality multi-speaker training data. We have trained the speaker embedding network on a speaker verification task to determine if two different utterances were spoken by the same speaker. In discrepancy to the posterior TTS model, this network is trained on un transcribed speech containing reverberation and background noise from a large number of speakers. We demonstrate that the speaker encoder and conflation networks can be trained on unstable and disjoint sets of speakers and still generalize well.

ALCOHOL DETECTION WITH ENGINE LOCKING SYSTEM

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ABSTRACT

Drink and drive is the reason behind most of the deaths, so the Alcohol Detection with Engine Locking Using Raspberry Pi aims to change that with automated, transparent, noninvasive alcohol safety check in vehicles. System uses alcohol sensor with raspberry pi along with dc motor to demonstrate as vehicle engine. System constantly monitors the sensitivity of alcohol sensor for alcohol detection. If driver is drunk, the processor immediately stops the system ignition by stopping the motor. If alcohol sensor is not giving high alcohol intensity signals or values, system lets engine run. The raspberry pi processor constantly processes the alcohol sensor data to check the presence of alcohol and operates a lock on the vehicle engine accordingly. So, by providing this solution the accidents can be prevent.

Keywords: Alcohol Sensor, DC motor, Ignition, Processor, Raspberry Pi

I. INTRODUCTION

The current scenario shows that the most of the road accidents are occurring due to drink and drive cases. The drivers who drink alcohol are not in a stable condition and so, rash driving occurs on highway which can be risky to the lives of the people on road, the driver inclusive. The laws in India are currently prohibiting drivers to drink and drive so that the fine imposed on them can stop them to drink and drive. Therefore, there is the need for an alcohol detection system that can function without the restriction of space and time. This project comes with the solution that, when an alcohol is detected around the sensor, the sensor will send the command to processor to immediately stop the engine of vehicle. Simultaneously it will also track the location with the help of GPS module and will send it to Raspberry pi and then the raspberry pi will click the picture of drunk person and will send all the information to the telegram bot of the registered person. This method is very effective in not only lifesaving of particular person but the life of others also who are driving nearby the drunk person. It will also save the loss of vehicle done due to accidents. This application is more useful for those people who gives their vehicles on rent for driving.

II. LITERATURE SURVEY

[1] L. A. Navarro, M. A. Diño, E. Joson, R. Anacan and R. D. Cruz, "Design of Alcohol Detection System for Car Users thru Iris Recognition Pattern Using Wavelet Transform," 2016 7thInternational Conference on Intelligent Systems, Modelling and Simulation (ISMS), Bangkok, 2016, pp. 15-19. The author has put forward a technique which utilizes GPS and GSM to ascertain alcohol but this technique is very expensive, but the expenses can be cut off to a great extent. In this project a siren is being used which is most highly economical, and can keep people in close proximity vigilant.

[2] Mugila.G, Muthulakshmi.M, Santhiya.K, Prof. Dhivya.P- Smart Helmet System Using Alcohol Detection For Vehicle Protection [International Journal of Innovative Research in Science Engineering and Technology (IJIRTSE) ISSN: 2395-5619, Volume – 2, Issue – 7. July 2016]. Composite health monitoring and sensors based on infrared is utilized to ascertain alcohol as talked about by writer but the chance of false alarm can't be avoided in this system, because minute changes in some situations can result in false alarm but in our project use of required technology makes it more authentic.

[3] Dhivya M and Kathiravan S, Dept. of ECE, Kalaignar Karunanidhi Institute of Technology- Driver Authentication and Accident-Avoidance System for Vehicles [Smart Computing Review, vol. 5, no.1, February 2015]. To prevent the mishap of drunken driving author have used PIC16F877A microcontroller which is an outdated system and expensive one also which restrains its use to only certain class of society whereas we are using Arduino Uno microcontroller which is advanced as well as economical.

[4] Babor, AUDIT: The alcohol use disorders identification Test: Guidelines for use in primary health care. 1992, Geneva, Switzerland: World Health Organization.

Worrying about the drunken driving the author suggests the system to overcome the issue but using mQ2 alcohol sensor has come flames .MQ2 alcohol sensor is not authentic and raises the chances of false alarm while we have used MQ3 which is highly authentic.

[5] D. S. a. A. Chowdhury, "A Real Time Embedded System Application for Driver Drowsiness and Alcoholic Intoxication," International Journal of Engineering Trends and Technology (IJETT), vol. 10, no. 9, Apr 2014.

CRYPTOGRAPHY BASED MESSENGER APP

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ABSTRACT

With the advancement of technology, communication has taken a big step. A number of messenger applications are designed to exchange data once information online. This data is also very confidential could be in danger of a security attack. Therefore, it must be protected with certain encryption techniques to keep the information confidential and away from unauthorized access. In this paper, we propose an efficient cryptography algorithm based messenger app. Symmetric and asymmetric algorithm is used in this application. This application is more secure and makes use of private communication between sender and receiver.

Keywords: Cryptography, Encryption, Decryption, AES, DES, RSA, MD5, Secure messenger application.

1. INTRODUCTION

Technology is used in all areas of life, and people are more dependent on smartphone technology that contains powerful computer processors to exchange information and data. This is due to the necessity of our multimedia documents to be protected from unauthorized people. Therefore, the daily use of cryptography in our life greatly increased. The Messaging System is a text or instant messaging service component of telephone, web or mobile communication systems worldwide. But is it really safe to use? In public instant messaging systems, messages are sent by from the client to the server and back to the second client. This data could potentially be seen by an eavesdropper anywhere along its Internet path or in the network. So at any time information can be passed on to others. For this reason, this project involves the event of the secure messaging system using cryptographic technology.

Secure messaging is developed to guard sensitive data from unauthorized access. it's confidential and authenticated exchange by any internet user worldwide. Brute force attacks are made to interrupt the encryption and that they are growing so faster. These attacks are the most drawbacks of older algorithm. But with feature this algorithms are going to be replaced by other techniques which will provide better protection. during this paper we are getting to proposed a secure messaging system that's implemented by an encryption technique which is more faster, better resistant to attacks, more complex, easy to encrypt and lots of more advanced security feature included.

2. LITERATURE SURVEYS

- In this paper Rohan Rayarikar [1] introduced a method running on the Android environment that encrypts messages before being sent by the user over the network allowing the encrypt messages before sending them over the network. The AES algorithm has been used to encrypt and decrypt data and this method can run on any mobile running the Android system environment.

- SMS Encryption by using Android Operating System by Asst. Prof. Dr. Jane [2] is based on the RSA algorithm to encrypt a message and the length of 160 characters and after using the algorithm to encrypt the message in the Android environment is sent via the recipient's phone number by the sender and the application is programmed using the language of Java.

- The authors Jayeeta Majumder [3] in this paper used application is based on the AES algorithm to encrypt SMS message and sending a message encrypted in the Android environment over the network the application is programmed using the language of Java.

3. PROBLEM STATEMENT

Malicious users are always interested to hack servers and reveal information about users in a certain system including celebrities and this happens almost every day in the introduction Internet world. Unfortunately, instant messaging applications are not an exception. There are many mobile chat applications available for users. Many of these applications claim that they are providing confidentiality, integrity and availability of user's information. However, daily hacking news prove that many developers do not consider security as the primary goal of their applications. On the other hand, governments are keen on tracking their citizens and forcing more service providers to reveal profiles of their users in the hands of their agents. Furthermore, chat applications providers misuse information of their users. For example, while many chat applications are free to use, they equip the application with built-in processes which track every single movement. There must be careful with what is going to be published on social networks.

STOCK MARKET PREDICTION USING MACHINE LEARNING

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ABSTRACT

Algorithmic trades (AT) and their activity in the esteem revelation process on the S&P 500 summary associations are being assessed. Extraction of the association tickers and their individual stock data is being done. Gotten some answers concerning different AI classifiers and their importance in Algorithmic Trading. Algorithmic trading act purposely by checking the market for liquidity and deviations of expense from focal regard. Algorithmic Trading chooses the three fundamental conditions of the securities trade whether to buy, sell, or hold a stock. Different data controls were done and numerous abilities were made which were mapped to different names and using classifiers endeavoured to anticipate the three conditions of the securities trade. Overall, budgetary trade estimate is an extraordinarily confounding system, to control stocks as demonstrated by your necessities, incorporates cumbersome data of stocks and how these stocks can change their advancements and by the sum they will climb or down in light of some financial circumstances. Issue is that, can a Machine foresee these advancements and devise a sort of trading strategy according to the given data using particular AI models.

Keywords: Stock market; Prediction; Machine learning; Artificial neural network

L. INTRODUCTION

The Stock market check is an exceptionally fascinating errand which joins high substances of how the budgetary exchange limits, and what unconventionalities can be prompted in a market in light of different conditions. While a few venders may battle that the market itself is functional, and that if there is new check or any assortment from the standard in a market it charms it by auditing itself, thusly making no space for conjectures, while several vendors may battle that on the off chance that the information is orchestrated well, by then machine can make a sort out of procedure that is persuading can affect high continue exchanging or HFT, which is just conceivable through Algorithmic Trading Systems or Automated Systems of Trade. Money related authorities think about the expression, buy low, move high yet this does not give enough setting to settle on proper Endeavor decisions. Before an investigator places assets into any stock, He should realize how money market continues. Setting assets into a wonderful stock regardless at a horrible time can have awful results, while vitality for a common stock at the fortunate time can hold up under focal points. Cash related monetary pros of today are going toward this issue of trading as they don't for the most part understand concerning which stocks to buy or which stocks to offer with the authentic objective to get impeccable focal points. Envisioning whole game plan estimation of the stock is commonly clear than foreseeing on day-to-day premise as the stocks change rapidly reliably subject toward events.

The answer for this issue requests the utilization of instruments and advances identified with the field of information mining, design acknowledgment, machine learning and information forecast. The application will foresee the stock costs for the following exchanging day. The necessities and the usefulness of this application corresponds it to the class.

II. RELATED WORK

[1] Stock Market Prediction Using Machine Learning Techniques Mehak Usmani, Syed Hasan Adil et al [3] proposed the main objective of this research is to predict the market performance of Karachi Stock Exchange (KSE) on day closing using different machine learning techniques. The prediction model uses different attributes as an input and predicts market as Positive & Negative. The attributes used in the model includes Oil rates, Gold & Silver rates, Interest rate, Foreign Exchange (FEX) rate, NEWS and social media feed. The old statistical techniques including Simple Moving Average (SMA) and Autoregressive Integrated Moving Average (ARIMA) are also used as input. The machine learning techniques including Single Layer Perceptron (SLP), Multi-Layer Perceptron (MLP), Radial Basis Function (RBF) and Support Vector Machine (SVM) are compared. All these attributes are studied separately also. The algorithm MLP performed best as compared to other techniques.

[2] Gursean et al. (2011) describe ANN as one of the best techniques to model the stock market, because it does not contain standard formulas and may be easily adapted to market changes. ANN have the ability to learn by example and make interpolations and extrapolations of what they learned. The use of ANN in the solution of a

E-COMMERCE APPLICATION USING MERN STACK (GADGETKART.COM)

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ABSTRACT

In today's generation, most people are using technology for leading their lives and fulfilling their daily needs. In this generation, most of us using E- commerce websites for shopping for clothes, groceries, and electronics. We have developed one E-commerce websites by using MERN stack technology as it contains MongoDB, Express.JS framework, React.JS library, Node.JS platform. This site is fully functional with different views for user and admin and it also has integrated with payment gateway for checkout. By using this website, we can buy different types of electronic products and we can choose different styles of electronic products based upon customer interests. In this project, we can add different products and can delete them also. We have developed administrative functions for the website such as create a product, create categories, Admin dashboard, manage products, Manage categories. For customers, they can quickly add their items to the cart. Based on the items in the cart then the bill gets generate and the customer can pay by using stripe. MERN stack is a collection of technologies that enables faster application development. It is used by developers worldwide. The main purpose of using MERN stack is to develop apps using JavaScript only. This is because the four technologies that make up the technology stack are all JS- based.

1. INTRODUCTION

The goal of this work is to build a simple E-Commerce website using MERN stack(MongoDB, Express, React and Node) where users can add items, pay and order. Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions. Ecommerce is often used to refer to the sale of physical products online, but it can also describe any kind of commercial transaction that is facilitated through the internet. Whereas e-business refers to all aspects of operating an online business, ecommerce refers specifically to the transaction of goods and services. In online shopping customers can select a wide range of products based upon their interests and their price also, one can compare prices also from one store to another by using online shopping. By encountering the all problems and weaknesses of the offline shopping system, creating an E-commerce web application is necessary for searching and shopping in each shop. These days we have seen so many e-commerce websites are created like Flipkart, Amazon, Myntra one can easily buy their necessary products by using these websites. By using these types of websites one can buy their products by staying in their home. Eventually, we can see the difference between the prices of products also effective and powerful web applications. We aim to make a working e-commerce website where everything functions correctly. So, the features we would be having in the application that we would be building are:-Authentication using JSON Web Tokens (JWT).Option to add, edit, view and delete all the items in our store. Option to add items or remove items from the cart. Display the total bill of the cart and update it as soon as the cart is updated by the user. Using Local Storage to store the JWT so that we only allow logged-in users to buy items. Option to pay and checkout thus creating order and emptying the cart. So, these are the basic features we would have in our application.

2. MOTIVATION

Study on ecommerce shopping and shoppers, mostly in the American continent, the European continent, Australia, and some parts of Russia have indicated various motivations behind the rising trends of ecommerce among the masses. However, the following are the most common and widely acceptable reasons behind the motivations for online shopping.

Low Price: Investment in online business is low compared to a brick-and-mortar store. Therefore, ecommerce can offer cheaper rates with other additional advantages that ultimately lures the shoppers to go online for various shopping needs.

Wide Selection Options: Ecommerce customers can surf the various stores for a wide range of products to make a better choice.

Convenience: Online shopping eliminates traveling or walking from one shop to another and save time, fuel, and money on visiting a number of brick stores.

Price Comparison and Bargaining: Due to comparatively low investment in ecommerce and stiff competition in online businesses, customers can get the best deal and more opportunities for bargaining.

ONLINE NOTES PORTAL AND OCR

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ABSTRACT

One of the foremost involved issues of these days is to precisely translate the text gift in a picture to somebody's clear text. This has been gaining attention of late due to the huge work done by the pc Vision Community.

The most vital idea behind this technology are a few things known as OCR – Optical Character Recognition. With the assistance of the OCR, we are able to search and acknowledge the text in electronic documents and might simply convert them into human clear text. It converts electronic documents' text into connected grapheme.

Document segmentation and Translation square measure one among the key areas in pattern recognition and tongue process. This paper presents details concerning translation in terms of an online application that accepts image associated pdf document as an input, wherever input document could be a user outline image file containing text in any language offered within the Python-tesseract library and will its actual translation in any supported languages victimisation Google Translator. Python script and numerous libraries square measure accustomed approach numerous challenges in segmentation and translation of a document.

And on-line Notes Portal permits student to share their Notes and Documents while not sharing their non-public info.

It will conjointly permit student to invite the notes that they're needed of on-line Notes Portal has its own info for storing the information files and knowledge recording the notes and student.

Keywords: Online Notes Upload, Download, OCR, Admin panel.

1. INTRODUCTION

Online Notes Portal and OCR may be a web-based application that permits student and school to share notes and documents concerning the topics and lectures.

In several schools their square measure therefore me students square measure introvert they merely can't raise anyone for notes and facilitate so we tend to making a poral which will have all reasonably notes for as long as college desires. It conjointly takes Queries from students if any student desires any reasonably special notes for the study, they merely simply enkindle it mistreatment question page on internet application.

It conjointly has OCR feature if any student desires to grab data the knowledge the data from pictures and pdf and edit that information as doc, they will do this by mistreatment OCR.

OCR signify Optical Character Recognition. it's a mechanism which will convert text in AN electrical document or a scanned writing into human decipherable text. It scans the text of the image character-by-character, analysis the image then converts into the respectable ASCII character Code. Most of the OCR devices have a optical scanner for scanning the text then Analysis it through the OCR and generating an editable document of the scanned image.

1.1 BACKGROUND

In today's world this is problem for many students that they cannot find all notes related to them Study. And also, many school and college doesn't have any website and any app related to library and for the notes. In the Pandemic many colleges and Schools were unable to provide the right kind of books for study for the student. Because they don't have any kind of online portal or app for notes and books study were mainly dependent on google for books and notes.

1.2 PROBLEM DEFINITION

In Current situation several schools don't have any reasonably IT support or any reasonably online management for them. they're in the main reliable on google and online services for give books and notes to their student. For that sort of faculties and college we have a tendency to try to produce an answer for them we have a tendency to create an internet notes portal for them wherever they'll share notes with one another while not revealing any one's identity. There's a quickly increasing demand for versatile and non-traditional learning and teaching. This demand is pushing universities and different instructional establishments to supply new ways in which of achieving best course delivery and scope, like by the increasing giving of on-line and amalgamated courses of study.

N-MARKET

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ABSTRACT

As the world is so busy, no one like the complexity with any work dealing with numbers. It might be hectic works. Specially when we have to types numbers for calling, messaging and WhatsApp. The situation creates panic and confusion on the person who do the task of calling, messaging and WhatsApp. Having Records of the called numbers is important the feedback after calling too.

Keyword: Calling, Messaging, Tally, Feedback and WhatsApp

I. INTRODUCTION

So, our aim is to develop an android application for marketing purpose. Marketing application provides you facility to call all the numbers in an excel sheet. Automatically call and hang up after certain duration. It's automatically sends SMS to each number and let them know the scheme. This application gives universal acceptance for offline as well as online commutators.

This application is developed with the objectives of making the system reliable, easier, fast and more informative. This application will help to managing various types of records such as client's details, product/schemes list & easily sell.

One of the main advantages of this Multi-Marketing Caller application is to connect peoples or clients which are far away from the internet world & provides useful content to them through SMS.

Short Message Services (SMS) is one of the most engaging and cost-efficient ways to engage prospects and customers. SMS and Call is a very effective marketing tool.

II. LITERATURE SURVEY

Virtual mentoring to enhance persistence essential for secondary and post-secondary students with disability enrolled in STEM learning (Gregg et al., 2016). Their evidence showed positive results using intentional frameworks and constructs to help enhance persistence and engagement. Their Research uncovered findings from the National Science Foundation that indicated that 1 out of 4 students with a disability enrol in a STEM major (Gregg et al., 2016). In addition, 56% of students with a disability do not report that they have a learning disability (Newman, et al., 2010). As a result, Gregg et al., (2016) their study reveals that with additional Assistance via virtual mentoring, students with a disability can increase their confidence as well as their competencies in areas such as math and science. This virtual program also hoped to reduce some of the barriers often experienced by the students such as traveling, time constraints and costs.

III.TECHNOLOGY USED

1) Android SDK
I) Android Studio as a Developer Environment for our app

II) Its open source

2) Java Language
I) The language that is been used to code N-Market App.

II) It is used in almost devices.

3) Android Device
I) To Install and test the App

II) Android 23+ API

4) XML Language
I) To design the Layout of the N-market app.

II) It is Extensible mark-up language.

5) WhatsApp API
I) TO connect the App with WhatsApp.

II) It check the validity of number

FAKE NEWS DETECTION USING MACHINE LEARNING

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ABSTRACT

In these current instances, we heavily rely on social media applications inclusive of facebook, instagram, twitter, whatsapp, and many others. With these apps getting used every day, people are sharing extra statistics than ever before. Now-a-days, the news get unfold just in a couple of seconds, with the usage of social media programs. While absolutely everyone can use it best few can inform the distinction between what they're reading is some thing true or something completely fake. In this fast or rapidly developing world we simply examine the news or watch the information and trust it. The news we study is on some social media utility it does now not mean that the news must be correct, it can be fake or perhaps half proper. As we understand social networks are open for everybody and they do no longer verify their consumer or their posts so spreading faux information and misleading humans is an event which is regularly faced. Fake news may be truly harmful as they could target an character, organization or political parties. One such example may be the recent activities where some social media influencers might be bribed to give statements which includes the covid-19 vaccines are useless and can be dangerous for human beings. So, we're creating a gadget to come across whether or not the news that is provided is real or false, with the help of some Machine Learning Algorithms and some python libraries Our purpose is to offer the consumer actual or authentic information and allow the user come to recognise what they may be reading is absolutely actual or not, and additionally take a look at the authenticity of the web sites.

Keywords: Fake News, Machine Learning, News Detection, Algorithm

1. INTRODUCTION

Fake information is false or deceptive facts provided as information. It often has the purpose of adverse the reputation of a person or entity, or earning money through advertising and marketing revenue. They frequently have grammatical mistakes. They are often emotionally colored. They regularly try to affect readers' opinion on some topics. Their content isn't constantly true. They regularly use attention in search of phrases and news format and click baits. They are too properly to be real. Their assets aren't real maximum of the times. Our life now has turn out to be digital, as we can do most of the things on-line just by means of one click. In this virtual growing world, using net is increasing. It's like maximum of our lives depend on such social media programs. So, the use of those packages we additionally gain maximum quantity of news. The cause defined for this is, traditional information is more time ingesting. Consuming information from social media structures feels easy due to the fact we are able to proportion, speak the news via just one click While the use of social media we trust in what we study, and we even don't know that the news we read is whether or not correct or fake. We accept as true with what we see or what we read, and our maximum amount of decisions and reactions rely what we see and study. So, with the aid of analyzing fake news we may also judge the person or organization.

2. LITERATURE SURVEY

Mykhailo Granik ET. Al. In their paper indicates a simple technique for fake news detection using naive Bayes classifier. This technique changed into carried out as a software system and examined in opposition to a information set of Facebook news posts. They have been accumulated from three large Facebook pages every from the right and from the left, in addition to 3 massive mainstream political news pages (Politico, CNN, ABC News). They completed classification accuracy of about seventy four%. Classification accuracy for fake news is barely worse. This can be resulting from the skewness of the dataset: only 4.9% of it is fake information.

Himank Gupta gave a framework primarily based on different gadget studying approach that deals with numerous issues along with accuracy scarcity, time lag (BotMaker) and excessive processing time to handle heaps of tweets in 1 sec. Firstly, they have got accrued 400,000 tweets from HSpam14 dataset. Then they further symbolize the 150,000 spam tweets and 250,000 non- unsolicited mail tweets. They additionally derived a few light-weight capabilities along side the Top-30 words which can be supplying maximum facts advantage from Bag-ofWords model. They have been able to obtain an accuracy of 91.65% and exceeded the present solution through approximately 18%. Marco.

3. SYSTEM DESIGN

We have created this project for detecting fake news. We chose python programming language as it provides beneficial tools and capabilities that makes developing web applications less difficult. It offers developer

MENTOR APPLICATION SYSTEM

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ABSTRACT
Mentor is as individual with expertise who can develop the career of a mentee. This career-related function establishes the mentor as a coach who provides advice to enhance the mentee's professional performance and development. Mentors have right to advise students on academic guidance, career advice, and professional development. Different mentors play various roles which are able to address different developmental needs of mentees in order to facilitate career progress. Mentoring is one of the most dynamic and traditional pedagogical tools, holding a great promise in the way of learning in educational technology. The emphasis should be on motivation and improvement of the students. As a replacement for face-to-face interactions, Electronic-Mentoring System (E-Mentoring System) uses an asynchronous, electronic medium to establish and sustain the liaison among the mentors and the proteges in an organization. Mentoring system is a client - server based model which acts as an interface between mentors and mentees-Mentoring uses a computerized medium to transfer knowledge and skills from teacher to student. It basically focuses on student and faculty relationships. E-Mentoring is fundamentally developed to improve the performance of students by assisting mentors to understand the problems of students more effectively and easily.

Keywords: Web Development, Admin Module, Student Module, Teacher Module, Database, Login.

I. INTRODUCTION
We have created a Mentoring software application which is accessible by both the Mentor(faculty) and the Mentee(student). The program is effectively designed to be used in the educational sector. The purpose of this program is mentoring students. This system is built under a runtime environment. While making this program complete object-oriented programming techniques are used to handle the real-world challenges in the system. This system contains three users who are admin, mentors and students. This system can be used as an application for Mentor Information Database to manage the college information and student's information. The system is an online application that can be accessed throughout the organization and outside customers as well with proper login provided. A mentor is an individual with expertise who can help develop the career of a mentee. A mentor often has two primary functions for the mentee.

The career-related function establishes the mentor as a coach who provides advice to enhance the mentee's professional performance and development. The psychosocial function establishes the mentor as a role model and support system for the mentee. Both functions provide explicit and implicit lessons related to professional development as well as general work–life balance. The mentoring relationship is inherently flexible and can vary tremendously in its form and function. The mentoring relationship exists between one individual in need of developmental guidance and another individual who is both capable and willing to provide that guidance.

The program allows for current students to impart their knowledge and experiences attending the college, and enhance their communication and goal setting skills. Mentors have the opportunity to advise students on academic guidance, career advice, and professional development. Mentors and students will be paired based on a variety of factors. There will be an expectation for both individuals to engage each other on a regular basis to ensure the relationship grows and benefits both the student and the professional. Pairs are asked to meet at least once a month for a formal commitment of 4 months, and we hope to allow each mentoring relationship to develop in a way that best suits the individuals involved. Mentees often have more than one mentor throughout their careers. With multiple mentors, a mentee can benefit from different mentors who have a variety of experiences and skill strengths to share. A developmental network perspective is used to expand our understanding of mentoring. Different mentors may be able to address different developmental needs of mentees in order to facilitate career progress

II. LITERATURE SURVEY
We have undergone certain research papers based on the Experimental Analysis of Colleges and Schools data Using Data Mining and found out certain methodology and key findings. During the process, we have also identified certain research gaps which we can overcome while implementing our project.

1. E-Mentoring System Application (DOI: 10.1109/I-SMAC.2018.8653663):
Teaching is most dynamic and traditional pedagogical tool, which holds the great promise in the way of learning in educational technology thus the aim should be on motivation and improvement of the students. Replacing the

ONLINE SECOND HAND VEHICLE BUYING & SELLING

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ABSTRACT
This Project is a web based application developedfor users who can Buy and Sell Second Hand Vehicle from the comfort of home through the Internet. It is a virtual store on the Internet where customers can browse the catalog and select Vehicles they are interested in, and Further read full details about the Vehicle. This system overcomes the problem of searching for a second hand vehicle. People usually go to garages and showrooms in search for their desired second-hand vehicle that they wish to buy that becomes tedious at a point and even consumes lot of time. Hence the project helps users to get their desired vehicle details online at a single place. User also get an Options where they can see the Health Condition of the Vehicle (Good, Average, Bad) and also the Live Status of the Vehicle whether it is For Sale/Sold. The Main Aim of the Project is to provide best used vehicles at low ratesfor the people without any Commissions. The Vehicles will be listed in the Ads Format, A user can view the details, status and condition. If the user wants to buy the vehicle he can contact the seller using Contact Details.

Keywords: Second Hand Vehicle buy & sell online system, Vehicle resell system

I. INTRODUCTION
SHVBS (Second Hand Vehicle Buy and Sell) isa Project meant to give people a better and trustworthy platform where they can List their vehicle to sell, and buy Vehicles of their own choice and obviously on their own terms and condition. With the help of internet and computer systems anyone can buy/sell his vehicle from anywhere the anytime.

People usually go to garages in search for their desired second-hand vehicle that they wish to buy, it becomes tedious at a point and even consumes lot oftime. Hence the project helps users to get their desired vehicle details online at a single place.

User also get an Options where they can see the Health Condition of the Vehicle (Good, Average, Bad) and also the Live Status ofthe Vehicle whether it is For Sale/Sold.

The Main Aim of the Project is to provide best used vehicles at low rates for the people without any Commissions.

II. SCOPE OF THE PROJECT
This is Project is based on buying and Selling of Wide Variety of categorized used Vehicles, easily and more comfortably.

The Burden of visiting, seeing, condition and human mood gets cleared by this simple website.

This system overcomes the problem of searching for a second hand vehicle. People usually go to garages and showrooms in search for their desired second hand vehicle that they wish to buy that becomes tedious at a point and even consumes lot of time.

Hence the project helps users to get their desired vehicle details online at a single place.

III. EXISTING SYSTEM
- The existing system is paid and in some system commission is taken for buying/selling used cars.

- Whereas our system is Free to use for both Buyers and Sellers, no commission are taken, there is no middle-men.

- Buyers contact the Sellers using details provided in the Ad/Listing, and proceeds further.

IV. PROPOSED SYSTEM
- Second Hand Vehicle buy and sell website is not only for cars, but bikes, scooters, EVs as well.

- The scope of the system allows developer to know about the limitations of the proposed system.

- The system is designed for the people who is having much more interest in sell and purchase vehicles.

- The proposed system is a website developed for people who wants to sell their vehicles and purchase vehicles.

UP FLOW - ANAEROBIC SLUDGE BLANKET REACTOR (UASB)

Zulfiquar Ahmad
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ABSTRACT
Anaerobic Wastewater Treatment is a wastewater treatment system in which waste is decomposed anaerobically in closed tank, anaerobic treatment is used around the world treating biologically for both domestic and industrial wastewater. The two principal advantages of anaerobic over aerobic treatment are the production of biogas, which can be used as fuel, and the lower rate of biomass production, which results in lower maintenance costs for the plant. The up flow anaerobic sludge blanket (UASB) reactor is an attractive alternative for regions in hot climates since it works better under mesophilic conditions and it does not need any other structure for the development of microorganisms, which grow in the form of granules. In this thesis, a model describing the UASB reactor behaviour with respect to substrate degradation, microorganism growth and granule formation is discussed

Keywords: UASB, aerobic, anaerobic

INTRODUCTION
Anaerobic Wastewater Treatment is a wastewater treatment system treated biologically without using of air or oxygen. It aimed to remove organic pollution in wastewater, slurries and sludge. Anaerobic microorganisms convert organic pollutants into a "biogas" which contains methane and carbon dioxide.[1]
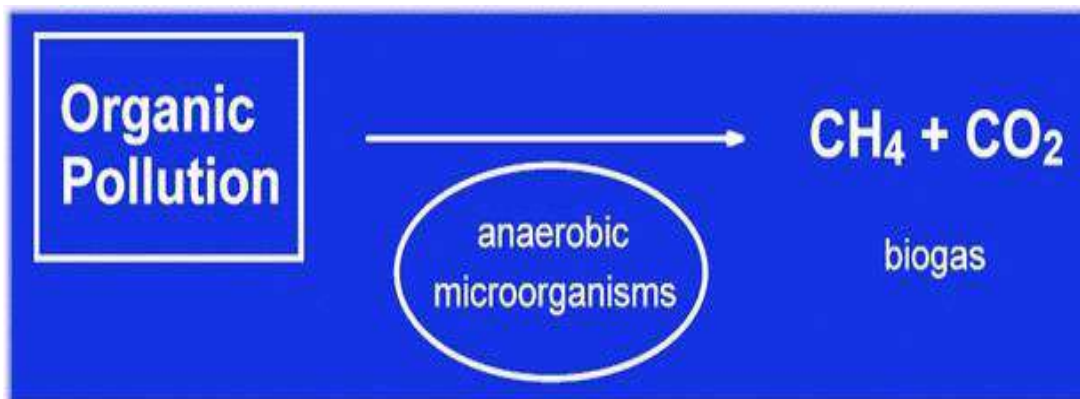
Conversion of Organic Pollutants to Biogas by Anaerobic Microorganisms
Up flow anaerobic sludge blanket technology also known as UASB reactor is a form of anaerobic digester which used in wastewater treatment. UASB reactor is a methane-producing digester, which uses an anaerobic process and forming a blanket of granular sludge and is processed by the anaerobic microorganisms.

Concept and Design
UASB reactor is three-phase separator, which enables the reactor to separate gas, water and sludge mixtures under high turbulence conditions. This allows for compact, cheaper designs.[1]

ACOUSTIC OF SOUND TREATMENT

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ABSTRACT

Noise pollution 'is usually defined as Unwanted sound or noise that is not required. This disturbance noise is also known as noise pollution, which often haunts local communities especially for residents around cities, as well as industrial and commercialization areas. According to the world health organization (WHO), noise pollution is ranked third as the most dangerous environmental pollution after air and water pollution. So new field science is developed with planning building and auditorium and schools and colleges with to provide best audible to audience and students is called acoustic of sound treatment. Use of sound absorbing material to give desire degree of from echo and to absorb or diffuse sound in the room to avoid ringing and flutter echoes and improve stereo imaging. It helps to keep sound from leaking into or out of the room. Study how acoustic treatment is done by using such type of project improves the quality in auditorium or classrooms or conference hall or theatre, stadium etc. Audience in there can hear better sound. We have a idea about how we used waste material to different things after treatment of wastage of raw materials used are polyester cloth, polythene rope, nails. The polyester cloth or polyester acoustic panel is a high performance and durable sound absorptivity product installation of polysorb acoustic. Polythene rope is to resist polyester cloth on wall surface. Concrete nails we use for fixing the rope in the wall. It is found how acoustic treatment is done by using above type of waste material. It is expected results to improve the sound quality in auditorium or classrooms etc. Audience can hear better sound. Full construction of acoustic treatment of sound is durable. Economical and very strong for long suitable. Thus this paper is an attempt to define sound treatment, its classification and types, procedure adopted, advantages and its application in the field of construction by literature view are discussed.

Keywords: Noise, Sound Absorber, Echo Time, Frequency.

1-INTERODUCTION

Noise pollution 'is usually defined as unwanted sound or noise that is not required. This disturbance noise is also known as noise pollution, which often haunts local communities especially for residents around cities, as well as industrial and commercialization areas. According to the world health organization (WHO), noise pollution is ranked third as the most dangerous environmental pollution after air and water pollution. So new field science is developed with planning building and auditorium and schools and colleges with to provide best audible to audience and students is called acoustic of sound treatment.Noise pollution does not only impact human psychology but also flora and fauna following noise pollution that often affects people and the environment sound absorbing panels have been introduced for use in all types of space. Different types of sound absorption materials have been produced from a variety of sound absorption materials in the market. Every sound absorbs produce different sound absorption rates. Nowadays, a lot of sound absorber panels are made using less environmentally friendly materials which are synthetic.Among synthetic materials used are glass fabrics and minerals studies have shown that glass fiber can absorb sound better than their synthetic materials, however other studies on health issues mentioned that glass fiber is not suitable to be used as a materials for sound absorbing purposes. It is stated that if humans breathe in the air filled with glass fiber for too long they will experience skin inflammation redness, sore throat, cough, bronchitis, breathlessness, and lungs related illness.

2- STATEMENT OF THE PROBLEMS

Acoustic Problems and Solutions, we address some of the most common acoustic problems music education face in their rehearsal and practice areas. We help define the problems and explain the steps you can take to fix or at least minimize them. A few solutions are simple, most will require some investment, and in some cases, very little can be done short of renovating your space. But in every instance, we believe this guide will help you better understand and evaluate your own areas—help you avoid spending time or money on remedies that don't actually work and equip you with a starting point and some facts to advocate effective improvements to your spaces. In this guide, Acoustic Problems and Solutions, we address some of the most common acoustic problems music educators face in their rehearsal and practice areas. We help define the problems and explain the steps you can take to fix or at least minimize them. A few solutions are simple, most will Require some investment, and in some cases, very little can be done short of renovating your space. But in every instance, we believe this guide will help you betterunderstand and evaluate your own areas help you avoid spending time or

MINI HYDROELECTRIC POWER PLANT

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ABSTRACT

Hydroelectric power plant are one of the best renewable energy sources in the world. This paper presents the development of a hydroelectric generating system that generates electricity from the potential energy of water strike on the Pelton bucket and converting the kinetic energy of water into electrical energy that can be stored in batteries to be used as power supply for Home appliances, and any other applications. The developed system is hydroelectric generator designed for small sized pipes (1 to 2 inch). Hydroelectric power plant contains a turbine that rotates by the running water in these penstock to generate the electricity and a charging circuit to store the generated electricity into battery cell. It also contains a Pressure detector and DC Voltmeter, ammeter for the whole operation of the system, measure and display the amount of water flow, the amount of electricity generated. By increasing the flowing of water, the rotation of the Pelton turbine will be increased and the amount of generated electricity will be increased. Therefore, the proposed system can also be applied on a wider scale so that this system with big Pelton turbine can be connected with municipal water pipelines, which ensures greater flow of water and generating more energy that can be used for street lighting and etc. The results show that the proposed hydroelectric generator can harness the untapped kinetic energy of water flowing inside the Penstock and produce power around 70 W when the velocity of water flow is 31.8 l/min.

Keywords: Hydroelectric generator; renewable energy; Pelton turbine; Penstock; kinetic hydropower.

I. INTRODUCTION

Renewable Energy is an energy which can be replenished naturally and thus is not going to run out such as solar energy, wind energy, geothermal energy, bio energy, hydropower energy. Hydropower is considered one of the most developed renewable energy technologies and it is used for generation electric power in many countries worldwide. Since generation electricity from the hydropower does not consume or pollute the water used for this generation, it leaves this energetic resource available for the other uses.

The electric power shortage and the continuously electrical power cut-off is big problem that Gaza faces. Using Hydro power plant for electric power generation is one of the Best methods to generate electricity. A power generating system using the hydropower which is the most pure type of energy in the world. The proposed hydroelectric generating system generates electricity from the potential energy of water flowing inside Penstock through converting the kinetic energy of water into electrical energy that can be stored in batteries, which is used as power supply for uninterruptible operation of home appliances and any other uses.

Hydroelectric power technology is generating the electricity from the flowing of water of streams, rivers, and tides. Water is moved through a Penstock to turbine which let its shaft to rotate when the water is striking to the blades of this turbine. The shaft of turbine is connected to a generator which converts the mechanical motion of turbine shaft into the electrical energy. The water flowing is a pollution-free, renewable, safe, and reliable energy source. The water flows in Penstock and turbine contains kinetic energy due to the water pressure fluctuation which can be converted to electrical energy by energy harvesters.

Therefore, this paper proposes a power generating system using the hydropower which is the most pure type of energy in the world. The proposed hydroelectric power plant that generates electricity from the potential energy of water strike on the Pelton bucket and converting the kinetic energy of water into electrical energy that can be stored in batteries to be used as power supply for Home appliances, and any other applications. The developed system is hydroelectric generator designed for small sized pipes (1 to 2 inch). Hydroelectric power plant contains a turbine that rotates by the running water in these penstock to generate the electricity and a charging circuit to store the generated electricity into battery cell. It also contains a Pressure detector and DC Voltmeter, ammeter for the whole operation of the system, measure and display the amount of water flow, the amount of electricity generated.

This paper is organized as follows. Section II discusses previous related works. Section III describes the proposed design of the hydroelectric power plant and its implementation. Section IV presents the results. Finally, Section VI the conclusions of this work.

FOUR QUADRANT SPEED CONTROL OF DC MOTOR WITH THE HELP OF AT89S52 MICROCONTROLLER

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ABSTRACT
The main goal of this study is to use a microcontroller to create a four quadrant speed control for a DC motor. Control is the most critical aspect of any industrial organisation.the rate at which a machine operates. The key benefit of employing a DC motor is that the Speed-Torque relationship is more accurate.can be transformed into nearly any useful shapePulse Width Modulation, an electronic technology, is used to adjust the speed.which produces both high and low pulses. These pulses change the motor's speed. A microcontroller is employed to generate these pulses. Because a microcontroller is utilised, modifying the duty cycles time period in the software to set the speed ranges as needed is simple. Different buttons control different speed grades and directions.

The microcontroller in this project is from the 8051 family, and the programming was written in assembly language before being converted to hex using the micro vision Kiel software. The programme was burned into the microcontroller using the positron boot loader software. Microcontroller AT89S52, DC Motor, L293D Motor Driver IC, Push Buttons, PWM, Voltage Regulator (LM7805)

I. INTRODUCTION
DC machines are extremely significant in both industry and everyday life. DC machines have the distinct benefit of having easily adjustable properties. The goal of this paper is to use a microcontroller to create a four quadrant speed control system for a DC motor. The motor has four quadrants of operation: clockwise, counterclockwise, forward brake, and reverse brake. It also features a speed control option.Because electronic technology has advanced rapidly in recent years as a result of scientific and technological progress and social development, a DC motor is now widely used to achieve portability, low cost, energy efficiency, and noise limit, so the study of DC motor speed adjustable has more practical significance. The motor rotates in four directions.

The DC motor's four quadrant action is most suited for industries where motors are utilised and as required, as they may revolve clockwise, counter-clockwise, and apply brakes in both directions. In industrial applications, the motor is used for a specific operation.It must be stopped right away. In this case, the proposed system is an excellent front brake andIts integrated features include reverse brake. As a result of the instantaneous brake in both directions, placing a temporary reverse voltage across a running motor and controlling the motor's speed PWM pulses generated by the microcontroller can be used to do this.

II. LITERATURE SURVEY
The goal of the project is to create a four-quadrant speed control system for a DC motor. It is same as the ourproject but difference only in we are used in our project microcontroller 8051 and those are used in Arduino. but both project work as same The motor has four quadrants of operation: clockwise, counterclockwise, forwardbrake, and reverse brake. It also features a speed control option. The DC motor's four-quadrant functioning is best suited for industries where motors are used according to need. They can revolve in both clockwise and counterclockwise orientations, and brakes can be applied instantly in both directions. When performing a certain activity in an industrial setting, the motor must be stopped promptly. In this situation, the proposed system is ideal because it includes both forward and reverse brakes.When you apply a reverse, you get an instantaneous brake in both directions.
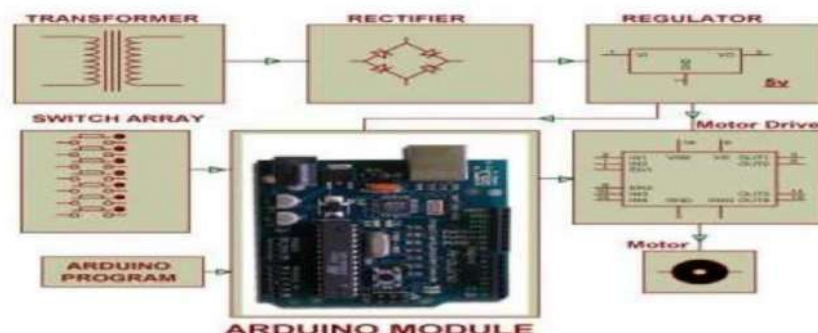
FEATURE EXTRACTION OF THERMAL IMAGES FOR FRUIT (BANANA) CONTAMINATION

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ABSTRACT
Entire world is accentuated on inanition health certainty and food safety. Mostly, for fruit ripening the fruit seller uses calcium carbide and for human body the calcium carbide is exceptionally dangerous as it accommodates the phosphorous and arsenic traces. In many countries it is prohibited but in Pakistan, India, Nepal, and Bangladesh and in another country it is directly used. Quality assessment of banana fruit can be concluded by either human inspectors or instrumental tools. This paper presents a method of Thermal Imaging Technology for detection of banana fruit whether it is ripened by calcium carbide or naturally ripened. Thermal imaging is a technology that creates analyzes images by detecting heat radiating from an object. Temperature can be sensed using themaCAM E45 with thermal emissivity and temperature reflectance of 0.5 ℃ with temperature range -20℃ to -100℃. This paper also presents image preprocessing, image segmentation and feature extraction steps for processing of an image. For classifying these images the Neural Network is used.

Keywords: Thermal Image; Banana Fruit; Neural Network; Feature Extraction; Segmentation.

INTRODUCTION
In the world bananas are the forth almost essential crops, India is the superior country for banana manufacturer. For food artifacts of high grade with increased assumptions and welfare standards, the requirement for correct, fast and equitable grade resolution of these attributes in food artifacts ongoing to grow [1]. Presently the fruits bananas are intentionally by chemicals being contaminated effecting health hazards. Randomly Toxic chemicals are used to ripen, grow and make banana fruits which act smooth fresher or last longer, especially during off season. Among the pretreatments, those are mainly resulted for banana fruits deliberated acceptance for best purchaser and ease better marketing, is synthetic banana fruit ripening [2].

The fruit seller of banana uses Calcium carbide for fruits ripening process. For human body the calcium carbide is really dangerous as it includes the arsenic and phosphorus traces. In numerous country of the world the calcium carbide is prohibited, but in India, Pakistan, Nepal, and Bangladesh it is directly used. Thus there is the short-term and long-term possibility of health effects eating banana fruits directly which are persuade to ripen. Calcium carbide has innumerable uses in steel industries, agriculture and chemical. It is colorless when unadulterated, but grayish-white in color otherwise, small like-garlic fragrance. Undiscriminating pesticides on dissimilar variety of fruits conduct to effects of poisonous. Calcium carbide is commonly known as masala, and ripening agent use it, where as the use of calcium carbide is banned in so much countries. When calcium carbide is pure then it is color-less otherwise it is black grayish-white in color. When it reacts with water, cacl2 provides acetylene gas those are analogues of ethylene and ripening process is done in quickness.

In different places the fruits are sent which requires many days either in refrigerated transportation or in ordinary. Before retailing at the destination the fruits are ripened. Use of calcium carbide for ripening process takes less time for fast ripening. The fruit seller uses Calcium carbide for ripening the banana fruit by wrapping the tiny quantity of CaCl2 in packet of paper, and put that packet near the fruit or in fruits box. Whenever the chemical reaction takes place the banana fruit changes its upper surface as well as the test of the banana. The banana fruit which is ripened artificially presents the outer skin as yellow but inside tissue will not be ripe and remains raw and green. As the calcium carbide uses on raw fruit, the chemical amount required for fruit ripening has increased.

Identification of Calcium Carbide Ripened Fruits
The fruits whose outside looks are attractive may not be good for health and also the fruits which has the same color, for example when there is a bunch of bananas and all bananas having same color in those bunch then they are more likely an artificially ripened fruits.

As we discussed in above, the chemical is used for artificially ripening the fruit. The banana fruits which are ripened by naturally has not similar color means not the totally the yellow color either they have some yellow and green bananas. Likewise when papaya and mango are totally orange/ yellow, and also tomatoes are red then CaCl2 have been used. Similarly, for banana if stem of banana is dark green and all remaining body of banana are yellow then bananas can be identified whether it is ripened by natural or by an artificial.

Calcium carbide is indiscriminately used in partially to another advance practice of influencing fruit ripening like the banana fruits dipped in a solution of subjection of fruits to ethylene gas or the solution of

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PARALINGUISTICS – A KEY FOR THE AUDIENCE FULLY UNDERSTAND THE ESSENCE OF SPEECH AND CONVERSATION

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ABSTRACT

This article examines Paralinguistics (the voice pitch, voice tone and the rhythm of the speech) which is the most often responsible for "not what you say, but the way you say." It also studies the role of Paralanguage for revealing emotions and the role of language and body language for sharing ideas, conveying information and the people's perceptions and persuasion. The study involves fieldwork of inspecting the speech and conversation of 40 pairs of engineering students. The findings are that people generally use non-verbal communication and apply a combination of paralanguage with language when they need to express their emotions and share pleasure but when they want to express the factual messages in accurate form, only use the words. The research concludes that language, body language and paralinguistics work together in sharing ideas, thoughts and information but paralinguistics is the best one to express a high degree of emotions and to bring people's sentiments out.

Keywords: Paralinguistics, speech, conversations, emotions, perception, persuasion

I. INTRODUCTION

In the process of speech, our voice is our trade mark that assigns extra life while delivering a speech and adds a human touch to the words. It is said that the words are just words, they do not state any meanings but the speaker's voice goes with language and uses Paralinguistics (the non-verbal cues: the voice pitch, voice tone and the rhythm of the speech) to reveal emotion, attitudes, status, personality, etc. Non-verbal communication involves direct communication not exclusively relying on written or spoken words (Berry, 2010; Rimondini, 2012). Paralinguistics reveals feelings of meaning and improves English fluency and accuracy and communication skills more effectively which are the most important requirements in the present era from the learning arena to excel in all professions. Keep on excelling as there is no perfection in the world.

II. AIMS

The objective of the research is as follows:

- Analyse the aspects of communication and how they work together to interpret language

- Study how the paralinguistics helps express the speaker's attitude and reveal emotion, attitudes, status, personality

- Examine how the paralinguistics opens up paths to make the audience fully understand the essence of speech and conversation

- Identify how paralinguistics help to attain good and proper results in communication

- Ignite the learners' interest in enhancing paralinguistics to give a better presentation

III. LITERATURE REVIEW

To complete and achieve the goals of this work, it referred to many research works, books and websites and explored to worldwide things of the following:

- ✓ Language is the use of words to convey information and present meaningful data to different people (Phifer, 2007) but Non-Verbal Communication (NVC) is used to show the way people feel at a given point in time (Littlejohn & Foss, 2010; Wood, 2009).

- ✓ Language, Paralanguage and Body language complement each other in order to provide meaningful communication (Zimmerman & Uecke, 2012).

- ✓ To present or convey various understandable messages and the modification of voices, the components of paralanguage such as non-verbal voice qualities, voice modifiers and independent utterances are used and they are produced by various parts of the body (Poyatos, 2012; Wilson, 2011).

- ✓ Through conventional dialogue and speech of a language, information is carried out from one person to another in mutually intelligible dialect (Perkins, 2010).

DESIGN AND FABRICATION OF ELECTRIC FORKLIFT

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ABSTRACT

In today life there is wide of forklifts variety of forklifts from the large heavy loadings trucks to the one that works among narrow aisles forklifts have becomes one of basics transportation tools we use in our lives with all the forklifts in existence we find that there are some improvement that can be to bring forklifts to the better performance. We describe forklift powered by an electric motor instead of the IC engine using rechargeable batteries the main objective of this project is to design electrically powered forklift for material handling in industrial warehouses and workshops. Nowadays in industries, the forklift operates on an IC engine for transportation and hydraulic system for lifting and lowering of materials. Due to this mode of operation, there are many adverse environmental impacts such as emission of carbon dioxide and leakage of hydraulic fluid. Thus, this project aim to making the electric system into a forklift to make it electrically powered which lift to 1 ton kg and elevate up to 8 feet.

Keyword: Forklift, Heavy Loads, Transportation, I.C engine, Industrial Warehouse, Environment, Electrically Powered.

I. INTRODUCTION

In general the forklift can be defined as a tool capable of lifting hundreds of kilograms. A forklift is a vehicle similar to a small truck that has two metal forks on the front used to lift cargo. The forklift operator drives the forklift forward until the forks push under the cargo, and can then lift the cargo several feet in the air by operating the forks. The forks, also known as blades or tines, are usually made out of steel and can lift up to a few tons. Forklifts are either powered by gasoline, propane, or electricity. Electric forklifts relay on batteries to operate. Gasoline or propane forklifts are sometimes stronger or faster than electric forklifts, but they are more difficult to maintain, and fuel can be costly. Electric forklifts are great for warehouse use because they do not give off noxious fumes like gas powered machines do. Forklifts are most often used in warehouses, but some are meant to be used outdoors. The vast majority of rough terrain forklifts operate on gasoline, but some use diesel or natural gas. Rough terrain forklifts have the highest lifting capacity of all forklifts and heavy duty tires (like those found on trucks), making it possible to drive them on uneven surfaces outdoors. Forklifts have revolutionized warehouse work. They made it possible for one person to move thousands of pounds at once. Well-maintained and safely operated forklifts make lifting and transporting cargo infinitely easier. This is the general description of a normal forklift truck. To enhances the technology further, this prototype module is constructed with remote technology, there by the operator can walk along with the forklift for better visibility & the container can be placed accurately (precision position). This increases the safety of the operator.

II. LITERATURE REVIEW

A. Battery Operated Forklift Vehicle.
Dr.V.R.Gandhewar1, Kalyani R. Bhokare2, Chirag D. Pande3,Vaibhav G. Mali4, Ganesh V. Badaki5 Assistant Professor1, BE Student [2, 3, 4, 5] Department of Mechanical Jawaharlal Darda Institute of Engineering and Technology, Yavatmal, Maharashtra, India.

A forklift truck is a powered industrial truck used to lift and transport. This vehicle is self-drive by the used of battery power and the lifting mechanism is also runs on battery power with the help of lead screw mechanism. There are already many types of forklift conveyer available since ancient time. But our aim is to design forklift conveyer pollution free by using battery and more efficient lifting by using lead screw The project work "Battery operated forklift" is aimed to control through lead screw. The main advantage of using this technology is to increase the safety of operator by operating the forklift from certain distance. This increases the efficiency of the productivity, because human errors due to the poor visibility can be minimized.

B. Design and Analysis of Mechanical Forklift
Khebude Karan N*, (B.E, Dept. of Mechanical Engineering, Sanjeevan Engineering & Technology Institute, Panhala, MH,India

The Design Calculations of Fork are compared with Structural Analysis Report. The Lifting of Fork makes the Deformation and bending of fork. Due to selection of forklift material as mild steel it has increased the

REMOTE CONTROLLED ROVER USING ROCKER BOGIE MECHANISM

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ABSTRACT

The rocker-bogie suspension system has robust capabilities to deal with uneven terrain becauseof it's distributing the payload over its six wheels uniformly. Most of the cover designs have been developed for Mars and Moon surface in order to understand the geological history of thesoil and rocks. Exploration operations need high speed and long distance traversal in a short mission period due to environmental effects, climate and communication restrictions In this research, a new suspension mechanism has been designed and its kinematic analysis results were discussed. One of the major shortcomings of current Rocker-Bogie rovers is that they areslow. In our project, we have focused on six-wheeled rocker bogie suspension system design which has advantage of linear bogie motion in protecting the whole system from getting rollovers during high- speed operations. This has greatly increased the reliability of structure on rough terrains and also enables its higher speed exploration with same obstacle height capacity as twice the diameter of wheel. The project aims to improve some basic working so that it can perform in a better way.

I. INTRODUCTION

The rocker-bogie suspension system was initially used for the Mars Rover and is currently NASA's preferred design for rover wheel suspension. The perfectly designed wheel suspensionallows the vehicle to travel over very uneven or rough terrain and even proceed over obstacles.This rocker suspension is a type of mechanism that allows a six-wheel vehicle to constantly keep all six wheels in contact with a surface when driving on uneven terrain surfaces. The rocker bogie mechanism describes a method of driving a rover so that it can progressively stepover most obstacles rather than impacting and climbing over them. Most of the benefits of thismethod can be achieved without mechanical modification to the same designs – only a changein control structure. Some machine changes are suggested to gather the maximum profit and togreatly increase the effective speed of future rovers. The rocker bogie mechanism is one of themost popular suspension mechanisms, which was initially designed for space travel vehicles having its own deep history embedded in its development.

II. PROBLEM DEFINITION

The Rocker-Bogie Mobility System was designed to be used at slow speeds. It is capable of overcoming obstacles that are on the order of size of a wheel and also use for survilliance. However, when surmounting a sizeable obstacle, the vehicles motion effectively stops whilethe front wheel climbs the obstacle. The rocker-bogie suspension system has robust capabilities to deal with uneven terrain because of its distributing of the payload over its six wheels uniformly, while there is one major shortcoming to high- speed traversal over the planar terrain. Here we aim to overcome the above mentioned issues.

III. LITERATURE SURVEY

1) Para Bimal Saraiya "Design of Rocker Bogie Mechanism" The proposed modification increases in the stability margin and proved with valuable and profitable contrasting the SSFmetric with the 3D model simulations done on AUTOCAD. Study of the existing models of rocker bogie suspension enabled rovers and tried to manufacture a similar kind with the material available.

2) Roshan Sharma, Rajesh Jaiswal, Ankit Yadav, Subash Roy "Design and Fabrication of Rocker Bogie Mechanism Automated Combat Rover" The proposed paper presents a special design in seeking after of developing the rocker-bogie portability framework in customary overwhelming stacking vehicle conduct while high-pace traversal is required and to expand the battery effectiveness and working time of the Rover, which become made achievable theuse of the autonomous directional control machine which utilizes least power modules organized upon the working condition and circumstance.

3j Rajat Murambikar, Vinay Omase, Vivek Nayak, Karan Patil, Prof. Yogesh Mahulkar "Design and Fabrication of Rocker Bogie Mechanism using Solar Energy" Infused solar energy generation, sun tracking and design characteristics to create a modern, more updated and less sophisticated version of Rocker Bogie Rover. Tested its abilities and finally reviewed and updated calculations.

4) Abhisek Verma, Chandrajeet, Yadav, Bandana, Singh, Arpit, Gupta, Jaya, Mishra, Abhishek Saxena "Design of Rocker-Bogie Mechanism". The proposed paper produces a novel design in pursue of increasing the rocker-

DESIGN AND FABRICATION OF DYNAMIC WHEELCHAIR

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ABSTRACT

The research proposes a solution to implement the purpose of this project was to manufacture the multipurpose wheelchair in low cost which promote mobility and enhance the quality of life for the people who have difficulties in walking. This product make the users to lift the patient directly from the bed which help to reduce the pressure injuries. Along with the reducing the cost of product, we also aim to minimizing the pressure injuries and fall. Other specialty of the multipurpose wheelchair is, we can use it on indoor as well outdoor. Then after the completion of project we have successfully achieved what we set out to bring in wheelchair. We made a better multipurpose wheel chair with all safety measures, low cost and high quality. It provide a safe transferring of patients from one place to another place. The procedure that is used for transferring patients is very simple and unique

Keywords: Patient, Wheelchair, Multipurpose wheelchair, Smart Wheel chair

I. INTRODUCTION

A wheelchair is a chair with wheels, used when walking is difficult or impossible due to illness, injury, problems related to old age, or disability. These can include spinal cord injuries (paraplegia, hemiplegia, and quadriplegia), cerebral palsy, brain injury, osteogenesis imperfecta, motor neurone disease, multiple sclerosis, muscular dystrophy, spina bifida, and more.

Wheelchairs come in a wide variety of formats to meet the specific needs of their users. They may include specialized seating adaptions, individualized controls, and may be specific to particular activities, as seen with sports wheelchairs and beach wheelchairs. The most widely recognized distinction is between motorized wheelchairs, where propulsion is provided by batteries and electric motors, and manual wheelchairs, where the propulsive force is provided either by the wheelchair user/occupant pushing the wheelchair by hand ("self-propelled"), by an attendant pushing from the rear using the handle(s), or by an attendant pushing from the side use a handle attachment.A wheelchair assists people to become more mobile and independent. There are many different types of wheelchairs that are used for various reasons. It is important to understand the limitations and safe operation of whatever wheelchair you choose.

A wheelchair is the catalyst to increased independence and social integration, but it is not an end in itself. Studies have shown that assistive technologies including wheelchairs, when appropriate to the user and the user's environment, have a significant impact on the level of participation which people with disabilities are able to achieve and when provided through a supportive service have been reported to reduce the time and physical burden for caregivers. The use of mobility devices, in particular, creates opportunities for education and work, and contributes to improved health and quality of life but may also have an impact on the prevention of falls, injuries, further impairments and premature death. Investment in provision of mobility devices can reduce health-care costs and economic vulnerability, and increase productivity and quality of life.

II. LITERATURE SURVEY

Akhil C, Muhammed Irfan Et.Al. (2021). Even if there is highly advanced equipments, it is highly expensive beyond common patients can't afford. So we have come up electrical and manual wheelchair available in the international market. The wheelchair will make shifting of patients to a far better way. [1]

R.Hari Krishnan Et.Al. (2019) . The study was Based on the conceptual design, a manual and a powered self-transfer device have been developed that can be used as an attachment to a manual and powered wheelchair respectively. [2]

Kedar Sukerkar, Darshitkumar Suratwala, Et.Al. (2018). There are several issues faced by the manufacturers and researchers which needs to be addressed so that, smart wheelchair becomes a commercial success and be widely used. Smart wheelchairs have great scope in future and technological advancement in the field of robotics and sensors will lead to commercial success as well. [3]

Ninad M. Borkar, Saurabh A. Apte, et.al. (2016). The study was intended to develop a concept of wheelchair convertible stretcher with the motivation of saving space and prevent exertion of patient as well as by making sure that the patient does not get hurt. Our study shows that it is possible to save 50% space by using wheelchair convertible stretcher rather than using wheelchair and stretcher separately. [4]

DESIGN AND FABRICATION OF COMPOSTMACHINE

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ABSTRACT

Organic waste and Food waste is a worldwide problem, is cost to be disposed and nothing is gained from it on the contrary, it causes the fission of harmful gas such as methane. Vegetable waste with high moisture content and readily biodegradable nature is causing major environmental problems due to improper waste management practices The Design and Fabrication of Compost Machine in India. So, composting could be considered the best alternative for the treatment of these organic fractions. Composting has proven to be a valid solution to this problem. The objectives of this project are to design a composting machine with certain parameters for the design, Process time, and easy, odourless and power saving. The designed food waste decomposition system is designed for rapid composting performance. It can be used for households, restaurants, hotels, schools, apartment buildings, communities, offices and cafeterias depending on the capacity of the machine. The system ploys high temperature, microorganisms to decompose food waste and organic matter. The prototype was able to decompose organic waste in a time frame of 38 to 50 hours with minimum harmful gases emissions and odours.

Keywords: Vegetable waste, decomposition, recycling process, solid waste management.

I. INTRODUCTION

The designed machine is a fully automatic and highly compact composting machine, which uses special microorganisms to break down and decompose all kinds of organic waste into compost within 24 hours with a volume reduction of 85- 90There also lies an issue in transporting the wastes to the recycling plants, wherein a huge amount of effort, time and money needs to be put in for transporting the wastes which are clustered and are not in uniform shape or size. The waste materials need to be made into a uniform shape for easy and effective transportation. This paper aims in producing a mechanical crusher which would be a helping hand for waste management. The machine has U-shaped composting tank, with a crusher, heater, mixing blades. These materials if carried just like that would occupy more space and would require huge containers and transportation cost becomes an issue. These materials need to be arranged properly to increase the carrying capacity of the vehicle and as the organic waste being an indefinite shape needs to me made into uniform shape and size for easy decomposed. This is where the mechanical crusher comes into play. The crusher would crush the organic waste thus reducing the gap between them and make them to uniform size and shape so that the materials can be baled up according to the size of the crushing bin. The uniform size and shape of the materials can be obtained by providing a bin onto which the material is to be crushed. The crusher is designed to operate by both mechanical and electrical means. This crusher is designed in such a way that it is simple to construct and would require minimum effort for operating in both mechanical and electrical types of operation.

II. LITERATURE REVIEW

[1] Vivien Arief Wardhany et.al (2019)
Has studied in their paper named "Smart Chopper and Monitering System for Composting Garbage" concluded the results of research and testing that have been carried out, it can be concluded, by combining the technology, we can reduce the garbage pollution by utilize the chopper machine and monitored them. The garbage also can provide the benefit by recycling it into the compost, so it will help the environment by giving the supplement to the soil.

[2] Mansi Pare et.al (2019)
Has studied in their paper named "Design of Organic Compost Machine "concluded the designed machine is a fully automatic and highly compact composting machine, which uses special microorganisms to break down and decompose all kinds of organic waste into compost within 24 hrs with a volume reduction of 85-90%. The entire process is natural and biological. The outcome of this report is the basic knowledge of working of heavy-duty machines and the criteria behind their working in a brief manner**.**

[3] Mustafa Elalami et.al (2019)
Has studied in their paper named "Design and Test of the Smart Composter Controlled By SENSORS "concluded the design and the realization of a new composter destined to convert the residues food and all type of organic wastes in situ (to eliminate transport charges) to obtain a mature compost with high quality in 4 weeks.

DESIGN OF SAND BLASTING MACHINE

Bhavesh Waghmare[1], Hanish Bari[2], Aadil Khan[3], Dhirendra Patil[4] and Iqbal Mansuri[5]

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ABSTRACT

When a metal is exposed to atmosphere, it gets corroded by atmospheric air. To overcome this sand blasting process are used. When machining leaves the sharp burrs or edges on an object, sandblasting can smooth it until it is safe to handle. Sand blasting is a method used to clean, polish or strengthen metal with the help of abrasive material. Sand blasting is used in almost every industry that uses metal, including aerospace, automotive, construction, shipbuilding, rail, and many others. Sand blasting machines uses abrasive material like steel grit, glass bead, sand etc. The blast media is pneumatically accelerated by compressed air and projected by nozzles onto the component to roughen a smooth surface, shape a surface or remove surface contaminants. For the application of sand blasting process on a big component, which may require secondary surface treatment, which is carried out in a confined space, so many times we have to shift jobs to confined room. Due to this material handling cost increases. To avoid this, there is need of design of portable type of sand blasting machine.

Keywords: Sand Blasting, Abrasive Material, Surface Treatment Process, Material Handling Cost, Portable.

I. INTRODUCTION

Sand Blasting is a surface treatment process using high velocity steel abrasive. Sand blasting is used to obtain excellent cleaning and surface preparation for secondary finishing operations.

- The cleaning of iron, steel, non-cast parts, forgings, etc.

- Mechanical cleaning of sheets, rods, coils, wire, etc.

- Shot peening to alter mechanical properties (increasing resistance to fatigue for springs, gears, etc.)

Sandblasting is also known as abrasive blasting. Basically, it is the process of bombarding a stream of abrasive material to the surface which we want to clean. The sandblasting operation is done with high pressure to smooth a rough surface. There are several types of sandblasting process like Soda blasting, Shot blasting and Bead blasting. Sandblasting is an extremely useful procedure in a welding applications and industries for removing excess weldments as well as for cleaning the surface. Whether a material needs to be cleaned, deburred, prepped for powder-coating, de-rusted, shot-peened or otherwise just have its paint removed, sandblasting is the process for the job. These machines are mainly useful in the auto industry, in ship and rail yards and in a range of industrial applications. Certain degrees of skill and safety training are required to use the sandblaster as abrasive material may cause some injuries. The sand blasting machine which was used in the industry are big in size and cannot be mobile so our main objective of our project is to make the machine mobile and less space occupying machine with reduction in weight, also reducing the cost of machine to make it budget friendly for small scale industries too.

II. LITERATURE REVIEW

Rupesh Narkhede Et.Al. (2019) [1], The study shows that the portable sand blasting machine is very economical & useful for heavy fabrication company. Big size products require sand blasting process before painting. The sand blasting machine are generally immovable and used in confined space, so every time we need to shift such big products in confined space of blasting after welding small components, this increases the material handling cost. After using portable sand blasting machine, we can do blasting on small components which we welded after first blasting process; this can be done on same location where we can manufacture, therefore we do not need to shift same again to confined space of blasting room. In this way we can save handling time as well as handling cost also. It helps to reduce human fatigue by considering handling process.

D Dudek Et.Al. (2018) [2], The study shows that the surface roughness after the abrasive blasting process is undetermined that is random. As a result of the treatment with low granulation grains, an even distribution of roughness on the work surface is obtained. The using larger sizes of abrasive grains may affect smoothness of surface. The surface after blasting is more susceptible to corrosion, hence the abrasive slurry should contain corrosion inhibitors.

GENERATION OF POWER BY WASTE HEAT OF AUTOMOBILE

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ABSTRACT

More than 30% of an automobile's engine energy is wasted throughexhaust gases and in form of heat. So there is a scope to develop a system to utilize this waste heat and generate power. This power can be further used to charge mobiles, power banks or the automobile's battery which in turn will reduce the consumption of fuel.

I. INTRODUCTION

Automobile industry is one of the world's most important economic sectors. Automobiles use IC engines, which have huge amount of energy The loss up to 30% in the form of heat. In the recent times, scientists have tried and refined the automobile technology appreciably, but could not control the loss in IC engine in the form of waste heat. This project focuses its attention not to control the waste heat in IC engine, rather it focuses on trapping the waste heat to generate electricity by using a suitable device called thermoelectric generator (TEC). The temperature of the 'exhaust bend pipe surface' through which exhaust gases are flowing, ranges between 200 °C to 300°C,by attaching a copper plate to this bend pipe hot junction of the thermoelectric module is made, other cold junction is created by aluminum heat sink. As this potential difference is created, voltage is produced using seebeck effect. The produced voltage is further amplified by usingbooster circuit and is tested across the load. Tzer-Ming Jenget. al. (2016) have carried out a study on Design, Manufacture and Performance as between TEC output voltage and generated power/efficiency.

II. LITERATURE REVIEW

A.Rmit University, Bundoora, Victoria, Australia Fujikura Ltd, Kiba, Tokyo, Japan. The modelled system is predicted to produce approximately 1 kW. The Honda system used a simple design of a thin flat rectangular box with TECs placed on the top and bottom surfaces. Liquid cooling was used in this design. The system consisted of 32 30 mm × 30 mm TECs and produced a maximum of approximately 500 W. The claimed fuel consumption reduction is 3%.

B.Tzer-Ming Jeng and Sheng-Chung Tzeng Department of Mechanical Engineering, Chienkuo Technology University, Changhua County, 500, Taiwan. This study constructed an efficiency testing platform for the thermoelectric conversion system for recovering waste heat of real vehicles. Using a Toyota 2200

c.c. vehicle with four-cylinder four-cycle engine as the test vehicle, it successfully measured the relation of engine speed of real vehicle and external cooling air flow to the engine exhaust temperature and flow rate, and discussed the influence of the vehicle's engine speed and external cooling air flow on the energy output of the waste heat recovering thermoelectric conversion system. This study found that the energy output increases with the engine speed.

C. T. Kashid, S. H. Barhatte and D. S. Ghodake. Results show that voltage, current, power developed and efficiency of the system increase with the increase in engine speed & mass flow rate of exhaust gas. At the engine speed of 3736 rpm, the power generated is 13.106W and efficiency of the system is 5.28%.

III. METHODOLODY
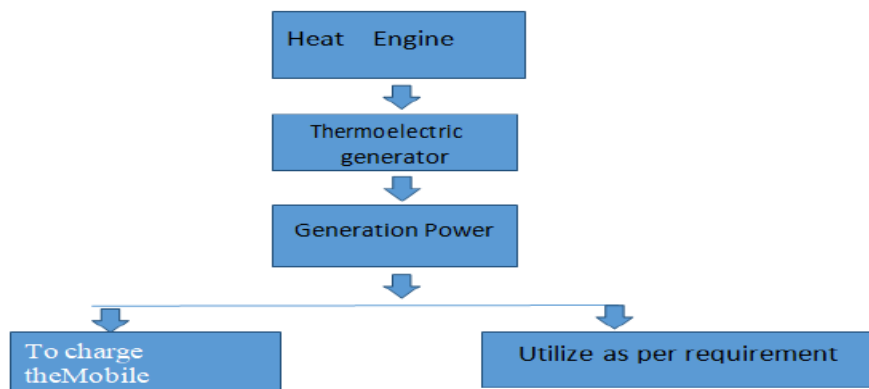
SPRING LOADED KNEE BRACES USING 3DMANUFACTURING

Abdul Gujarati Rehman, Jha Keshav, Shaikh Mafizul Hassan and Siddique Faiz Mohammed
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ABSTRACT

Recent research on exoskeletons and braces has examined the ways of improving flexibility, wear ability or overall weight-reduction. Part of the challenge arises from the significant loading requirements, while the other part comes from the inflexibilities associated with traditional (rigid link-moving joint) system architectures. Compliant mechanisms offer a class of articulated multibody systems that allow creation of lightweight yet adjustable-stiffness solutions for exoskeletons and braces, which we study further. In particular, we will introduce the parallel coupled compliant plate (PCCP) mechanism and pennate elastic band (PEB) spring architecture as potential candidates for brace development. PCCP/PEB system provides adjustable passive flexibility and selective stiffness to the user with respect to posture of knee joint, without need for mediation by active Devices and even active sensors. In addition to the passive mode of operation of the PCCP/PEB system, a semi-active design variant is also explored. In this semi-active design, structural stiffness re-configurability is exploited to allow for changes of preload of the PEB spring to provide force and torque customization capability. The systematic study of both aspects (passive and semi-active) upon the performance of PCCP/PEB system is verified by a lightweight 3D printed physical brace prototype within a ground truth (optical motion tracking and six degrees-of-freedom (6DOF) force transducer) measurement framework.

Keywords: Knee osteoarthritis, braces, walking, knee arthroplasty, 3D printing, CAD.

I. INTRODUCTION

A knee brace is one tool in managing the discomfort of knee osteoarthritis. A brace might help reduce pain by shifting your weight off the most damaged portion of your knee. Wearing a brace can improve your ability to get around and help you walk farther comfortably. Osteoarthritis is a complex condition involving the entire joint. It's mainly known as a weasand-tear type of arthritis that commonly affects the knees of older people. The disease frequently affects one side of your knee more than the other. This unequal damage can cause your knee to align imperfectly (malalignment), which can make you look knock-kneed or bowlegged. As the damage progresses, this malalignment worsens. A knee brace can take pressure off the part of your joint most affected by osteoarthritis and help relieve pain. If your knee feels like it might buckle when you put weight on it, a knee brace can also help you stand and move around with more confidence.

Additive manufacturing (AM) is the industrial production name for 3D printing, a computer-controlled process that creates three dimensional objects by depositing materials, usually in layers. This revolutionary method for creating 3D models with the use of inkjet technology saves time and cost by eliminating the need to design print and glue together separate model parts. Creating a complete model in a single process is possible using 3D printing. The basic principles include material cartridges, the flexibility of output, and translation of code into the visible pattern. JD Printers are machines that produce physical 3D models from digital data by printing layer by layer. It can make physical models of objects designed with a CAD program or scanned with a 3D Scanner. It is used in a variety of industries. In most the industries such as manufacturing aerospace, automobile, jewellery, footwear industrial design, architecture, engineering and construction, dental and medical industries, education and consumer products, additive manufacturing is used for prototyping of various models for research as well as demonstrations of end products.

OBJECTIVES

II. RESEARCH & METHODOLOGY

- To create a Knee Brace that can be affordable for underprivileged people, especially the senior citizens that live in Old Age Homes.

- To provide the option of customization on the basis of shape, size & load.

- To use additive manufacturing (3D Printing) technology so that it can be manufactured in small quantities. Use additive manufacturing so that customization of knee braces can be done in much cheaper price than available in market.

- To create the awareness of Knee Arthritis among the people.

DESIGN, ANALYSIS AND FABRICATION OFHUBLESS CYCLE

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ABSTRACT
The cycle is the common mode of transport. Bicycle can be driven by all kind of individuals like children and seniorcitizen. But the old school sort of wheel which is being utilized for centuries has been given a unused plan which progresses the aesthetics of the cycle. In old bicycle the effort required to ride the bicycle is more. In thehubless cycle the gear transmission is provided which reduces the riders effort to pedal and ride the bicycle. In normal cycle, the directing (i.e) the handle bar is joined to the center of wheel. But in hubless wheel, the handle bar is attached to the wheel edge which increments steering efficiency. The cycle with ordinary look (i.e) cycle with spoked wheel (center wheels)is continuously being used everywhere and an substitute for the look isn't considered in plan. As it were the outlines and chassis of the cycle has been altered all through the ages. The wheel has remained the same. So considering it as the most objective of our venture, the hubless cycle is designed.

I. INTODUCTION

In popular we recognize that the cycle run on chain power mechanism and it is ideal and famous manner of transportation in ruralas well as city area also. Due to the fact preliminary price may be very low, no gasoline is needed to run the bicycle. There is nothreat to pollute the environment because of no use of fuel. But the bicycle used for many years now change only in looks of theframeof bicycle. In the traditional bicycle the rider needs to put more effort to ride because of the spokes attached to the rim of the cycle. When the rider pedals the sprocket rotates because of the chain and the spokes attached to the rim were forcefully rotated which causes the rider to put more effort to ride the bicycle.

So considering it as the most objective of our venture, the hubless cycle is designed. In the hubless bicycle the rear rim have a internal gear mounted on it and the hub will behaving the spur gear mounted on it. Because of the use of gears for transmission the rider will be needing less effort to ride the bicycle and as the spokes are removed it also give a new and stunning look to the bicycle.

II. LITERATURE REVIEW

Algat V.V., Bhalerao R.S., Autade K.N., Shimpi G.B., Prof. Ghodake A.P., explained in journal "Hubless Wheel Bicycle With Gear Train Drive Mechanism" states that "The construction of Hubless wheel bicycle with gear train drive mechanism is designed to convert the human muscle power through pedalling work in to the mechanical work The systemis assembled with the combination of pedals, shafts, one small size alloy wheel and one large size Hubless wheel which is function as driving wheel. The pedal and shaft are receiving the human effort and convert in to rotational mechanical motion. This rotational motion is transmitted up to the driving wheel via the spur gear drive train. The gear drive train is the combination of four stages of gear pair. These gear pairs not only transmit the power but also improve the gear ratio step by step. The gears and pinions of drive train are fixing with the bicycle body by using deep groove ball bearings. The last spur gear in the gear train is coupled withthe driving wheel through the Hubless mechanism which also performs the holding function of driving wheel. The front wheel issmall in size as compared to drive wheel and it only perform the system balancing function without actually participate in driving and driven mechanism. This system has ability to reduce the fatigue on bicycle rider by improving the power transmission efficiency and by extending the maximum limit of bicycle speed."

Bannetross said that the inventive device includes a frame having a seat structure and handle bar, rear bracket having rear bearings within that rotatably engages a rear wheel, a front bracket having front bearings within that rotatably engages a front wheel, and a drive train that engages the rear wheel for driving the rear wheel. The rear rim of the rear wheel includes a rear groove that

III. Fabrication of Hubless Wheel
1. Rear Wheel
The internal gear is mounted internally on the rim of cycle through welding. The spur gear is mounted on the hub through weldingand the sprocket is also mounted on the hub for transmission when the pedalling starts the chain rotates the fly wheel mounted onthe hub and the spur gear also rotates as it is also mounted on the hub. When spur gear rotates it meshes with the internal gear mounted on the rim and forces the rim to rotate and then the bicycle will be in motion.

ANALYSIS OF COMBUSTION AND EMISSION PARAMETER OF CI ENGINE USING WASTE TRANSFORMER OIL AS ALTERNATIVE FUEL

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ABSTRACT

This project gives idea for the effective use of Waste Transformer Oil as an alternate option for petroleum based fuels. Rapid depletion of fossil fuels, increasing pollution and increasing prices of petroleum based fuels have given a base for the research of various fossil fuels. As we all know that, petroleum based fuels are limited in reserves, concentrated in certain regions of the world are shortening day by day. Huge amount of dollars are being invested in research of alternative fuels. Meanwhile, the disposal of waste products like waste transformer oil from different electric power stations from many electric transformers throughout the country is becoming increasingly complex. while biodiesel from certain vegetable oils like Jatropha, Karanja, Soyabean andRapeseed is acquiring much needed attention. The Waste Transformer Oil is a waste product which comes out from a electrical transformer is used for insulation and cooling purpose. This waste product can be used asansource of fuel for diesel engine applications. The WTO can be used after refining it by transesterification process or catalytic cracking process and then mixed with diesel fuel as an base fuel for evaluating different engineand emission parameters and to use it as an alternate source of fuel. The engine and fuel researchers are devoted to explore alternative fuels as the present world largely depends on petroleum fuel for generating power, vehicle movement and agriculture sectors. Price hike, limited reserve of petroleum oils and stringent emission regulation also forced researchers to find alternative fuels. In Bangladesh, there is limited petroleum reserve to meet the demand of the petroleum product and for this reason it is necessary to spend a lot of foreign currency for importing fuel every year. Recent price hike of petroleum oil incurs lots of money. Bangladesh imports most of the petroleumoils from Middle East. In this point of view, waste transformer oil (WTO) can be an alternative source for petroleum oils. WTO has significant physiochemical properties. WTO can meet a portion of our demand without any hesitation. There is a huge unused amount of transformer oil in Bangladesh which is rejected every year. This oilis not used for any other purpose. So, WTO is an important source for meeting the demand of diesel in Bangladesh.Bangladesh imports approximately 2.4 million ton diesel each year . It is well known that the transformer oil is used mainly in the electrical transformer for insulation purpose. Moreover, cooling is another purpose of using transformer oil in the electrical transformer while the transformer is running. Among various properties, one of the main properties of transformer oil is to sustain high temperature during operation. When an electrical transformer is in operation, the transformer oil is subject to mechanical and electrical resistance. For a certain period of time, it is recommended to check the electrical and chemical properties of the transformer oil. By using WTO, Bangladesh can reduce importing a huge amount of petroleum products from foreign countries. Our attention goes to the WTO. WTO results from the power generation and transmission station. At present 100 per cent transformer oil is not used in place of diesel fuel (DF) to run the engine rather blends of WTO and DF.

Keywords: Waste transformer oil, WTO characteristics, Diesel fuel

I. INTRODUCTION

The engine and fuel researchers are devoted to explore altermative fuels as the present world largely depends on petroleum fuel for generating power, vehicle movement and agriculture sectors. Price hike, limited reserve of petroleum oils and stringent emission regulation also forced researchers to find alternative fuels. In Bangladesh, there is limited petroleum reserve to meet the demand of the petroleum product and for this reason it is necessary to spenda lot of foreign currency for importing fuel every year. Recent price hike of petroleum oil incurs lots of money. Bangladesh imports most of the petroleum oils from Middle East. In this point of view, waste transformer oil (WTO) can be an alternative source for petroleum oils. WTO has significant physiochemical properties. WTO can meet a portion of our demand without any hesitation. There is a huge unused amount of transtormer oil in Bangladesh whichis rejected every year. This oil is not used for any other purpose. So, WTO is an important source for meeting the Demand of diesel in Bangladesh. Bangladesh imports approximately 2.4 million ton diesel each year [1]. It is well known that the transformer oil is used mainly in the electrical transformer for insulation purpose. Moreover, cooling is another purpose of using transformer oil in the electrical transformer while the transformer is running. Among various properties, one of the main properties of transformer oil is to sustain high temperature during operation. When an electrical transformer is in operation, the transformer oil is subject to mechanical and electrical resistance. For a certain

FOOT OPERATED WASHING MACHINE

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ABSTRACT

The foot operated washing machine is a huge innovation all by itself. Foot operated washing machine is especially designed for its use for washing laundry by means of foot application. Today, because of non-renewable energy cries out its basic need to use energy in another way or to save energy. This project involves the construction and use of the foot operated washing machine. The next pages in the paper include the constructions of foot operated washing machine, its raw material, its operation , benefits of the foot washing machine in terms of the actual electronic washing machine save time, water, electricity and not very expensive. His main expectation is exercises with the application of the foot to wash the cloths.

Keywords: foot operated, pedal, chain, cloths, washing, rinsing

I. INTRODUCTION

The project covers one of the daily activities of the washing clothes but solves many other problems with her as well. We wash our garments either by hand or using electric washing machines. Over the years, this has been a process that requires a lot of efforts and time. The project aims to solve the problem so many people have encountered in their daily lives. In rural areas and undeveloped countries, where electrical power is unavailable and expensive, electric washing machines become almost impractical. It uses a simple mechanism that utilizes a chain drive and converts human power into mechanical energy to wash cloth. The foot operated washing machine permits human beings to wash clothes in a more efficient manner with less effort and strain than using hand/manual washing.

The Project has the Following Objectives
1. Low-cost and low maintenance.

2. It should operate with less water.

3. It will be easy to repair when things go wrong.

4. Easy to operate and maintain as readily available parts.

6. Women do not have to be in contact with soapy water which may damage there hands.

5. Another way to reuse energy that we don't utilize during exercise.

LITERATURE REVIEW

A. Pedal Powered Washing Machine (PPWM)
By: Adarsh Ranjan, Kushagra Sharan and Sudeep Mazumdar

This project not only covers one of the daily household activities (laundry), but also solves many other problems related to it. We all wash by hand or use an electric washing machine. This project aims to solve the problems that many people face in their daily lives. In rural areas where electricity is not available and expensive, electric washing machines are almost impractical. The main goal is to provide the product with another way to wash clothes when there is no electricity .but this project has more Product and manufacturing cost. this also has intricate shape.it also require more maintenance due to more mechanical arrangements.

B. Design and Fabrication of Pedal Powered Washing Machine
By: Gaurang Bhatawadekar, Budye Salman, Nilesh Chiplunkar, Swapnil Devrukhakar, Singh Akashdeep Rajendra Mane

The pedal power washing machine is different from any other method of the cleaning device. The community may be reluctant to try a new machine. They have carry out a trial period in groups such as women's associations that are familiar with pedal drivers. they have achieved our goal of building a low-cost, manually operated pedal-operated washing machine that uses locally available materials to easily perform the required cleaning and rinsing functions.

C. Design and Analysis of a Pedal Operated Washing and Drying Machine
By: Hakizimana E*, Masengesho P, Cyusa O, Niyigena M

COMMON EFFLUENT TREATMENT (BY PHYTORID TECHNOLOGY)

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ABSTRACT
Constructed wetlands are artificial wastewater treatment system of shallow experimental tanks, ponds or channels that are planted with locally available wetland plants. They work on natural capacity of plants to treat wastewater from different sources. In view of rising concern about pollution of water bodies due to discharge of waste in them, it is necessary to initiate alternative thinking as conventional methods through STPs (Sewage treatment Plants) have had limited success. In recent years the application of specifically designed wetland based technology (popularly known as Phytorid technology) for treatment of wastewater- municipal, urban and agricultural, is becoming widely acceptable. It treats the wastewater in natural manner without the use of chemicals. In short, Phytorid technology is an improved wetland system for treatment of wastewater. The main objective of present research work is to provide and popularize a simple, feasible, practically sound, ecofriendly and cost effective technology for wastewater treatment. Phytorid technology is such a type of system, which reduces the impact of sewage and converts into useful water for gardening and irrigation purpose.

Keywords: Constructed wetland, wastewater treatment, locally available Phytorid plants species and Phytorid technology.

1-INTERODUCTION
The Earth is called the blue planet, since freshwater is a scarce resource available in earth. Only 2.5% of all water resources are fresh water, of the 2.5% which are freshwater, nearly 70% is not accessible, because it is bound in snow and ice, thus only 0.5% of the total water on earth is accessible for drinking and other fresh water uses. Primary water source Is polluted to a great extent through the discharge of harmful substances. It is estimated that every 1m3 of contaminated water once discharged into water bodies will contaminate further 8to10m3 of pure water. In addition to this, the effects of the globe warming has increase the water source in one side and scarcity in the other part in major uses such as agriculture. Population in India is growing by geometric proportion whereas food production is growing by arithmetic proportion. Rapid industrial development and increasing population is increasingly exerting pressure on limited natural resources. The population growth has not only increased the fresh water demand but also increased the volume of wastewater generated. Total waste water generated in India is 38255 MLD and 30% of it is treated by different means. Similarly in Maharashtra 26469 MLD wastewater is generated and 16% is treated, (CPCB, 2010).

When toxic substances enter a body of water, they will be dissolved, become suspended in water or get deposited on the bed of the water body. The resulting water pollution causes the quality of the water to deteriorate and affects aquatic ecosystem. Pollutants can also seep down and affect the ground water deposits. If waste water is left untreated in water source then there after it increases load on water treatment plant and thus increases cost of water treatment. Following are the impacts of emitting the untreated water in the water source: 1. Odour problems 2. Mosquito nuisance and breeding of insects 3. E-coli and other pathogenic micro-organisms can contaminate drinking water sources. 4. Spreading of communicable diseases like cholera, dengue, malaria, etc 5. Impact on bathing quality of rivers, beaches etc.

2- STATEMENT OF THE PROBLEMS
Problem concerning water sanitation stem from the rise in urban migration and the practice of discharging untreated wastewater. The uncontrolled growth in urban areas has made planning and expansion of water and sewage systems very difficult and expensive carry out. In addition, many of those moving to the city have low incomes, making it difficult to pay for any ware system upgrades. It is common practice to discharge untreated sewage directly into water bodies of water or put onto agricultural land, causing significant health and economic risks. Water-related diseases include dengue, filariasis, malaria, and yellow fever etc.

3-OBJECTIVES OF THE PROJECT
• To Survey the selected site

• To collect the waste water sample from these respective resources

• To perform physical test on waste water samples

• To collect the various plants species

SELF-ILLUMINATING ROAD

Jeevan Chandrakant Kadav[1], Chinar Rajesh Naik[2], Kaushik Dilip Naik[3] and Chaitanya Jayant Tambvekar[4] and Faiz Mohammad Khan[5]

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ABSTRACT

"The objective of this research was to develop a soy-based luminescent sealant for use on concrete surfaces. The luminescent sealant is a mixture of soy methyl ester polystyrene (SME 50 PS) and strontium aluminate; a phosphorescent powder that slowly luminesces after being excited by light. A test procedure was developed to quantify the magnitude and duration of the luminance of the coated concrete surface, which is key to evaluating the performance of the luminescent sealant. The luminescent sealant was excited in a consistent manner with a xenon lighting system that simulates sunlight, a photometer (light measuring instrument) that measures the luminance of the excited concrete surface, and a housing unit to prevent extraneous light from the surroundings to influence the test results. The results of the tests performed indicate that the luminescent surface emits light i.e Glows) for approximately 24 hours in a dark space after it was excited. It was found that larger particles of strontium aluminate luminesce for a longer time than smaller particles. The excited sealant's luminance was independent of time exposed to Light coming from the xenon lighting system.

The researchers introduced different quantities of strontium aluminate to traffic paint to achieve phosphorescence. Factors to consider for his study are charging time, lux received, luminance emitted, and amount of SrAl2O4: Eu added and its effects through abrasion. It was found out that the luminance emitted vs. time follows a power $(x) = ax^n$ where x is in minutes. There are positive trends when relating lux emitted with charging time with per cent strontium aluminate added with millimeters of paint removed.

INTRODUCTION

New developments in road construction use different technologies in a myriad of ways. Technologies like water-absorbing and silent asphalt, or intelligent traffic light systems, improve a road's ability to fulfil its current function, namely: enabling transportation in the most secure and comfortable way.

But next to these improvements, another branch of innovative technology has been created technologies that not only enhance the current functionality of a road, but add a new aspect or even a whole new function to it. These 'smart-road technologies' make use of principles and materials that are not a necessity to construct a road (like asphalt is), but are used in many settings, (like solar panels). The road becomes smart by integrating technologies, previously used in other contexts, in order to add a new function or enhance the driving experience. Three examples of these smart road technologies are solar roads, paint-related technologies and charging lanes. They will be the object of investigation in this magazine, because they are currently in the furthest state of development and can have an enormous impact on society in several different ways. In order to have solid base for further analysis, the smart-road technologies will be now introduced in regard to their function and then explained in detail in subsequent chapters.

1. LITERATURE

RESEARCH PAPER 1

Topic: - Luminescent Technologies

Author Name: - Wiedemann, E. and H. Ebert. (1888), 1889.
Highway lighting and roadway safety goes hand in hand. The usage of roadway lighting is still one of the most effective methods to prevent roadway accidents. Integration of other safety features of a road is also part of the highway design. The integration of the mixed strontium aluminate and paint to the highway system together with the lightings seems ineffective as observed by the researchers since both emit light that produced silhouette, and it is obvious which one is more beneficial. This mixture works best when there are absolutely no lighting present at night since this only produces small amount of luminance. Nonetheless, this might have the potential to still save lives when worked properly.

RESEARCH PAPER 2

Topic: - Character of the light emitted by incandescent zinc oxide

Author Name: - Nichols, E. L.., and B. W. Snow. (1892).
Sunlight is measured from the lux meter throughout the month of September to October during the monsoon season. Light source emitted an hour before dark is assumed crucial since it charges the strontium aluminate

MOVABLE ROAD DIVIDER

Harshad Suresh Kondaskar[1], Pinak Sunil Lonushte[2], Chaitanya Krushna Mahale[3], Bhushan Pandurang Patil[4] and Faiz Mohammad Khan[5]

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ABSTRACT

This paper presents Smart Movable Road Divider for controlling the traffic congestion in metropolitan cities and to provide a free path for the ambulance. The work presented in this paper focuses on reducing the latency in traffic and free path for ambulance. The existing Road Dividers consists of equal number of lanes. Usually, in morning and evening peak hours the opposite side of the Road Divider is generally underutilized. To overcome this, Smart Movable Road Divider is implemented where the divider is moved based on the density of the traffic using IR Sensors. If the density of the traffic is high on one side, the divider is moved to the other side. Then the density of traffic is stored in cloud which is possible through IoT. A free path for Ambulance is provided using RF Module by controlling the traffic signal. A Prototype is developed and tested for the Congestion control which also works on safety measures by intimating the drivers about the movement of the Divider.

INTRODUCTION

In recent years, with an ever increasing rate of development in metro cities around the world, there has been proportional increase in numbers of automobiles on the roads. Although the number of vehicles using the roads has increased, the static road infrastructure is almost the same and is unable to cope with changes like congestion, unpredictable travel- time delays and road- accidents that are taking a serious shape. Traffic congestion has been one of the major concerns faced by the metropolitan cities today in spite of measures being taken to mitigate and reduce it. It has emerged as one of the main challenge for developers in urban areas for planning of sustainable cities. In developing countries, like India, traffic is inherently chaotic and noisy. Identification of magnitude of traffic congestion is an essential requirement for defining the congestion and finding appropriate measures. The main focus of this paper is aimed at understanding the recurring urban congestion, its measurement, precautionary measure and suggests a remedial measure for the same. The implication of widening existing roads or building new ones will only results in additional traffic that continues to rise until peak congestion returns to the previous level. The total available space within the city for the construction of roads, railways and other transportation is restricted. The paper discusses implementation of movable traffic dividers as congestion release strategy for metropolitan areas instead of traditional solution of widening the roads. The moveable traffic divider helps in there configuration of road capacity, so as to attain optimum benefit from roadway usage on the existing road. The problem with Static Road Dividers is that the number of lanes on either side of the road is fixed. Since the resources are limited and population as well as number of cars per family is increasing, there is significant increase in number of cars on roads. This calls for better utilization of existing resources like number of lanes available.

I. LITERATURE REVIEW

II. Implementation of Movable Road Divider Using Internet of Things (IOT) [1]

In this project the road is connected to cloud where continuous monitoring of the traffic is done and intensity of traffic is Uploaded to cloud. Traffic intensity which is available in cloud can be used for various purposes like traffic updates on various apps such as HERE maps. After uploading traffic updates on cloud by considering traffic intensity in three variables like LOW, MEDIUM and HIGH road divider is moved accordingly. If intensity is LOW then divider stays in its position.

If intensity is MEDIUM then divider moves by a small distance. If intensity is HIGH then divider moves by a large distance. The project also provides solution to traffic clearance for the ambulance. Using RFID a cloud is made to detect the arrival of ambulance and then to make a way specially for ambulance by moving divider of the road accordingly. Hence it is concluded that it is possible to avoid congestion in a given route by moving the divider to widen or narrow the road and clear the traffic. Also it is possible to provide a free way for the ambulance irrespective of the traffic on the road.

Controlling of Traffic Using Movable Road Dividers [2]

In this paper, we have successfully designed and developed a demo model of 'Controlling of traffic using Ultrasonic sensors', in which the results are satisfactory. Since it is a demo model, we have only shown it through one way of traffic using ultrasonic sensors . The traffic congestion data from the sensors is given to the nearest traffic control room using a wi-fi module .The data from the sensors is updated automatically. But in real time traffic congestion can be in more than one direction and then also this module can be used by using image processing rather than the basic sensors.

PAVEMENT DESIGN ON LIQUIFIED SOIL

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ABSTRACT

The research presented in this paper introduces a new liquefaction mitigation measure, "Induced Partial Saturation (IPS)", which will be a cost-effective and practical solution for new as well as existing structures. The liquefaction mitigation measure that is being explored improves earthquake resistance of loose sands by introducing some amount of air/gas in the voids of the sand. This research explores two different methods to introduce air/gas in the fully saturated sands. These methods include; generation of hydrogen and oxygen gases in the sand through electrolysis and air entrapment in the voids by draining and reintroducing water in the fully saturated sand. Uniform cyclic simple shear tests performed, using a shaking table, on air/gas entrapped specimens demonstrated that air/gas entrapment reduces the pore pressure build-up significantly, thus preventing initial liquefaction. Also, the tests performed on air entrapped specimens under vertical upward/downward and lateral flow regimes showed that air/gas bubbles remain entrapped in the sand. The research reported in this paper demonstrated that induced-partial saturation (IPS) in sands can prevent liquefaction and the technique holds promise for use as a liquefaction mitigation measure. Based on the observations and the results from the study being presented here, further research focuses on the development of a methodology for predicting liquefaction strength of the partially saturated sand specimens, to be applicable in practice, and on exploring the field application techniques

INTRODUCTION

Liquefaction occurs when the structure of loose, saturated sand breaks down due to a rapidly applied load. As the structure breaks down, the loosely packed individual soil particles attempt to move into a denser configuration. In an earthquake, however, there is not enough time for the water in the pores of the soil to leak. Instead the water is trapped and prevents the soil particles from coming into contact with each another. This is accompanied by an increase in soil water pressure, which reduces the contact forces between the individual soil particles, thereby softening and weakening the soil deposit, (University of Washington 2000). Many research attempts have been done to analyze the liquefaction phenomenon qualitatively and quantitatively. Several researchers attempted to investigate possible remedies to the different aspects of the liquefaction problem. This paper attempts to present some of these efforts and propose other types of investigations and ideas.

Liquefaction occurs when saturated and cohesion-less soils lose strength as a result of increased pore water pressures and thus decreased effective stresses caused by earthquake packing. Due to earthquake ground motion and some other dynamic vibration, liquefaction reduces the stiffness and hardness of soils. Liquefaction occurs in saturated fields, where water entirely fills the gap between individual particles. This water exerts a force on the soil particles, affecting how tightly the particles are packed together.

The phenomenon of liquefaction of saturated sand deposits is one of the most drastic causes of structural damage during earthquakes. If the soil is moist and largely unable to drain during shaking, loose sand continues to contract under the cyclic loading exerted by earthquake shaking, which may shift normal stress from the sand matrix to the pore water. As a result, the successful stress confining stress within the soil decreases, resulting in a lack of strength and stiffness that leads to soil deposit deformations.

I. LITERATURE REVIEW

1.) Dr. R.P.Rethaliya and Kanan Thakkar (P.G.Scholar, SPIT, Mehsana, Gujarat.) Volume - 5 | Issue - 1 | Jan Special Issue - 2015 |

According to them liquefaction is a phenomenon in which saturated cohesion less soil under oscillatory motion during earthquake loses all is shear strength due to pore water pressure and flows like a liquid.

Liquefaction occurs when the structure of a loose sand breaks down due to some rapidly applied to the structure breaks down, the loosely-packed indie particles attempt to move into a denser configurate earthquake, however, there is not enough time for in the pores of the soil to be squeezed out. Instead, is "trapped" and prevents the soil particles from closer together. [Increased water pressure is caused soil particle s trying to rearrange and pushing on the increased water pressure reduces the contact between the individual soil particles, thereby softening weakening the soil deposit.

GENERATION OF OIL AND METHANE GAS BY USING WASTE PLASTIC

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ABSTRACT

Due to increasing population & rise in the standard of living of people, plastics have woven their way into our daily lives and now pose a tremendous threat to the environment. Over 368 million tonnes of plastics are produced annually worldwide, and the used products have become a common feature at over flowing bins and landfill. The process of converting waste plastic into value added fuels is explained as a viable solution for recycling of plastics. Pyrolysis runs without oxygen and in high temperature of about 300°C which is why a reactor was fabricated to provide the required temperature for the reaction. Converting waste plastics into fuel hold great promise for both the environmental and economic scenarios. Thus, the process of converting plastics to fuel has now turned the problems into an opportunity to make wealth from waste. The conversion of oil from plastic has dual benefits. First of all the oil and methane produced can be used as a fuel for domestic purposes and also in vehicles and industries when further refined. Secondly the various types of pollution caused due to waste plastics can be minimized.

Keyword: Polyfuel, Pyrolysis, Plastic, Methane.

1. INTRODUCTION

Waste disposal is one of the major problem being faced over the world and India is no exception. Plastics have become an integrated part of human life due to its adaptive and resourceful properties like cost effective, light weight, flexibility, durability and faster production rate. It is used I almost every field. Plastics are non-biodegradable polymers mostly containing carbon, hydrogen, and few other elements like nitrogen. Due to non-biodegradable nature, the plastic waste contributes significantly to the problem of waste management. As per the record provided by Central Pollution Control Board (CPCB) for the year 2018-2019 in Mumbai about 409 tonnes of plastic waste is generated per day of which only 90-110 tonnes of plastics are sent for recycling whereas in Maharashtra its around 409,630 metric tonnes per annum. In India the number rises to 34 lakh tons of plastic waste per annum the efficiency of plastic waste collection is 67% of which only 60% was recycled and more than 9,400 tonnes ends up in the seas, oceans or gets piled up on lands devoid of source segregation. Pyrolysis is a commonly utilized method for destruction of waste products. It is often considered as an alternative to incineration, wet oxidation and other treatment processes. The products of pyrolysis are typically gases, liquids and a solid char, although the process can be designed to avoid the formation of hydrocarbon liquids by having a secondary pyrolysis (cracking) stage. From the perspective of management of waste streams in a space environment, pyrolysis offers certain advantages as a means of solid waste Disposal. One significant advantage is the partial Decoupling of issues of CO2 management from the waste stream disposal problem, since some of the carbon will end up in the char residue and some will end up as CH4 and other hydrocarbons (as well as CO and CO2).

2. EXPERIMENTAL SET-UP
2.1 The Equipment's used for set-up

- A Iron Container

- 2 Plastic container for storage

- A bucket half filled with water

- PVC pipe of 15mm diameter

- 1ft Iron pipe of 20mm diameter

- 5-6 PVC pipe fitting

- Crushed HDPE waste plastic

REMOVAL OF OIL AND GREASE USING NATURAL ADSORBENTS

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ABSTRACT

There are several pollutants that can harm our environment. Oil and grease are one of the examples of a pollutant that can cause a severe environmental problem. The highest concentration of oil and grease inside the sewer system can cause the sewer to clog that can lead to overflow. It can affect not only to the environment but can also affecting our health. There are various methods of oil and grease removal that one of the examples is by using adsorption method. This study objective is to determine the ability of adsorbents, which are sugarcane bagasse and banana pith, Honeycomb, Neem curry leaves, pineapple peels, organoclay

INTRODUCTION

Organic toxic waste (oil and grease (O&G)) causes ecology damages for aquatic organisms, plant, animal, and equally, mutagenic and carcinogenic for human being. They discharge from different sources to form a layer on water surface that decreases dissolved oxygen. O&G layer reduces biological activity of treatment process where oil film formation around microbes in suspended matter and water. This lead to decrease dissolved oxygen levels in the water. Then oxygen molecules are difficulty to be oxidative for microbial on hydrocarbon molecules and cause ecology damages to water bodies. The conventional techniques remove oil and grease using skimming tanks and oil and grease traps in treatment plants but the main disadvantage of these methods is their low efficiency of removal. The most important pollutants in the oil processing wastewaters are conventional pollutants such as oil and grease, suspended solids and pH, and non- conventional pollutants such as phenolic compounds, COD, sulphide and ammonia. Among these pollutants, oil and grease is one of the most complicated pollutants to remove. This paper summarizes available technologies to remove oil and grease, and should assist oil and grease discharges in compying with their effluent limits. A major challenge wastewater treatment comes from a category that includes emulsions or solids composed of esters of glycerol, fatty acids, or triglycerides derived from animal or vegetable sources. Stubbornly insoluble in water.

LITERATURE REVIEW

The conventional techniques remove oil and grease using skimming tanks and oil and grease traps in treatment plants but the main disadvantage of these methods is their low efficiency of removal. In view of water pollutants, they are becoming more complex and multi pollutants simultaneous removal is paid more and more attention to be removed. Recent composite materials such as aluminum oxide, nano particles, amorphous zeolite and laterite adsorbents are used to treat complex wastewater that have high adsorption capacities. With these points in view, the present research studies new approach to degrade toxic waste (oil and grease) form industrial wastewater. The work presented lipase hydrolysis stage using Pseudomonas strains as a producer of lipase and assess their degradation capabilities. This approach included enzyme unit coupling with adsorbent materials as efficient method to complete removal. Adsorption technique uses zeolite (laterite and amorphous materials) as easily and cheaply available adsorbent. Over the years, oil spill contaminations has become a major hazard to the environment especially the marine areas thus drawing vast consciousness to the researchers as it is an appalling problem that set both the marine life and

ecosystem at atrocious danger. The term 'oil spill' is usually applied to marine oil spills, where oil is released into the ocean or coastal waters when oil is manufactured, stored, and shipped but spills may also occur on land. If oil is explored, transported, stored and used too widely, the space to spill it will cause a severe problem and impose serious damage on the environment. Oil spills may be caused by the release of crude oil from offshore platforms, tankers, drilling rigs and wells, fuels used by large ships such as bunker fuel, or the spill of any oily byproduct or waste oil by household. This affects the cleanliness and allure of the ocean or coastal waters, and the survival of the marine life. Regardless of the optimum efforts to control oil spill, it is not impossible for the oil to pollute shorelines of the ocean and reservoirs, and the edges of watercourses and brooks. To assist in preserving these water resources from destruction for our future generation and for the sustainability of various marine species, the cleanup of the water resources especially the ocean is crucial. Thus, a well-organized system is extremely vital for the retrieval of the spilled oil.

METHODOLOGY

Fresh pineapple that bought from market was peel off. The peels were washed and chopped into small pieces. The peels were dried under direct sunlight for 5 hours and 30 minutes in air oven at 60 °C. Dried pineapple peels were weighed using an analytical balance and was placed in 500 mL beaker. The samples were then rinsed

ENERGY UTILIZATION OF KINETIC PAVING TECHNOLOGY

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ABSTRACT

Nowadays, India is the developing country and now a days the demand for energy has been increasing at an alarming rate and there has been a decrease in the availability of energy resources electricity has become a priority in daily life and can even be considered as a primary human need. On the other hand, the excessive use of electricity or energy and the increase in population is one of the factors that can increase energy requirements. In Indonesia, the use of electricity comes from very limited natural resources. Therefore, energy savings should be implemented, either by using as necessary or even making an update that can sustain existing electrical energy. Apart from saving energy, it would be better to create new energy with minimal effort. Like producing energy from daily human activities, one of it is walking. The result is the creation of Kinetic Paving material technology that when people step on it will produce electricity. The benefits of this technology can create electricity that can be used for the environment of this kinetic paving. As for lighting in paving as lighting art or as a source of energy for surrounding buildings. Kinetic Paving is applied in pedestrian traffic spaces. This energy is expected to help the community and the surrounding environment. This is an update that should have been implemented. When natural resources are getting low and energy prices are getting higher, we need all these reforms.

I. INTRODUCTION

The population in India is increasing each day. Therefore, the needs are also increasing. One of them is the need for electricity. Electricity is now a primary need in daily life because many things are done every day using electricity. The use of electricity in the house or other building functions is not effective where the excessive use of electrical energy. So that the energy spent is very much and not proportional to the energy produced. So that resources are increasingly depleting. Therefore, we need technology that can create its energy. To produce electrical energy, the easiest method is the result of the transformation of kinetic energy. The kinetic energy that is easily obtained in the middle of the city is the movement of the human itself. It can be concluded that human energy in walking can be used as kinetic energy which will be a source of electrical energy. India is one of the countries with quite a large number of young people. Youth tend to have more outside activities than other groups. So that at some point the place is quite active with the activities of this young man. This can be an advantage in terms of creating electrical energy from kinetic energy.

Previous research has shown that excessive use of energy will lead to the extinction of natural resources and the possibility of fossil fuels and oil will be depleted around the 21st century. What is needed in this research is kinetic paving which is connected to a USB port and street lights. The top surface of the paving uses materials from recycled mattresses, athletic tracks or tires where the material is flexible. Installation of kinetic paving is quite easy because there is no need for excavation and it must be in an area with a high pedestrian level.

One alternative source of energy generation could be human energy harvesting, where the source of energy generation is energy expended by the human body such as work in everyday activities such as walking, opening doors or even typing etc. Much research has been carried out in the field of personal energy generators, where a device is attached to an individual and the generated energy used for portable loads. Recently however, there appears to be a trend towards developing devices embedded in the urban environment, and provides the focus of this thesis.
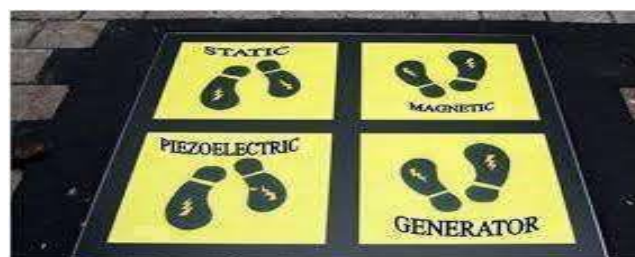
II. PROBLEM STATEMENT

1) Clean, renewable and environmentally friendly energy generation has always been an issue that needs to be solved. Technologists have created various methods such as solar panels, wind turbine, hydro electricity etc.

FORMATION AND COMPARISON BIOMEDICAL WASTE BRICKS

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ABSTRACT

Bricks are most important construction material ,but there are so many different type of brick but we trying to make a brick by using biomedical waste like surgical mask ,ppe kit ,due to the covid pandemic them biomedical waste numbers are increase in large amount , we are going through another big crices in called biomedical waste crises , so we decide to make brick to reduce biomedical waste and also give a another option to people to save the environment .this brick in standard size and also give better strength than mud bricks ,the price of this brick will be less because it made by paper waste , surgical mask ,ppe kits , and binding agent.

I. INTRODUCTION

Since ancient days from stone age to modern days age humans need food, cloths and shelter out of three needs of humans shelter that means house building is placed a prominent need. to build a house building humans choose mainly types of materials for the construction but during time course since olden days according to the house building after developed some civilization man build dams canal along with house building.all these built to modern construction main item and materials is the brick in time to time making of brick man developed some sophisticated technologies. Basically in making of brick clay and soil is the main material and ever standard materials but in modern days we making cement brick by using and mixing some chemical admixtures and formulas, and in recent age we are using light weight cement bricks for the structures of the building. these light brick are most used for the building of multi storied building. an effort for an alternative investigation the manufacturing of the brick was accomplished. By using industrial byproducts like fly-ash, silica fume, lime, gypsum, stone dust as key ingredients. In india thermal power plants are generating fly-ash in large quantities. industrial waste are hazardous in nature, their disposal is of major concern. recycling such a waste by utilizing them in to building materials is a modern solution for the pollution issues. So we are making an economical and eco-friendly brick which will provide good strength with standard size.

II. LITERATURE REVIEW

the mask wastes are increased across the world as the people are not following the appropriate disposal methods for the used mask. Thus, it creates a new environmental challenge. Further, there are no appropriate mask or plastic waste collecting method specified in whole countries or part of the region in sri lanka, india, pakistan and china (sangkam 2020). This is adding a vast amount of plastic and plastic particle waste in the environment, which may end up in the streets and landfills. Besides, it gets into the waterways and reaches the fresh water and marine water. This adds the presence of the plastics into the aquatic medium. The health and environmental effects of plastic and plastic particles due to the inappropriate disposal of facemasks were also highlighted by number of literatures. Furthermore, the production of the face masks also contributes the emission of co_2, which will potentially con- tribute to the global warming . the processes of propylene, small aluminum strips and polypropylene in the production of n95 and surgical mask contributes the significant amount of co_2 emission to the environments. Furthermore, production of fabric, sewing and weaving process of cloth mask fabrication also contributes the co_2 emission to the environments .the n95 mask production release 50 g co_2-eq per single mask, excluding the transportation. Surgical mask is embodied with 59 g co_2-eq per single and the highest share is from the transportation process. Whilst, the cloth mask production contributes about 60 g co_2-eq greenhouse gas emission per single mask. However, this would create a massive impact to the atmosphere because; millions of face masks are pro- duced all over the world to control the pandemic situation. The face masks used by medical examiners in hospitals are carefully collected as its hazardous waste. A study was conducted in the uk and analyzed that if each individual uses one disposable surgical mask every day for a year, this would create over 124,000 tons of unrecyclable plastic waste 66,000 tons of contaminated waste and 57,000 tons of plastic packaging. However, there is currently no specific waste stream for these products if it used by the public. Mostly, it is thrown recklessly in the streets or collected as a mixed waste. In the handling of urban solid waste and hazardous medical waste, the pandemic has led to a significant challenge. The collected hospital face masks and other mixed waste are sent to the incineration and landfill. However, due to the existence of the plastics in the mask, such methodologies often have the potential to cause adverse environmental effects. Most plastics are chemically stable, resistant to corrosion and, difficult to degrade by microorganisms yet they prefer to remain in the soil and pose environmental

SIMULATION AND HARDWARE DESIGN OF SINGLE PHASE FIVE LEVEL ACTIVE NEUTRAL POINT CLAMPED CONVERTER

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ABSTRACT

This Project presents a Simulation and Hardware style of Single section Five-Level Active Neutral Purpose Clamped Converter. so as to get construction output voltage wave-forms, a switch strategy supported through switch angles is explained. Simulation and Output results of construction voltage wave-forms are given for 5 levels. Five-Level Active Neutral Purpose Clamped Convertor is shown during this project and therefore the steps to synthesize the 5 level voltages are given. The Simulation diagram and triggering diagram of the circuit is explained. We have a tendency to are victimization MATLAB/Simulink for simulation of Single section Five-Level Active. Neutral purpose Clamped converter. This topology we have a tendency to use power Switches (MOSFET) as a covering device and check performance of resistive load and output wave form.

I. INTRODUCTION

A medium voltage drives in industrial applications. In order to obtain the best performance in medium voltage and high-power electrical transmission, dv/dt and harmonics should be minimized. By introducing more output voltage levels. This puts forward the theory of multi-level inverters for industrial drives to overcome the above short comings. The voltage generated at high frequency and low switching frequency has almost no distortion. Multi-level inverters play an important role in high performance and medium voltage conditions, such as rolling mills, SVCS, HVDC pumps, blowers, compressors, etc. It plays a role in the electronics field and is widely used in industry and renewable energy to convert direct current to alternating current. It can not only provide high performance, but also use renewable energy. Various configuration can be used for shaping multi-level inverter multi-level inverter with diode clamp multi-level inverter with floating capacitor clamp multi-level inverter with cascaded H-bridge flying capacitor multi-level inverter use attached to the circuit breaker Capacitor Voltage level. This design allows the inverter to provide high power, especially in the case of a power outage due to the reduced switching state provided by the holding capacitor.

The demand for high-voltage and high-power converters that can generate high-quality signals through low-voltage devices and lower switching frequencies has led to the development of multi-level inverters that take into account the voltage limitations of semiconductor power switches. The capacitor voltage source generates a stepped voltage at its output. By switching the switch, the capacitor voltage can be added, and a high output voltage can be achieved, while the power semiconductor only needs to withstand a low voltage.

II. LITERATURE SURVEY

Single phase Five-Level Active Neutral-Point-Clamped Converter where we want to generate for medium-voltage and high-power applications, including renewable energy conversion. Considering the voltage rating of commercially available semiconductors, the five-level active neutral point clamped converter (5LANPC) is one in all the foremost advantageous topologies among five-level multilevel converters. The multilevel inverter is in a position to produces five level pulses for medium voltage application.

In [1], A three-level neutral point clamped voltage source converter (NPC VSC) is widely employed in high-power, medium voltage applications. To beat its major drawback – the unequal loss distribution among the semiconductors – the employment of active NPC switches (ANPC) was proposed previously. During this paper, an easy feed forward loss-control scheme for the ANPC converter is presented.

Active-Neutral-Point-Clamped (ANPC) Multilevel Converter Technology [2] An idea for multilevel power conversion has been presented during this paper. The structures discussed throughout the paper are a mixture of neutral-point-clamped (NPC) and floating capacitor converters. A careful selection of the redundant switching states enables the control of the floating capacitor voltages without the connection of passive networks.

ULTRASONIC RADAR SYSTEM USING ARDUINO MEASURING DISTANCE AND ANGLE

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ABSTRACT

RADAR can see things at long distances before humans can see with naked eyes. Radar acts as both an early warning device and tracking device. Radar based systems are used as object detection systems which utilizes electromagnetic waves. This Radar System is controlled via Arduino. Ultrasonic sound sensors are used instead of Electromagnetic waves. A servomotor is used to continuously monitor an area of limited range .The project aims at making RADAR that is cost-efficient and accurate. Due to its insensitivity it can withstand harsh working conditions such as dirt, dust, rain. The system constantly monitors a limited range and alerts the presence of obstacles if any. If the object is very close to the sensor then it is alerted using a buzzer and a red LED while if an object is at short distance buzzer and green LED turn on but if the object is out of limited range alert system is off.

Keywords: Object Detection System, Arduino, Ultrasonic Sensor.

INTRODUCTION

Target detection is easier when an object is near or easily visible. But, the same doesn't stand true when the object is far away or is not visible due to weather conditions. Thehistory of radar actually dates back to the 1880s, when Heinrich Hertz showed that radio waves exist and could be both generated and detected. American physicists Gregory Breit and Merle Tuve developed usable radar in 1925, but its use remained limited until shortly before World War II.During the Second World War, technological advances by Germany, England, and the United States resulted in significant improvements to radar in terms of technology,reliability, and power.

The project works on the principle of radar echo effect of thetransmitting signal. In this Project we are using the Ultrasonic Sensor to operate by emitting a burst of sound waves in very rapid Succession. These sound waves hit the intended target, bounce back to the sensor, and travel at known speed .An ultrasonic Sensor, radar is much less affected by temperatur improving consistency and accuracy. Servos are small but powerful motors that can be used in a multitude of products ranging from toy helicopters to robots. Arduino controls the servo motor for the direction of theultrasonic sensor and it moves from 0 degree to 180 degree. Ultrasonic sensor transmits the signal in all directions and if any obstacle that is the target is detected then echo pulse sense. With the help of this echo pulse arduino program, find out the distance and direction angle of the target. The angle of rotation is displayed on a 16x2 LCD screen. Whenever an obstacle is detected, the buzzer turns on and it is also displayed in the LCD display.

LITERATURE REVIEW

Subsequent to experiencing a portion of the papers with respect to usage utilizing ultrasonic sensors and ARDUINO, it was found that this idea is searched a lot and is a mainstream idea which is still in advance. The advances utilized were not just productive and solid yet in addition financially achievable. Not only this, here other very useful applications of ultrasonic sensors were observed too.

This paper discusses about a monitoring system which is designed measure to speed of waves and height of river through ultra-sonic sensor using micro-controller (Arduino). On the off chance that the waterway can't oblige the volume of water, then all the water will submerge with land and this phenomenon is called as flood or surge. We can overcome this flood problem by earlier identification in height of water and observing speed. If we identify problem earlier we can overcome this problem before it become crisis. By testing the system i.e. simple water level, it was observed that ultra-sonic have accuracy of 96.6%. But when it is implemented in the rivers there are many errors because of different type of water levels due to heavy waves and speed of water and also due to floating of heavy objects. Unlike Previous testing results, author directed this analysis on tracking of speed of water improvement or modification and level of water in flooding. The test was completed when the Arduino used as controller of application. For more research, information of depth level and speed of water of this system will be sent to database server website to be checked regularly.

This research is about a blind walking stick made for blind people through which they can avoid obstacles while they walk and recognize currency. With the thought of visually impaired individuals, it is to some degree troublesome job to distinguish the cash or any unexpected obstacle. Despite the fact that currency dependent on size could possibly be recognized however it is relatively hard to distinguish that whether the note is unique or phony. So to overcome this issue the authors have designed the Currency Recognition Blind Walking Stick. A

IOT BASED HOME AUTOMATION

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ABSTRACT

The home automation system is implemented for decades but due to the costing and budgeting of the project, it remains a niche product for high-end consumers. The Intelligent Home Automation System, security is one of the major factors that does not implement the home automation system. The hectic daily life routine sometimes makes them forgetful to switch off the devices at home. The clumsiness attitude plus with our packed daily routine life that sometimes makes ourselves such in hurry situation that sometimes makes us forgot to switch off the lamps. It will cause the electricity bill rose sharply. Besides, it is one of the electricity wastage that will lead the earth became an unhealthy one. The strength of this project is to control the devices such as lamp and door at home using a smartphone. The system is related to home appliances using PIC MCU. Home appliances that can help the user to control the devices at home and develop a good condition of house area that will prevent any loss and damage to the property of any organization. The hardware that is being used in this project is a relay, WIFI module, PIC MCU, Relay Driver IC, Relay, Sensor's Etc.

INTRODUCTION

A smart home incorporates sensors, Relay, and a WIFI network and has two major interacting components which is a Adityakumar Dubey, Department of electronics and telecommunication engineering. Mumbai University, India.

Smart network and a smart load. The Smart home known as House automation, with the use of new technology, to make the domestic activities more convenient, comfortable, secure and economical. The Internet of things can be defined as connecting the various types of objects like smart phones, personal computer and Tablets to internet, which brings in very new-fangled type of communication between things and people and also between things. With the introduction of IoTs, the research and development of home automation are becoming popular in the recent days. Many of the devices are controlled and monitored for helps the human being. Additionally various wireless technologies help in connecting from remote places to improve the intelligence of home environment. An advanced network of IOT is being formed when a human being is in need of connecting with other things. IoTs technology is used to come in with innovative idea and great growth for smart homes to improve the living standards of life. Internet helps us to bring in with immediate solution for many problems and also able to connect from any of the remote places which contributes to overall cost reduction and energy consumption.

Background Research: - The process of improving and upgrading the living standard of the house has been raised due to the advanced technology applied in this era society. Home Automation System is implemented for decades but due to the costing and budgeting of the project, it still remains as a niche product for high end consumers. Although the concept of smart home automation has been around for quite a long time, but an actual smart home has only established a short time. The invention of home appliances such as a television with a remote control which is a simple home automation system was patented in 1893 . Other than that, more home appliances have been invented since that. In early 2000, the popularity of smart home automation began to increase due to different of technology started to arise. Smart home automation turns into a more affordable choice and therefore a viable or available technology for consumers. With the uprising of the prestige of smart home, home networking, domestic technologies and other gadgets began to emerge on store shelves Today's smart home automation are more emphasize about smart living, living greener and security. Our smart home is sustainable and it ensures that our home is not utilizing unnecessary energy. In addition, the smart home also can prevent any intruders by alerting us with alarm or send any signal to us through smartphone related application. The current trend in smart home automation includes automated lights, remotely mobile control, remote video surveillance and receiving notifications of mobile, email and text.

The System Suitable for Below Applications:
1. Security Alarm System applications;

2. Building, home and industrial Automation system

3. Supervision and monitoring alarm systems;

4. Automatic monitoring system;

MODIFIED FRACTIONAL FREQUENCY REUSE TECHNIQUE TO REDUCE INTERFERENCE IN LTE NETWORKS

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ABSTRACT

The LTE (Long Term Evolution) is a wireless standard communication which result in high spectral efficiency, high data rates and flexible frequency bandwidth. By using frequency reuse mechanism high spectral efficiency is achieved. Because of frequency reuse mechanism it may cause interference in this networks. Here we proposed Modified Fractional Frequency Reuse technique with hybrid DAS (Distributed Antenna Aided) algorithm in the Long Term Evolution (LTE) networks that is based on OFDMA technique. MFFR generally divides the cell into center and boundary area and based on these deviation the proposed scheme may follow various different steps to select the optimal FFR technique. The first step is totally depend on creating proposed technique with hybrid DAS algorithm and increasing throughout with increase in user satisfaction and the second step defined on the maintenance of power optimization. The MFFR technique calculate the SNR, optimized power based user support and throughput and again uses these technique to evaluate throughput and user satisfaction. Simulation result will show that the SNR value is higher than previous technique hence throughput will also high with user satisfaction. The proposed technique results better than previous technique as per result showed further.

Keywords: LTE Networks, interference reduction, OFDMA, Modified FFR, co tier and cross tier interference.

INTRODUCTION

Mobile communication and several wireless standard based system utilize orthogonal frequency division multiple access (OFDMA) as a very desirable and current technique [1][2]. The reason behind this is because from the subcarriers band each end point engage one subset and at one time one user can occupies one traffic channel.

OFDMA system considered several techniques for mitigating complexities of cell boundary and interference issues. OFDMA provides dynamic allocation of sub bands to various users with their time requirements, to take report of channels between variations in between many users for many channels [11][12][13]. The weak user utilized the bandwidth with active fraction part of power decided by sub channelization. When cell sectors are allocating sub bands to the boundary area that time important issues are also considered the interference among users.

Cellular network have concept of frequency reuse which improves the network capacity and coverage [14][15]. In Long Term Evolution (LTE) network MFFR is used to reduce the co tier problem. The MFFR technique divide one cell into two different regions center area of cell and boundary area of cell [4][11]. Divide the one frequency band into different parts, sub parts and assign them to center and boundary region respectively. MFFR shows results as, eliminate the cross-tier interference and also mitigate co-tier interference [16][18] with this the throughput of system is increased. Bandwidth allocated to each region with utilizing transmitted power and various interference reduction parameters.

This paper have basic aim as evaluating and presenting an interference management Modified FFR technique with hybrid distributed antenna system aided algorithm for LTE networks. The technique will evaluates the MFFR technique based on parameters: power optimization, signal-to-noise ratio, and throughput and user satisfaction. The Modified FFR technique examines the radius and frequency of inside cell and will evaluates each user based SNR, throughput and capacity. For calculation of throughput with user satisfaction these calculated SINR values are useful. Now, the particular mechanism will select optimal modified FFR technique and algorithm which will either increase the user satisfaction or the user throughput. This paper also gives simulations to examine the MFFR technique.

Further, the paper is organized as below, some short summary about previous work and problem definition in section II, then will introduce the proposed mechanism and calculation of SNR, throughput, user satisfaction and power optimization with interference is explained in section III. Evaluation of technique and simulation results is explained in section IV, while section V will conclude the paper and explain some future work.

CENTRIFUGE LIQUID SEPARATION MACHINE

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ABSTRACT

This paper introduce, Centrifugation is a method of separating molecules having different densities by spinning them in solution around an axis (in a centrifuge rotor) at high speed. The major components of the centrifuge include; an electric motor, a rigid frame, rotating wheel, three sedimentation vessels and a centrally mounted shaft. The centrifuge was designed to withstand vibration caused by the rotating masses and fabricated using locally sourced standard material. Performance test analysis gave a specific energy consumption and optimal separation time of 30 minutes respectively. Thus the centrifuge constitute a variable option for production of pure and quality industrial products in small and medium scaled industries. The main purpose of making machine is to check our product before going for batch production, for avoiding losses time and material.

INTRODUCTION

A centrifuge is a device that uses centrifugal force to separate various components of a fluid. This is achieved by spinning the fluid at high speed within a container, thereby separating fluids of different densities (e.g. cream from milk) or liquids from solids. It works by causing denser substances and particles to move outward in the radial direction. At the same time, objects that are less dense are displaced and move to the centre. In a laboratory centrifuge that uses sample tubes, the radial acceleration causes denser particles to settle to the bottom of the tube, while low-density substances rise to the top. A centrifuge can be a very effective filter that separates contaminants from the main body of fluid.

There are three of centrifuge designed for different application, Industrial scale centrifuges are commonly used in manufacturing and wast processing to sediment suspended solids, or to separate immiscible liquids. An example is the cream separator found in dairies. Very high speed centrifuges and ultracentrifuges able to provide very high accelerations can separate fine particles down to the Nano-scale, and molecules of different masses.

Large centrifuges are used to simulate high gravity or acceleration environments (for example, high-G training for test pilots). Medium-sized centrifuges are used in washing machines and at some swimming pools to draw water out of fabrics.

Gas centrifuges are used for isotope separation, such as to enrich nuclear fuel for fissile isotopes.

REVIEW OF THE LITERATURE

In this Literature Survey, an overview of important of laboratory centrifuge rotor design and other parameter selection is presented. It is mainly focused on studying the different parameters of laboratory centrifuge rotor to improve the strength of the rotor and safety of the product.

[1] Anon Wang boon, Pattarapong Phasukkit, Computational Analysis of Blood Parameters Separate by Centrifuge Technique: This article is purpose of the computational fluid dynamic (CFD) simulation for blood parameters separated by centrifuge machine which has different spinning velocities. The structure of the machine, as a fixed tube at 30 degrees from the base is used to prove that the precipitate of the blood's 2 parameters, such as blood cell and plasma, by using the simulation from computer In three dimensional (3D) symmetry modelling to study the change of the precipitate in centrifuge at different velocity of spinning. At 2000 rpm, 3000 rpm, 4000 rpm and 5000 rpm(round per minute) the result of this simulation showed the density of blood as low density in the top of the blood it's mean plasma and high density at the bottom of the tube it's mean blood cell. From the model in centrifuge can prove that in each different level of the density from velocity of spinning that useful for study to improvement of blood parameters separated by used computer simulation

[2] Neethu S.1 and B.G. Fernandez Design, Analysis and Optimization of High Speed Axial Flux Permanent Magnet Synchronous Motor for Centrifuge Application: This paper presents novel design and analysis of a high speed axial flux permanent magnet motor for centrifuge application. The centrifuge motor is designed to rotate at a speed of 45000 rpm inside an evacuated casing for a long time. The proposed axial flux motor has light, yet strong, well-balanced rotor that can run for about 25 years continuously. The designed motor is optimized for obtaining superior performance. Magnet 3-D and OptiNet are used for the Finite Element Analysis (FEA) and optimization of the motor respectively and the results are presented. Finally, the fabricated motor is tested using sensor less Field Oriented Control (FOC) for experimental verification

DESIGN & FABRICATION OF MULTI-PURPOSE MECHANICAL MACHINE

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ABSTRACT

This is paper presents the concept of ''Multi-Purpose Mechanical Machine'' mainly carried out for production based industries. Industries are basically meant for Production of useful goods and services at low production cost, machinery cost and low inventory cost.. So in this project we have a proposed a machine which can perform operations like drilling, cutting, grinding some lathe operations at different working centers simultaneously which implies that industrialist have not to pay for machine performing above tasks individually for operating operation simultaneously. In this machine we are actually giving drive to the main shaft to which a bevel gear is attached, all four shafts have a bevel gear attached to each other to form a differential mechanism, and three of the four operations are both engageable and disengageable.

Keyword: Multipurpose, Power transmission, Concurrent Engineering, FMS (Flexible Manufacturing System), Cutting.

1. INTRODUCTION

Every industry desire to make high productivity rate maintaining the quality and standard of the product at low average cost .in an industry a considerable portion of investment is being made for machinery installation .so in this project work is propose where a machine is designed which can perform operations like cutting, buffing, milling, and drilling.

Our Research describes the design of a "Multi-Purpose Mechanical Machine" which is based on the concept of concurrent engineering to perform multi-operations such as cutting, drilling, grinding. I have worked on the same project at my college presenting a synopsis showing its basic construction and working. The project work subject is one, in which actually we are learning the theoretical concepts in practical way. Also the practical experience is one of the aim of this subject. For a developing industry these operating performed and the parts or components produced should have its minimum possible production cost, then only the industry runs profitably

2. LITERATURE REVIEW

2.1 Rakesh S. Ambade, Komal D. Kotrange Et.Al. "Paddle Operated Multipurpose Machine"
The survey of the literature regarding pedal driven machine are listed: Dharma Chaitanya Kirtikumar was design and develop of multipurpose machine which does not required electricity for several operation like cutting and drilling etc. This is a human power machine runs on chain drive mainly with human effort. But if we wanted to operate this machine by electric power this machine can also does that. This design is ideal for use in the developing world because it does not required electricity and can be build using metal base, pulley, rubber belt, chain, grinding wheel, saw, bearing, foot pedal for operated by human effort.

2.2 Krishnappa R1, Venkatesh G2, ET. Al. "Motorized Multipurpose Machine"
Industries are basically meant for Production of useful goods and services at low production cost, machinery cost and low inventory cost . Today in this world every task have been made quicker and fast due to technology advancement but this advancement also demands huge investments and expenditure, every industry desires to make high productivity rate maintaining the quality and standard of the product at low average cost.

2.3 Dr. Toshimichi Moriwaki (2006) "Multi-Function Operating Machine"
Recent trends in the machine tool technologies are surveyed from the viewpoints of high speed and high performance machine tools, combined multifunctional machine tools, ultra precision machine tools and advanced and intelligent control technologies. Frankfurt-am Main, 10 January 2011. The crisis is over, but selling machinery remains a tough business.

2.4 Mr.Gawari Tushar1, Mr. Gawade Rahul2, Et.Al. 'Multi Purpose Machine'
This model of the multi operational machine is may be used in industries and domestic orientation which can perform mechanical operation like drilling , cutting and shaping of a thin metallic as well as wooden model or body. Economics of manufacturing: According to some economists, manufacturing is a wealth-producing sector of an economy, whereas a service sector tends to be wealth-consuming.

DESIGN AND FABRICATION OF GYROBIKE

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ABSTRACT

This paper contains detailed description of designing and analysis of Gyro wheel used for the stabilization of the mono bike. The Gyro wheel is a special kind of wheel which is designed as an alternative to the training wheels used in bicycle for new learners. The Gyro wheel works on the principle of gyroscopic effect cause by the rotating flywheel. The Gyro wheel consists of a solid disk flywheel inside it which is spinning independently. The flywheel rotates at a high speed and creates a gyroscopic effect known as gyroscopic precession. It is design as a special type of wheel working on mechanical aspects that would be able to balance it-self i.e. it would maintain vertical position because the rotating flywheel nullified all the forces acting upon the wheel. For designing of the Gyro wheel, 3d modeling software used is Solid Works. As the title of the project gives a rough idea of this research which is about aconcept which can be implemented on bike with which the bike can be balanced itself without any support. This self-supporting bike will be powered with the help of DC hub motor which will be connected to a lithiumion battery .The purpose of this project is to design and build a mono wheel bike which can be used for ease of transportation and balance itself with the help of gyroscopic effect. The gyroscope balances the bike by countering external disturbance by the use of precision effect. This technology is generally used in heavy ships for balancing purpose to neutralize the effect of waves force. The same principle we can use with bikeas well. The gyro wheel will be mounted to same shaft as the mono bike's main wheel and it will be powered with dc motor which will also be connected to the same battery output. When in rotation, it resists any change inorientation of its spin axis.

Keywords: Flywheel, Gyro wheel, Monowheel, Precision Effect.

I. INTRODUCTION

Developing a one- wheeled electric vehicle which has features that can cover the problems such as ease of transportation, decrease atmospheric pollution ,using less parking space, mentioned above since it has small longitudinal length   and low carbon footprint. Moreover, they are suitable for all age groups; and do not require any registration, taxes. Most humans can learn to ride a bike without any problem because humans are skilled to balancing laterally left to right and the gyroscopic effect of the wheels makes it easy to stay up onceon the move. Remove one of the wheels to make it a unicycle and the tendency to topple backwards or forwards around the single axle is almost impossible to avoid. Seasoned unicyclists manage it by using the directly connected pedals to constantly adjusting the wheel backwards and forwards underneath them.

II. OBJECTIVE OF THE PROJECT

A. To Maintain the Wheel in Vertical Position.

The Gyro wheel consists of a flywheel which is co-axially aligned with the wheel. The flywheel needs to be rotated at a desired speed to obtain the required gyroscopic effect. When the flywheel rotates at the respective all the forces acting on it are nullified due to the rotation. The flywheel is coupled to a DC motor with friction drive method and these motor drives the flywheel which creates a gyroscopic effect helps in processing of the wheel in vertical direction.

B. To Rotate the Flywheel to the Desired Speed.

To create the gyroscopic effect in the Gyro wheel the flywheel needs to be rotated at the respective speed (rpm). This is done by using a D.C motor. D.C motor has a high starting torque and starting time is also less so it is used for the purpose. The D.C motor is coupled to the flywheel by a friction wheel.

III. DESIGN AND COMPONENTS

Following general components of Gyro wheel are to be designed and selected:

1. Flywheel
2. Bearing
3. Axel
4. Motor
5. Motor controller
6. Battery
7. Tire

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DUAL- AXIS SOLAR PANEL

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ABSTRACT

This paper contains a detailed description of the solar tracking and efficiency this provides. Energy needs are continuously increasing in this rapidly growing world. Most of our energy needs are met by burning fossil fuels which is harmful for the environment. Due to climate change and pollution, there is an increasing need of renewable sources of energy that are not harmful to the environment. The sun is a source of renewable energy. This energy is abundant and can be harnessed by using photovoltaic cells to produce electrical energy. The only drawback of this energy is that its conversion efficiency is low. The main reason for low conversion efficiency is because the absorption of solar energy is the most when the solar panel is perpendicular to the sun and it decreases in any other condition. Due to constant rotation of the earth the productivity is lowered. There are other drawbacks like weather conditions and harnessing is only possible during the day. Hence to overcome this problem solar trackers are used. Solar trackers help in increasing the productivity i.e., it increases the efficiency of the solar panel. Micro controller is connected to the solar trackers and with the help of starter motors the solar panel is moved to that particular direction. The micro controller is coded in such a way that it receives the input from the solar trackers and it gives the output to the starter motors which rotates the solar panel to the desired position. In this project we are going to increase the tracking efficiency which in turn will increase the efficiency of the solar tracker allowing it to produce more energy.

Keywords: Solar tracker, efficiency, energy.

I. INTRODUCTION

In photovoltaic systems, trackers help minimize the angle of incidence (the angle that a ray of light makes with a line perpendicular to the surface) between the incoming light and the panel, which increases the amount of energy the installation produces. Concentrated solar photovoltaics and concentrated solar thermal have optics that directly accepts sunlight, so solar trackers must be angled correctly to collect energy. All concentrated solar systems have trackers because the systems do not produce energy unless directed correctly toward the sun. Single-axis solar trackers rotate on one axis moving back and forth in a single direction. Different types of single-axis trackers include horizontal, vertical, tilted, and polar aligned, which rotate as the names imply. Dual-axis trackers continually face the sun because they can move in two different directions. Types include tip-tilt and azimuth-altitude. Dual-axis tracking is typically used to orient a mirror and redirect sunlight along a fixed axis towards a stationary receiver. Because these trackers follow the sun vertically and horizontally they help obtain maximum solar energy generation.

II. OBJECTIVE OF THE PROJECT

To create a solar tracker that is efficient than the one currently available in the market. Dual axis solar tracker consists of 4 sensors, 2 for each axis. When the difference between the sensors are there it will move to the direction of solar sensor that has the highest lux.

III. DESIGN AND COMPONENTS

The components of Dual Axis Solar Panel are as follows:

1. Solar panel

2. BH1750 sensors

3. Gear motor 10 rpm

4. ESP 32 microcontroller

5. L298N motor driver

6. Voltage sensor

7. Current sensor

8. LM2596 converter

9. TP4056 charging module

PIPE INSPECTION ROBOT

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ABSTRACT
The engineer is constantly conformed with the challenges of bringing ideas and design into reality. New machines and techniques are being developed continuously to manufacture various products at cheaper rates and high quality. The pipe inspection robot with active pipe-diameter adaptability and automatic tractive force adjusting is developed for long-distance inspection of main gas pipelines with different diameter series. Its physical design employs the scheme that three sets of parallelogram wheeled leg mechanism are circumferentially spaced out 120° apart symmetrically. This structural design makes it possible to realize the adaptation to pipe diameter and tractive force adjusting together. On the basis of analyzing the mechanical actions of the adaptation to pipe diameter and tractive force adjusting, the related mechanical models are established, and their control system structure and control strategy are discussed. To verify the pipe-diameter adaptability and tractive force adjusting of the robot, related field experiments are implemented in actual underground gas pipeline. The experimental results show that the theoretical analysis in this paper is valid and the prototype of this robot can work well in actual underground gas pipelines. Compared with other similar robots, this robot, which employs active mode for its adaptability to pipe diameter, can be adaptable to the wide range of gas pipeline diameters from Ø300 mm to Ø500 mm and automatically provide a stable and reliable tractive force with strong capacity of tractive force adjusting. As a mobile carrier for visual inspection wireless camera is mounted to see corrosion, crack, defect, and holes of main gas pipelines, spring is also mounted in middle for making it flexible to take turn.

Keywords: In pipe robot, Active pipe diameter adaptability; Tractive force adjusting; Gas pipelines inspection

INTRODUCTION
There are a wide variety of pipelines such as urban gas, sewage, chemical plant, nuclear power plant etc., which are indispensable in our life. Also, pipelines are the major tools for transportation of oils and gases and a number of countries employ pipelines as the main facilities for transportation. In our country, the urban gas pipelines currently go up to 13,000 Km long but since most of them have been constructed in 1980's, there happen a lot of troubles caused by aging, corrosion, cracks, and mechanical damages from third parties. Continuous activities for inspection, maintenance and repair should be performed from now on. However, those activities need enormous budgets that may not be easily handled by gas companies as they are mostly small and medium in size. Efficient equipment's for inspection and integrated maintenance program are required in gas industries an in-pipe inspection robot for the inspection of pipe with pipe diameter adaptability is introduced here. There were various models developed for the pipe inspection; however, this robot excludes various dis-advantages associated with them.

1.1 Aim of Project
In-pipe inspection robot with automatic adaptability to various pipe diameters and to monitor the defect, cracks, corrosion, block etc.

Why this Topic is Chosen?
Often, robots are used to do jobs that could be done by humans. However, there are many reasons why robots may be better than humans in performing certain tasks.

1. Speed
Robots may be used because they are FASTER than people at carrying out tasks. This is because a robot is really a mechanism which is controlled by a computer - and we know that computers can do calculations and process data very quickly. Some robots actually MOVE more quickly than we can, so they can carry out a task, such as picking up and inserting items, more quickly than a human can.

2. Accuracy
Accuracy is all about carrying out tasks very precisely. In a factory manufacturing items, each item has to be made identically. When items are being assembled, a robot can position parts within fractions of a millimeter.

3. Hazardous (Dangerous) Environments:
Robots may be used because they can work in places where a human would be in danger. For example, robots can be designed to withstand greater amounts ofHeat, Radiation, Chemical fumesthan humans could.

MOTORIZED STAIRLIFT

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ABSTRACT

A stairlift is a mechanical device for lifting people and objects upwards and downwards on the stairs, who may find difficulty in doing so themselves. A stairlift can be used as a Material Handling System. For sufficiently wide stairs, a conveyor is mounted to the treads of the stairs. A chair or lifting platform is attached to the conveyor. Stairlifts can be mounted on the stairs without altering the civil structure. This lift runs on electric power and consists of a motor, reduction gear box, chain drive, a ladder with conveyor system.

A DC motor is used in this system to reverse the polarity of the power supply, causing the motor to run in reverse. The conveyor runs in upward or downward direction with the help of 6 pin reverse forward switches and push buttons. As guide pulleys are attached to conveyor belts, the movement of the conveyor is like a linear tracking system. Compared to conventional hydraulic lifts, there are some advantages like no civil work or alteration needed, low cost, less bulkiness, less power, less maintenance requirements, easy design, easy installation.

Keywords: Stairlifts, Conveyor, Pulley, DC motor.

INTRODUCTION

The number of patients with disabilities is on the rise according to the first official report "the global disabled persons report", there are 650 million people which are about 10% of the global population are disabled in the 1970s, and now the number has increased to 15%. Aging population who has chronic diseases is rising which makes the proportion of disabled persons expand.

The following picture (Figure 1.1) is about the proportion change of elderly people and younger people from 1950 to 2050, the percent of the young children is decreasing from 13% to 6%, in contrast to the percent of elderly population which keep increasing sharply.

BTH had a collaboration agreement with the government and the projects. of recent years had been focused on making life easier for the disabled and elderly people. The previous students in BTH had already designed some wheelchairs like "Electric wheelchair for easy access to toilet", This device can also prevent the wheelchair from overturning backward, and improve the security and comfort of the wheelchair. Locking system is added which is used to lock the wheelchair while climbing up and down stairs, making sure it can only move in one direction, and protect the wheelchair from slipping down. And combining the principle of ergonomics: a desk, shopping basket is added, and a curved seat is designed which makes the seat more comfortable and convenient. Then all parts of the wheelchair are modelled in Autodesk Inventor, and the strength of the important components of the wheelchair will be simulation analyzed.

OBJECTIVES

- To develop a lifting system which can be helpful for disabled people.

- To introduce a cost friendly solution for material handling to the upstairs.

- To design a safe lifting system which can easily be installed.

- To give a solution for the old buildings where typical lift cannot be installed.

- To determine the working efficiency and beneficial working of the stairlift.

- To determine the load carrying capacity of the stairlift.

CRABY STEERING SYSTEM

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ABSTRACT

In present the car steering system is 2 wheel steering system and in conventional steering system there are only two wheels are moving while taking the turn , either forward two or the rear two wheels . While in 4 wheel steering system the rear and front both wheels are act +ive and can guide in steering. Here we using MARUTI-800 car as a reference model. We have developed a optimized 4 wheel steering system for implementation of mechanism that can give the work in changing in-phase and counter-phase steering of rear wheels depending upon the condition of turning and lane changing with respect to front wheels, thus enhancing the manoeuvrability of as edan in accordance with its speed.

Keywords: 4 Wheel steering system, octa steering, craby steering mechanism, steering system

I. INTRODUCTION

In current scenario most of the vehicles have only front wheels steering mechanism or use only front wheels for changing the direction of vehicles. But there are some limitations for this system, like less turning radios or front tyre wear due to more action of wheels, problem while get free from congested place etc. To overcome these issues we introduce CRABY MECHANISM. This mechanism will help us to reduced this kind of problems by giving our vehicle front as wheel as horizontal movement . In this mechanism vehicle will free to move at very tight corners as well as at any directions. In order to reduce the turning radius of the vehicle we need the opposite phase configuration of four wheel steering system. The main intension of this project is to reduce the turning radius of a vehicle as much as practically possible without crossing the practical limits of design and assembly of   the components of the steering system. Based on these requirements, a four wheel symmetric steering system is analyzed using kinematic approach and a conclusion is drawn regarding the geometry of the optimum steering system and the effect of this on the turning radius of the vehicle. This system is seen not to cross any practical limitations of the vehicle in terms of assembly and spacing. Also the wheels are turned to the optimum extent possible and not exceeding this limit.

II. LITRATURE REVIEW

Er. Amitesh Kumar, Dr Dinesh N Kamble[1] has discussed that, Conventional Steering mechanism involves either the use of Ackerman or Davis steering systems. The disadvantage associated with these systems is the minimum turning radius that is possible for the steering action. This difficulty that is associated with the conventional methods of steering is eliminated by employing a four wheel steering system.

Saket Bhishikar, Vatsal Gudhka, Neel Dalal, Paarth Mehta, Sunil Bhil, A.C. Mehta[2] A has discussed that t, A model for 4WS system is created to test all the possible cases available in four wheel steering system. Four wheel steering system is critical and it is also popular in large farm vehicles and trucks. Some of the modern steering found it most widespread use in monster trucks, intercity buses also utilizes four wheels steering to improve road stability. The four-wheel steering mechanism is developed so that both front and rear wheel actively participate during turning, lane changing.

Ravi Shankar, Kumar Saumya, Sujeet Kumar, Saurabh Kumar, Praveen Kumar , Jitendra Kumar ,Ashis Saxena and Hitendra Bankoti [3]: The rack and pinion mechanism is commonly used to convert the rotary motion into linear motion. This mechanism contains a circular gear and teeth on a linear shaft. The circular gear is called pinion and the teeth on a linear shaft is called a rack. The rack and pinion steering mechanism are simple in construction and friendly to drive. The mechanism consists of a pinion at the end of the steering column that meshes with the rack. The pinion is fixed to the steering column at its end. As the pinion is in contact with the rack, the rotary motion given to pinion is converted to linear motion by the rack. To meet all the steering requirements the rack and pinion steering must be precise and direct under normal driving conditions. A manual rack and pinion gear suitable for a solar car. It is found that the simulation results are higher than the theoretical calculations.

X.   PROBLEMDEFINITION

1. Parking Problem:-

The increase in the population and reduction in the free land for easy and wide parking is not possible now days.

MULTIPURPOSE SIEVING MACHINE

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ABSTRACT
A sieve is a device for separating wanted elements from unwanted material or for characterizing the particle size distribution of a sample, typically using a woven screen such as a mesh or net. This project focuses in design, fabrication of the mechanical part of machine and the system of the sieve machine. To achieve this project objective, this sieve machine body structure and mechanical system needs to concern some other criteria such as strength, safety and ergonomic design. Depending on their size the individual particles either pass through the sieve mesh or retained on the sieve surface. There are different machines that are being used for sand sieving processes. In our project the process will takes place automatically. Thus, the time consumed during the whole process is reduced.
Keywords: Sieving Machine, Sand Sieving Machine, Sieving Machine Fabrication, Automatic Sieving

I. INTRODUCTION
Today's world requires speed in each and every field. Hence rapidness and quick working is most important. Now a day for achieving rapidness, various machines and the equipment are being manufactured. In such a modern era of liberalization, small scale industries are contributing in a big way to the growth of our country. New machines and techniques are being developed continuously to manufacture various products at cheaper rates and high quality. This project focuses in design, fabrication of the mechanical part of machine and the system of the sieving machine. Sieving Machine mainly depends on converting rotary motion provided by AC motor. With the help of pulley attached to motor the Rotary Motion is converted into Reciprocating Motion with help of Connecting Rod and Wheels. The horizontal sieving machine is worked on the basis of crank and slider mechanism. The sieving box is placed inside the rail track and the machine is started. When the sieving box moves in the reciprocating motion the sieving process is performed. Sieving is an uncomplicated practice for sorting out the particles of different sizes. Generally, while preparing the concrete for construction purpose, the process of sieving is carried out manually. Sieving of sand is carried out using rectangular mesh which is inclined at certain angle. In the present sand sieving method, the sample is subjected to horizontal movement in accordance with the chosen method. This causes a relative motion between the particles and the sieve. Depending on their size the individual particles either pass through the sieve mesh or retained on the sieve surface. There are different machines that are being used for sand Sieving, but we demonstrate the design & fabrication of automatically driven sand sieving machine which have low cost and simple in operation. For small scale farming in rural areas the main aim of the cultivator is over domestic use. The harvest is usually a small bulk. Therefore, they are not taken in for refining in major refining factories. Here we generate an idea to solve the problem of filtering or refining the harvested crops mainly grains, cardamom etc. This project is a domestic sieving machine which can be used to separate or sieve or filter out dirt and unwanted particles from the harvested crops. The machine is compatible and requires only a limited amount of space. The machine can also sort out stones and other unwanted particles from purchased goods or stored crops.

II. LITERATURE REVIEW
A. Design and Fabrication of Domestic Sieving Machine
Alan Biju, Alwin Thomas, Akash J Kalarickal, Jeswin Jose, Rittin Abraham Kurien, Conventional practices like winnowing require highly expertise hand movements considering gravity, aerodynamics and centrifugal force. This is the major difficulty observed in the winnowing process. Nowadays people always prefer the most suitable way to save time and energy. This project proposes a domestic sieving machine which can easily remove unwanted particles from the grains, nuts and other pulses automatically.

B. Automatically Driven Sand Sieving Machine
P.R. Gajbhiye, Rupesh Khode Pratik Sukhadeve ,VickyChaple
Construction of buildings requires sand as an important ingredient Sand is used at different stages in construction right from the foundation to the finishing work i.e. plaster. This sand is needs to be screened properly for various stages in construction, i.e. size of sand for construction work is slightly coarse whereas that used for plaster work is fine These processes are carried out manually. Sieving of sand is carried out using rectangular mesh which is inclined at certain angle. This causes a relative motion between the particles and the sieve. Depending on their size the individual particles either pass through the sieve mesh or retained on the sieve surface

ACCIDENT PREVENTION SYSTEM USING EYE BLINKSENSOR

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ABSTRACT

The aim of this project is to design an Accident Prevention System which helps in preventing/avoiding accidents. Accident due to cause of drowsy is prevented and controlled when the vehicle is out of control. The accidents due to the drowsy state of the driver is prevented using automatic breaking system by using eye blink sensor and accelerometer. In recent times drowsiness is one of the major problems of highway accidents. The accidents occurred caused by drowsy and when driver wakes up he can't be able to control the vehicle. The drowsiness is indented by the eye blink closure and blinking frequency through infrared sensor worn by driver by means of spectacles frame or IRS. If the driver is drowsy, then the system will give buzzer and the speed of the vehicle is reduced in 3 to 5 sec. Also accelerometer sensor is mounted on spectacles frame for measuring head tilting angle of driver. The advantage of this project is to less the number of accident and also save the lives of human beings and also creating a new theory of accident detecting system in this competitive world, as new technology is going to lead the globe.

Keywords: Eye Blink Sensor, Accelerometer Sensor, Accident Prevention System, Relay Circuit, Braking System.

I. INTRODUCTION

The drowsiness [a feeling of being sleepy] is one of the reasons responsible for the vehicle accidents. Around 30 percent accidents are occurs due to drowsiness of the driver. The driver drowsiness can be detected by checking driver response. One of the methods for detecting eye blinking of the driver is by making use of IR sensor. The IR sensor is used to see the blinking of eyes of the driver. If the eyes are closed for certain period it will sense by IR sensor. The information of eye blink is send to microcontroller from IR sensor and makes the device work. Hence drowsiness of the driver is prevented and results in reduce percentage of accidents. Vehicle accidents are most common if the driving is inadequate. These happen on most factors if the driver is sleeping or if he is alcoholic. This Paper was focused mainly on road accidents occurring due to drowsy state of drivers in four wheelers. As the fatality rates due to growth of accidents IS increase ingday by day,the below method sareimplementedtodecrease the fatality rate. Driver drowsiness is recognized as a crucial aspect in the vehicle accidents. It was demonstrated that driving performance deteriorates with increased sleepiness with resulting vehicle accidents. But the life lost once cannot be re- winded. Advanced technology over's some hope avoid these up to some extent. This project involves measure and controls the eye blinking using IR sensor. The IR transmitter is used to transmit the infrared rays in our eye. The IR receiver is used to receive the reacted infrared rays of eye. If the eye is closed means the output of IR receiver is high other side the IR receiver output is low. This to know the eye is closing or opening Position. This output is given to circuit to indicate the alarm. This project involves controlling accident due to unconscious through Eye blink. Here one eye blink sensor is in vehicle where if anybody looses consciousand indicate through alarm. Then eye blinking sensor transfer signals to the dc motor and it starts dc gun which apply on the break and vehicle will be stops gradually. Previously the very first method of eye blink detection was made through image processing. But this sometimes contains slow processing of image and leads to more time. It needs additional set of computer or laptop which becomes complicated arrangement.

Sometimes the shocks in the vehicle due to badconditions of the road may damage the program stored in laptop or computer. Sothe second technique installing sensors in front of eye or in long range is the possible way to detect the accurate blinking ofeyes.

DESIGN AND FABRICATION OF GROUNDNUT SHELLER

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ABSTRACT

In a developing countries like India groundnuts is grown on small scale, so there is a lack of lack of groundnut sheller machine which are affordable. The average price of peanut is approximately twice the price of pod. There are some groundnut sheller machines are available in market but the cost is not affordable and also they are large in size so they are not suitable for domestic applications they are suitable for mass production like industrial applications. Hence it is essential to design and fabricate a portable groundnut sheller machine for domestic applications. The performance of the machine was evaluated in terms of overall capacity, shelling and material efficiency and mechanical damage. This paper describes about the working, result and conclusion of the groundnut shelling machine.

Overall, this project involves processes like design, analysis, fabrication and assembling of different components.

I. INTRODUCTION

The process of removal of the skin and bark of the beans is a very time-consuming process and requires labor. Hence machine could fasten this process and reduce labour to one man that would be very advantageous in mass production. The need of this machine is in food processing industry and in agriculture sector for de-shelling of the beans. The bean Sheller will be very efficient for mass production. The objective of this machine is to speed up the process of de-shelling and to reduce the labour work. When the beans are de-shelled manually the bean are pressed at the edge and their shell opens. Same thing happens when we thrash the bean at a hard place it opens up its shell. The same principal is used here in our bean Sheller. The beans are hit by the wooden arms and they cause the bean's skin to rupture and the beans fall in our collect.

II. OBJECTIVES

- The main and basic objective is to make low-cost groundnut shelling machine.

- Another thing is that to shell maximum possible groundnut in shortest possible time

III. LITERATURE SURVEY

Sr no	Name Of Paper/journal	Authors Name	Year of	Findings of the Paper published
1	A Review on Design and Fabrication of Groundnut Shelling and Separating	Adwal Ravindra1, Ghadge Rohit, Awad Saurav, Prof. Khare G.N	2017	The agriculture is the basic profession of vast of population world-wide. Some modifications can be done in this machine and it will be used over long scale. The scope in agricultural field is tremendous. It will definitely be a vast sector to work on to minimise man power and improve efficiency of operation, decrease cost of operation, decrease efforts.
2	Design and Fabrication of Groundnut Pods and Shell Stripper Machine.	G. Karthik, D. Balashankar	2018	This work presents the design of an electrically powered groundnut pods stripper and shelling machine. It can be used for both domestic and industrial purposes. The advantage to be derived from the use of this machine far outweighs its shortcomings. It was also observed that groundnut with one seed per pod and those with two small seeds in their pods were the ones that came out unshelled or partially shelled
3	Groundnut Peeling Shelling Machine	A.Mani1 P.Manishkumar, M.Krishna U.Karthick	2021	The main importance of this project is as this machine is battery operated it can be directly transported to the groundnut farms and can be operated without an external electric supply which is not available at most of the farms. Proper evaluation of the design will be performed and

EFFECT OF COMMUNICATION SKILLS ON STUDENTS LIFE

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ABSTRACT

The purpose of the paper is to study about the problems faced by young adults in communication skills and provide them guidance to success in personal and professional life by developing communication skills. It educates them the importance of good communication skills in teaching-learning process and in technical sector. It also emphasizes that the teacher should provide hands-on practice in soft skills and in technical sectors so that students can do communication effectively both in business and social life. The study also highlights Communication skills is an incorporating skills that can be taught by facilitating Training with Personality Development which could ensure a healthier and stronger working life after their graduation. It presents a brief of Definition of Communication, Process of Communication, Method of Communication, Barriers to Communication and Reason for Lack of Communication Skills and its Remedies. The conclusion of the study is presented with explanation of Advantage of Communication and Benefits and its results.

I) INTRODUCTION

The aim of this study is to overcome the communicational problems of young adults, especially engineering students and guide them to gain good communication skills to success in their personal and professional life. As communication is being a major part of teaching-learning process as well as a huge importance in the technical sectors, development of this skill starts when an individual has motivation and opportunity to express his/her thoughts and transfer of information through a medium to people.

In general, students develop their skills in terms of knowledge and communication in a socialize environment but not in the environment of continuously attending the class. So, in the terms of developing communication skills, the role of a teacher is very important. They have to organize number of hands-on practice activities to facilitate training in both soft skills and technical sciences. This allows students to effectively communicate with business team members and other members of social life.

II) LITERATURE REVIEW

To add weightage to the research, we referred some books, internet and research papers which had given us a lot of points to improve our views and thoughts to fulfil this activity. Recognizing these contexts, communication is regarded as one of the fundamental areas in which the function of human communication is clearly understood. However, in the literature survey, the cases of "adult education" and "communication in adult education" were ignored in Japan, and educational events planned for adults still had an educational character. For this reason, Andragogy-based communication skills training organized for young adults that was considered to serve as a guide for further research. We also examined whether the communication skills training for university students affects the level of ability to express emotions and empathy tendencies that play important roles in the communication skills of young adults.

III) IMPORTANCE OF COMMUNICATION SKILLS

The rapidly developing world, changing environment, technological advancement and the regular use of communication technology in the lives of people convince the young adults for the importance of communication skills. In the recent years, there has been frequent research on the importance of communication skills where people learnt that the communication is a multifaceted concept in many areas of interest mainly centred on people such as the healthcare field, services at the hospital, etc., which required a proper and effective communication and quality of care for all reasons.

For example, medical professionals spend most of their time in contact with patients and their families and due to their sensitive situation; communication with patients and relatives requires a gentler and friendlier approach. Therefore, it is expected that the communication skills of healthcare professionals will be effective.

Developing communication skills for health science students will enable them to communicate effectively with their patients. Communication skills are not just personal talents, they are very important in incorporating skills that can be taught. In addition, this study is believed that the Communication Skills Training and Personality Development can be prepared for college students to ensure a healthier and stronger working life after their graduation.

HYDRAULIC BRAKING SYSTEM

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ABSTRACT

Now days the no. of accident are so high and uncertainly. Accident occurs frequently and causes worse damage, serious injury and even death. Most accident takes place due to driver error in recognition, judgments or vehicle operation. This report is about a system known as 'Hydraulic Braking System' whichhas been use around on most car models since the early 1930s, with combination brake systems added to cars in the mid-1960s. Combination systems combine drum brakes with hydraulic brakes to offer backup braking support in case the vehicle's hydraulic system fails. Many modern vehicles feature solely hydraulic disc brakes because of their proven effectiveness in safety testing.

A hydraulic brake system has advantages over traditional brakes. Hydraulic brakes are more efficient than most brakes when coming to a complete stop. Hydraulics also offer better cost economically and space compared to other types of brakes.

Keywords: master cylinder, brake pedal, hydraulic lines, brake caliper, disc brake

INTRODUCTION

1.1 HYDRAULIC

Hydraulics is the use of a liquid under pressure to transfer force or motion, orto increase an applied force. The pressure on a liquid is called hydraulic pressure andthe brakes which are operated by means of hydraulic pressure are called HYDRAULIC BRAKES. In 11118, Malcolm Lougheed developed a hydraulic brakesystem. The hydraulic brake is an arrangement of braking mechanism which usesbrake fluid, typically containing ethylene glycol, to transfer pressure from thecontrolling mechanism to the braking mechanism. Hydraulic Brake is arrangementwhich uses brake fluid under certain pressure to actuate the brakes. Thus, brakes areapplied to stop the rotating wheel.

1.2 BRAKE

A brake is a mechanical device that inhibits motion by absorbing energy from a moving system. It is used for slowing or stopping a moving vehicle, wheel, axle, or to prevent its motion, most often accomplished by means of friction.

Most brakes commonly use friction between two surfaces pressed together to convert the kinetic energy of the moving object into heat, though other methods of energy conversion may be employed. For example, regenerative braking converts much of the energy to electrical energy, which may be stored for later use. Other methods convert kinetic energy into potential energy in such stored forms as pressurized air or pressurized oil. Eddy current brakes use magnetic fields to convert kinetic energy into electric current in the brake disc, fin, or rail, which is converted into heat. Still other braking methods even transform kinetic energy into different forms, for example by transferring the energy to a rotating flywheel.

Brakes are generally applied to rotating axles or wheels, but may also take other forms such as the surface of a moving fluid (flaps deployed into water or air). Some vehicles use a combination of braking mechanisms, such as drag racing cars with both wheel brakes and a parachute, or airplanes with both wheel brakes and drag flaps raised into the air during landing.

Since kinetic energy increases quadratically with velocity ($K=mv^{2}/2$), an object moving at 10 m/s has 100 times as much energy as one of the same mass moving at 1 m/s, and consequently the theoretical braking distance, when braking at the traction limit, is up to 100 times as long. In practice, fast vehicles usually have significant air drag, and energy lost to air drag rises quickly with speed.

Almost all wheeled vehicles have a brake of some sort. Even baggage carts and shopping carts may have them for use on a moving ramp. Most fixed-wing aircraft are fitted with wheel brakes on the undercarriage. Some aircraft also feature air brakes designed to reduce their speed in flight. Notable examples include gliders and some World War II-era aircraft, primarily some fighter aircraft and many dive bombers of the era. These allow the aircraft to maintain a safe speed in a steep descent.

Friction brakes on automobiles store braking heat in the drum brake or disc brake while braking then conduct it to the air gradually. When traveling downhill some vehicles can use their engines to brake.

PERFORMANCE ON SHELL AND TUBE HEATEXCHANGER

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ABSTRACT

Heat transfer is one of the most important processes inside the industry so increasing heat exchanger efficiency has a great use and major beneficial effect to the heat transfer. The project objective is to design an experimental system of shell and tube heat exchanger. Shell And Tube heat exchanger are widely used in industries due to their versatility. Different types of shell and tube exchangers can be easily configured by changing the shell and tube arrangement. In this project design and fabrication of a simple shell and tube heat exchanger is done. In this project different calculations are done in order to find the optimum heat transfer using limited option of materials. This heat exchanger consists of a MS shell and tubes which pass inside the shell and are supported with the help of baffle plates and there are two inlet and outlet ports for the water to flow inside of shell and tube. In present day shell and tube heat exchanger is the most common type heat exchanger widely used in oil refinery and other large chemical process, because it suits high pressure application.

1. INTRODUCTION

A heat exchanger is a system used to transfer heat between two or more fluids. Heat exchangers are used in both cooling and heating processes. The fluids maybe separated by a solid wall to prevent mixing or they may be in direct contact. The classic example of a heat exchanger is found in an internal combustion engine in which a circulating fluid known as engine coolant flows through radiator coils and air flows past the coils, which cools the coolant and heats the incoming air. Heat exchangers are one of the mostly used equipment in the process industries. Heat exchangers are used to transfer heat between two process streams. One can realize their usage that any process which involve cooling, heating, condensation, boiling or evaporation will require a heat exchanger for these purpose. Process fluids, usually are heated or cooled before the process or undergo a phase change. There are different types of heat exchanger

- Double Tube Heat Exchangers

- Shell and Tube Heat Exchangers

- Tube in Tube Heat Exchangers

- Plate Heat Exchangers

- Finned heat exchanger

- Plate fin heat exchanger

- Compact heat exchanger

- Plate shell heat exchanger

Different heat exchangers are named according to their application. For example, heat exchangers being used to condense are known as condensers, similarly heat exchanger for boiling purposes are called boilers. Performance and efficiency of heat exchangers are measured through the amount of heat transfer using least area of heat transfer and pressure drop. A typical heat exchanger, usually for higher pressure applications up to 552 bars, is the shell and tube heat exchanger. Shell and tube type heat exchanger, indirect [6] contact type heat exchanger. It consists of a series of tubes, through which one of the fluids runs. The shell is the container for the shell fluid. Generally, it is cylindrical in shape with a circular cross section, although shells of different shape are used in specific applications. For this particular study shell is considered, which is generally a one pass shell. A shell is the most commonly used due to its low cost and simplicity, and has the highest log-mean temperature-difference (LMTD) correction factor. Although the tubes may have single or multiple passes, there is one pass on the shell side, while the other fluid flows within the shell over the tubes to be heated or cooled. The tube side and shell side fluids are separated by a tube sheet. Baffles are used to support the tubes for structural rigidity, preventing tube vibration and sagging andto divert the flow across the bundle to obtain a higher heat transfer coefficient.

2. PROBLEM DEFINATION

Shell and tube heat exchanger is the most common type of heat exchanger used in industries. In this project, the design of a shell and tubeheat exchanger unit has been carried out. The task at hand was to design and fabricate

LITERATURE REVIEW ON: DEVELOPMENT OF FLOATER MATERIAL

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ABSTRACT

Solar Energy is one of the most abundant renewable sources of energy and free on planet earth. For water mounted solar photovoltaic systems, HDPE material is found to be best suited for the manufacturing of floating bed structure. The major limitation in this regard is the effect of UV radiations present in the natural environment that leads to the degradation of plastic materials. In the present study, the Carbon nanotube is used as a additive which is mixed with the base HDPE material under different concentration. The behavior of the HDPE/ Carbon nanotube composite floats so formed is observed before and after U.V exposure. The change in properties of material will be observed from several test that is Tensile, Impact, Flexural and Hardness Test.

INTRODUCTION

Floatovoltaics is a solar power structure that floats on a body of water it may be artificial basin or a lake. This technology has had a rapid growth on the renewable energy market since 2016. The first 20 plants, of a few dozen of kWp have been built between 2008 and 2014 as reported in the MIRARCO paper that analyzed the birth of this technology.[1] The installed power reached 1.1 GW in 2018.The costs for a floating system are 20-25% higher than for ground-mounted systems.[2] Solar energy appears to be heading toward a global growth spurt, due to a combination of new technology and expanding reach to consumers as it becomes more competitive with the cost of traditional energy sources.[3] "Floating solar allows for power generation to be sited much closer to areas where demand for electricity is high," the World Bank report, published in October 2018, predicted. "This makes the technology an attractive option for countries with high population density and competing uses for available land."[3] While solar floaters are slightly more expensive than arrays built on land, they are more efficient producers of electricity because their nearness to the water allows their solar panels to run cooler.[4] Floaters are generally made up of HDPE material used in current market and from blow moulding process. This is the most crucial component of FSPV; it supports all necessary components like solar PV during the project time. Hence selection of appropriate materials for the floating platform becomes imperative. HDPE is the most popular material being used in a majority of the FSPV power plants across the globe. Other materials like FRP, medium density polyethylene (MDPE), and Ferro-cement are also been utilized as materials for the floating platform. Various designs of a floating platform are described below.[5] HDPE is preferred by the pyrotechnics trade for mortars over steel or PVC tubes, being more durable and safer: HDPE tends to rip or tear in a malfunction instead of shattering and becoming shrapnel like the other materials. Milk bottles, jugs, and other hollow goods manufactured through blow molding are the most important application area for HDPE, accounting for one-third of worldwide production, or more than 8 million tones. [38] A carbon nanotube (CNT) is a tube made of carbon with diameters typically measured in nanometres. Single-wall carbon nanotubes (SWCNTs) Single-wall carbon nanotubes are one of the allotropes of carbon, intermediate between fullerene cages and flat graphene, with diameters in the range of a nanometre. Although not made this way, single-wall carbon nanotubes can be idealized as cutouts from a two-dimensional hexagonal lattice of carbon atoms rolled up along one of the Bravais lattice vectors of the hexagonal lattice to form a hollow cylinder. In this construction, periodic boundary conditions are imposed over the length of this roll-up vector to yield a helical lattice of seamlessly bonded carbon atoms on the cylinder surface. Multi-wall carbon nanotubes (MWCNTs) consisting of nested single-wall carbon nanotubes weakly bound together by van der Waals interactions in a tree ring-like structure. If not identical, these tubes are very similar to Oberlin, Endo, and Koyama's long straight and parallel carbon layers cylindrically arranged around a hollow tube. Multi-wall carbon nanotubes are also sometimes used to refer to double- and triple-wall carbon nanotubes. Carbon nanotubes can also refer to tubes with an undetermined carbon-wall structure and diameters less than 100 nanometres. Such tubes were discovered in 1952 by Radushkevich and Lukyanovich. The length of a carbon nanotube produced by common production methods is often not reported, but is typically much larger than its diameter. Thus, for many purposes, end effects are neglected and the length of carbon nanotubes is assumed infinite. Carbon nanotubes can exhibit remarkable electrical conductivity, while others are semiconductors. They also have exceptional tensile strength and thermal conductivity because of their nanostructure and strength of the bonds between carbon atoms. In addition, they can be chemically modified. These properties are expected to be valuable in many areas of technology, such as electronics, optics, composite materials (replacing or complementing carbon fibers), nanotechnology, and other applications of materials science. Rolling up a hexagonal lattice along different directions to form

LITERATURE REVIEW ON: DEVELOPMENT OF COMPOSITE MATERIAL

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ABSTRACT

Floating solar power plant is an innovative approach of using photovoltaic modules on water infrastructures to conserve the land along with increase in efficiency of the module. Additionally, the water is also conserved due to reduction in evaporation of water from the water body. The plant can be installed on a pond, lake, reservoir, or on any other water body. This paper focuses on the floating PV technology, describing the types of floating PV plant along with studies carried out on some floating solar plants. India, In this project we are about to study, The material used in floater is mainly HDPE (high-density polyethylene). We are also going to study about different types of material used in floater and its properties. There are also different types of test in floaters and different type of designs in floater. The report also covers the best practice guidelines for installing FSPV projects.

Keywords: HDPE, floater, graphene

INTRODUCTION

FSPV also known as floatovoltaics is a solar PV application in which PV panels are designed and installed to float on waterbodies such as reservoirs, hydroelectric dams, industrial ponds, water treatment ponds, mining ponds, lakes, and lagoons. In this, solar panels are usually mounted upon a pontoon- based floating structure and to keep its location fixed, floating structure is anchored and moored. Recently there has been an interest in FSPV globally as well as in India. Further, it is also seen that if the capacity of FSPV deployment is scaled up, the tariff may also come down closer to the tariff discovered for ground-mounted solar PV. Recently, environmental problems associated with the excessive use of fossil fuel have become social issues. As an alternative energy resource, the importance of renewable energy is continuously rising. Moreover, the demands for facilities to generate renewable energy are also ever increasing. In Japan, after the Fukushima Daiichi nuclear power plant disaster, a law was enacted for the development of the solar industry, wind power industry, etc. In Korea, the renewable portfolio standard (RPS), which requires electricity providers to gradually increase the amount of renewable energy sources such as wind, solar, bioenergy, and geothermal, was enacted to ensure the growth of the renewable energy market. floating photovoltaic (FPV*) installations are forecast to increase 143% from 2019 to reach over 900 MW in 2020 according to IHS Markit's 'Floating PV Report - 2020'. The total installed capacity at the end of 2019 was estimated to have reached 1.5 GW. When combined with other demonstrated benefits—such as higher energy yield, reduced evaporation, and in certain cases improved water quality—FPV is likely to be an attractive option for many countries. Several countries with high population density are looking at large-scale floating solar deployment in order to avoid using their scarce land resources for solar power generation. It is estimated that the annual capacity addition may rise from the current installed of 1.314 GWp in 2018 to 4.6 GWp by 2022. Presently, China is the leading international market followed by Japan and South Korea. India also has very bright prospects to develop FSPV projects due to availability of large water bodies. FSPV market appears to inch forward to make its presence felt in India and the tariffs discovered through bids have already shown rapid reductions. So far large-to-medium size man-made inland waterbodies seems to have attracted initial interest to install FSPV based power plants, but all these 4waterbodies were created to serve various purposes like irrigation, water supply, fishing, hydroelectric, navigation etc., and this warrants great deal of diligence to balance out various usages of these waterbodies on the basis of accurate information. The Energy and Resources Institute (TERI), New Delhi, India with support from the Energy Transitions Commission (ETC), India, has undertaken a study to analyses data on country's medium and large reservoirs to estimate the potential of FSPV in the country. It is observed that about 18,000 km2 water surface area spreading across various states and UTs is suitable for the installation of FSPV plants. The overall potential is a strong indication of the extent of the surface area than can be made available for setting up these projects, and even a capacity of about 280 GW is possible. The various factors determining the overall potential include percentage of water surface area coverage, water level variations, the purpose of the water body, and proposed plant location. A majority of the installations utilized a floating pontoon constructed either from fiber-reinforced plastic (FRP), Medium Density Polyethylene (MDPE) or Forcemeat, High-Density

Polyethylene (HDPE). The solar PV modules were supported on these pontoons through the use of metal structures and were inclined in a majority of cases to maximize the solar incidence.

TWO WHEELER AIR BAG SYSTEM

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ABSTRACT
The Airbag system is first introduced in 4-wheeler vehicles, this paper gives an information about the introduction of the airbag system can be used in the two wheelers(bikes) this paper shows the working, construction, installation and what will be problems can occurs are discussed.Theconceptofthisairbagsystem is "Toreducetheinjuries to a rider when impacting with an opposing vehicle and/or opposing object in frontal collisions by absorbing rider kinetic energy and by reducing rider separation velocity from motorcycle in the forward direction."With the help of the ANGLE sensor with an angle indicator and sense of the collision and the large frequency vibration for to open the air bag.

Keywords: Typical VRF System, castor wheel, Lathe, Relay circuit, Angle sensor, Airbag.

I. INTRODUCTION

Nowadays the increment in the death rate of India is 20% because of the accidents on the highways hence this invention can help us to reduce the death rate by 7% to 10% since this can be used in the pedestrian and safety department. In 4 wheeler vehicle the operation is based on the collision of two vehicles or collision with any object. This system is installed in dashboard and the battery power is consumed for working of this system.

In the 2-wheeler system there is installation of the airbag system in between and at both sides of the bike. There is usage of the battery of bike for working of system. There are two cases when system runs by both the angle difference calculation and collision of the 2 bikes or by the any accident of bike with any object. The concept of this airbag system is "To reduce the injuries to a rider while affecting with an opposing vehicle as well as restricting object in frontal crashes by absorbing rider kinetic energy and by decreasing rider detachment speed from motorcycle the forward way." With the help of the ANGLE sensor with an angle indicator and feeling of the impact and the vast large vibration for to open the air bag. The Airbag system was first introduced in 4-wheelers. This paper gives information about the introduction of the airbag system can be used in the two wheelers(bikes). This paper shows the working, construction, installation of this system and problems that can occur in this system. Accident involving two wheeler are assuming a significant social cost and there dynamics is really more complex and diversified than accident involving only bike and there occupant .since the kinematics of biker body can influenced by a wide range of variable ,so motorcycle air bag must be compliant with far more specification than an automotive one and need a more bikeeful and accurate design often also totally different design approach is required there are two different kind of air bag for motorcyclist mounted on vehicle or fitted in bikers garment. The inflation of the device mounted on the motorbike is activated by one or more accelerometer put on the vehicle or even the wheel mount, to get earlier information when a frontal impact occurs. the bag itself is generally quite big (150liter) and to obtain acceptable inflation time a pyrotechnic inflator is used.

II. DESIGN WITH REQUIRED ISTRUMENTS
The following instruments are utilized for the 2 wheeler Airbag system –

1. Air bag (leather material with grasp innovation)

2. Chemical chambers for discharging the air or gas

3. Sensors (angle sensor)

4. Inflator

Air Bag (Leather Material with Grip Technology)
Airbags are stretchable fabrics or other materials that are tightly packed in various locations throughout your vehicle. These bags are compressed and kept in a small area. When there is an accident, the airbags fill up with air very quickly to provide a cushioning system for the people on the motorcycle so that they are not thrown around in the event of a crash. While this does not necessarily prevent total injury or death, it can be very helpful in cushioning the passengers in many cases.

POWER GENERATOR THROUGH EXHAUST

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ABSTRACT

In this project, we modify a stationary diesel engine for producing power using turbine. Nowadays in automobile field many new innovating concepts are being developed. We are using the power from vehicle exhaust to generate the electricity which can be stored in battery for the later consumption. In this project, we are demonstrating a concept of generating power in a stationary multiple cylinder diesel engine by the usage of turbines. Here we are placing a turbine in the path of exhaust in the silencer. The turbine is connected to a dynamo, which is used to generate power. Depending upon the airflow the turbine will start rotating, and then the dynamo will also start to rotate. A dynamo is a device which is used to convert the kinetic energy into electrical energy. The generated power is stored to the battery. It can be stored in the battery after rectification. The rectified voltage can be inverted and can be used in various forms of utilities.

Keywords: Power generation, turbine, nozzle, dynamo, ecofriendly.

- **INTRODUCTION**

In recent the years the scientific and public awareness on environmental and energy issues has brought in major interests to the research of advanced technologies particularly in highly efficient internal combustion engines. Viewing from the socio-economic perspective, as the level of energy consumption is directly proportional to the economic development and total number of populations in a country, the growing rate of population in the world today indicates that the energy demand is likely to increase. A heat engine is a system that performs the conversion of heat or thermal energy to mechanical work. Examples of everyday heat engines include the steam engine, the diesel engine, and the gasoline (petrol) engine in an automobile. Heat engines are designed to produce useful work only. The efficiency of a modern internal combustion engine is about 37% in a normal spark ignition engine. The energy in the form of heat is rejected by means of exhaust, circulating cooling water, lubrication oil & radiation.

Substantial thermal energy is available from the exhaust gas in modern automotive engines. Two-thirds of the energy from combustion in a vehicle is lost as waste heat, of which 40% is in the form of hot exhaust gas. There are many developments and technologies on waste heat recovery of exhaust gas from internal combustion engines (ICE).

If our idea is implemented effectively, the potential for energy conservation is massive. The report deals into the Working, Hardware requirements, and the advances made so far in implementing the idea. It also hints at future modifications intended.

Figure 1: Model

- **LITERATURE REVIEW**

Generation of Electricity by Using Exhaust from Bike by S.Vijaya Kumar, Amit Kumar Singh, Athul Sabu and Mohamed Farhan.P[1]: - According to their study, it has been identified that there are large potentials of energy savings through the use of waste heat recovery technologies. Waste heat recovery entails capturing and reusing the waste heat from internal combustion engine and using it for heating or generating mechanical or electrical work.

SOLAR POWERED PORTABLE PELTIER REFRIGERATOR

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ABSTRACT
The fruits, vegetables and medicines require to store in refrigerator the continuous provision of electrical energy is require so that their efficacy is not affected. This represents an important problem for rural areas where there is no continuous electrical energy. In this work, we design a solar energy system for refrigeration of cold storage medicines to be used in rural towns without giving continuous electrical. The system uses a thermoelectric refrigerator based on the Peltier effect, which produces a temperature difference when electrical power is provided to it. It will be shown that for a typical application for food refrigeration, the required solar panel is about 100W peak connected to batteries with a storage capacity of 20Ah. The designed refrigeration system have 18 litre volume capacity of vaccines at temperatures in the range between 8° to 10°C using a Peltier cell (TEC) that consumes 30 W at 12V.

Keywords: Refrigeration, Thermoelectric, Solar energy, Peltier.

INTRODUCTION
There are Several types of Refrigeration in market that are designed to produce cooling. Thermoelectric is one of them. It is also known as Peltier Effect The main objective of our project is to produce cooling effect by using the Peltier Module. By using the vapour compression refrigeration system we neglect the harmful refrigerant and usage of green-house gases and CFC's. For protecting our environment thermoelectric refrigeration is used. The Peltier effect is the reverse phenomenon of Seebeck effect. The Peltier effect is created a temperature difference by transferring heat between two electrical junction when a circuit of two dissimilar metal and two junction is formed a current will flow between the junction or the circuit this phenomenon is known as Seebeck effect. Peltier effect is discovered by French physicist Jean-charles-Athanase -Peltier.

Due to increasing refrigeration in various field led to production of more electricity and henceforth more release of harmful gas like $CO2$ all over the world which is contributing factor of global warming on climate change. Thermoelectric refrigeration is a new method the thermoelectric modules are made of many P-type and N-type semiconductor couples which are electrically connected series configuration of thermally in parallel to create cold and hot surface. Many researchers reported that the Peltier thermoelectric refrigeration system have small size, less weight, no refrigerant and no moving part such as compressor and it can be operated using DC power supply the TEC are used in like consumer product, Industrial, Science and imaging, military, aerospace thermoelectric can be used to heat and cool, depending on the direction of current In an application requiring both heating and cooling mode

Throughout the world refrigeration is a critical means for storing medicine and essential item whose require low temperature in Rural areas. Because of expensive and require high watt power electricity so rural areas people facing problem for storing medicine and food. our objective is to brought the refrigeration in rural areas for people in low cost, solar powered and portable to use everywhere so people are not deprived for essential medicine and food.

LITERATURE REVIEW
- Awasti, M., & Mali, K. (2012). Design and Development of Thermoelectric Refrigerator. International Journal of Mechanical Engineering and Robotics Research(Volume No. 3). The retention time achieved was 52 min with the designed module in this project. In order to achieve the higher retention time, another alternative was incorporate. This consists the additional heater on heat sink.

- Chetan Jangonda, K. P. (2016). Review of various Apllication of Thermoelectric Module. Thermoelectric cooling added a new dimension to cooling. It has major impact over conventional cooling system. It is compact in size, no frictional elements are present, no coolant is required and weight of the system is low.

- D. SUMAN, P. H. (2020). Design And Fabrication Of Thermoelectric Refrigerator Using Peltier Module. The efficiency and life of the Peltier refrigerator are maximized by using these water pockets and the temperature was controllable by changing the input voltage and current so we can maintain the things in the required temperature. Finally, it has been recorded the minimum temperature i.e., 2°c

BRIQUETTING MACHINE

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ABSTRACT

The objective of this study explores technology, implementation, and possible commercialization of charcoal briquettes derived from organic waste through thermal treatments in emerging markets. Given the lack of formal and centralized waste management system in emerging markets, we present a low-cost thermal treatment system to produce charcoal briquettes derived from organic waste. Bio digestion, composting, and other waste-to-energy technologies represent possible solutions to this problem, however due to technological, infrastructural, and logistical reasons these technologies have not hit the required scale to tackle the significant volume of organic waste generated in urban areas. With lack of infrastructure or technology for proper composting or recycling, organic waste represents little to no monetary value for waste picker cooperatives who operate and serve as de-facto waste collectors from urban households. The briquetting technology available is mostly for the upscale business for mass production and which is not feasible for the macro organizations or an individual we have also proposed a solution to it in this project, which is economical and feasible for such organizations or an individual.

Keyword: Briquettes, Renewable energy, Biomass, Agricultural residue

INTRODUCTION

Sequel to the increasing adverse environmental impacts related to the use of conventional fossil fuels, there is strong interest worldwide in the development of technologies that exploit renewable energy sources; and new measures to limit greenhouse gas emissions are continuously sought. Biomass, a naturally abundant domestic energy source is seen as the most promising energy alternative to mitigate greenhouse gas emissions Waste agricultural biomass is often under- utilized, more also there is rapid increase in volume and types of waste agricultural biomass produced worldwide due to intensive agricultural activities in the wake of population growth and improved living standards. In Nigeria particularly, with a population of over 170 million people, agriculture is the mainstay of the economy contributing more than 40% of the gross domestic product (GDP). In addition, agricultural sector employs more than two-thirds of the total country's work force and provides livelihood for more than 90% of the rural population The varying categories of these agricultural wastes is becoming a burgeoning problem as rotten waste agricultural biomass emits methane and leach ate while open burning by the farmers to clear the lands (a practice very widely practiced in Nigeria) generates CO2 and other local pollutants. Generally, the agricultural wastes in Nigeria could be grouped in to two major classifications; namely the crop residues and the agricultural industrial residues. The major crop residues in Nigeria are the sugarcane trash; straws of millet, corn, wheat, sorghum; maize stalks and cobs; cotton stalks; leaves; roots; barks; branches different types of fibrous materials. The common agricultural industrial residues include timbering residues; oilseeds shells such as groundnut, palm kernel and coconuts; rise husks; cotton wastes; cassava peels; sugarcane bagasse etc. The aim of this work is to use one of the ubiquitous agro- waste: the corncobs to produce and characterize briquette charcoal, and to draw comparisons with the properties of a selected biofuel.

LITERATURE REVIEW

1) Harshita Jain, Y.Vijayalaxmi, T.Neeraja, has studied in their paper named "Preparation Of Briquettes using biomass combinations and estimation of its calorific value" An experimental research design was adopted to conduct the present investigation. For the present study six biomass materials namely Charcoal Dust, Saw dust Rice Husk, Dry Leaves, Wood Chips, Groundnut Shells and two binders namely Cow dung and Starch were identified. The commercially available briquetting machine of five horsepower motor was selected for making the briquettes. Subjective evaluation of physical properties of briquette i. e. texture, cohesiveness, moisture, shape, evenness of surface and appearance of surface was conducted by a panel of six judges comprising of staff and PhD graduate students of College of Home Science. The data obtained from the experimental tests was compiled, tabulated and statistically analysed by mean and standard deviation. The data obtained from subjective evaluation was consolidated by averages, standard deviation. The calorific value of all prepared briquettes was measured by using bomb calorimeter. The results indicate that briquettes made from charcoal dust and other biomass materials with starch combinations were found to be best in physical characteristics with highest scores whereas briquettes made from charcoal dust other biomass materials with cow dung combinations were found to be highest in calorific value. The results show that when cow dung is used as

IOT BASED AIR POLLUTION MONITORING SYSTEM

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ABSTRACT

The increased level of air pollution in big cities has become a major concern for several organizations and authorities because of the risk it represents to human health. In this context, the technology has become a very useful tool in the contamination monitoring and the possible mitigation of its impact. Particularly, there are different proposals using the internet of things (IoT) paradigm that use interconnected sensors in order to measure different pollutants. In this paper, we develop a systematic mapping study defined by a five-step methodology to identify and analyze the research status in terms of IoT-based air pollution monitoring systems for cities. The study includes implementation in a real environment. We analyze and compare these proposals in terms of different parameters defined and highlight some challenges for air quality monitoring systems implementation into the city context. The system uses MQ135, MQ6 AND MQ7 and MQ6 sensor for monitoring Air Quality as it detects most harmful gases and can measure their amount accurately.

Keywords: IOT, new technology, air quality monitoring.

I. INTRODUCTION

The Air Excellence Guide (AEG) may be a common indicator of air quality. The Air Quality Indicator (AQI) is calculated and supported on air pollutants like CO and NO2 compounds that consume opposing possessions happening the atmosphere and human health. The Air Quality Indicator may be a range that represents the very finest meditation of a specific air unused matter at a particular time. WE propose an air quality as well as air pollution monitoring system that allows us to monitor and check live air quality as well as air pollution in an area through Internet of Things (IoT). It uses air sensors (Gas Sensor MQ135, MQ6 AND MQ7 , MQ6, MQ7), DTH11 and LDR based PM sensor to sense presence of harmful gases/compounds in the air and constantly transmit this data. In addition, system keeps measuring air level and reports it. The sensors interact with Arduino Uno (Microcontroller) which processes this data and transmits it over the application. This allows authorities to monitor air pollution in different areas and act against it [1]. In addition, authorities can keep a watch on the air pollution near schools, and hospitals areas. Normally, little concentrations area unit measured exploitation ppb (parts per billion), that represents units of mass of a material per one billion units of total mass. Parts per million (ppm) may be similar and unremarkable used unit to measure concentrations of pollutants. It determines the requirements of a new system and analyze on product and resource requirement, which is required for the successful system. The product requirement contains input and output requirements it gives the wants in term of input to produce the required productivity. The resource requirements define in brief about the hardware that are needed to achieve the required functionality. In this project WE am going to make an IoT based Air Pollution Detection Monitoring System in which WE monitor the Air Quality over a web server using NodeMCU Wi-fi device and a trigger alarm when the air quality goes down a certain level means when there is amount of harmful gases is present in the air like CO2. It shows the air quality in PPM (Parts Per Million) on APP and webpage so that WE monitor it very easily.

Figure 1: Model

DEVELOPING THE RAT REPELLENT STRIPS TO MITIGATE THE PROBLEM ARISING DUE TO RAT BITING IN AUTOMOTIVE WIRING HARNESS IN ECONOMICAL AND EFFECTIVE WAY

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ABSTRACT

The objective of the study is to find a cost-effective and environmentally friendly approach to address the problem of rat biting. The idea behind the creating strips is that it is readily removable and may be stuck in any desired location, increasing the product's adaptability. We are using two types of materials in our project: chemical and organic. We'll employ peppermint and Citronella in our organic material, and paradichlorobenzene in our chemical stuff. These materials include strong odorant components that irritate mice's nasal cavities, preventing them from approaching the strips. The exterior coating of the strips is made of PVC for safety reasons. PVC is a naturally fire-resistant substance.

Keywords: Automotive wiring harness, harness Damage, Rat biting, Rat Repellent, Removable Strips.

INTRODUCTION

As everyone knows, the auto business is booming, and new models are being introduced on a regular basis. Every day, new technology that is cutting-edge and comfy is introduced into automobiles to improve their visual and ergonomic appeal. As the number of cars on the road grows, so do the challenges associated with vehicle maintenance. The most common problem that owners overlook is rat biting/gnawing. These small rodents do considerable damage to automobile wiring harness, causing major problems at critical times.

People prefer to greet visitors in their cars the same manner they do in their homes, especially if the vehicle is new. Friends and relatives are constantly there in one's car. Whether it's for a road trip, a romantic night drive, or a group of friends visiting their favorite cuisine restaurant, cars are commonly the mode of transportation of choice. However, not everyone is welcome in the car. Rats, mice, and other rodents can cause a lot of damage, so no one wants them in their car. It's unclean, and if things go worse, it might be dangerous.

In today's world, a car is an essential method of transportation that allows us to get to work, hospitals, road trips, outings, and other destinations on time. But what if your automobile can't move an inch because of damaged or incorrect wires? Rats wreak havoc on people's automobiles as well as their bank accounts. Electrical systems in automobiles are among the most delicate components, and even minor damage to them can cause the vehicle to fail. We've seen numerous situations when a rodent or rat bite has caused damage to a car's electrical system, necessitating repairs. A rodent or rat may eat the wires in the car's electrical system, causing the vehicle to malfunction and the electrical system to be damaged.

Rats prefer dark, warm environments, so your automobile engine becomes their favorite hangout. Rats usually build a nest in the engine and stay there. They clog up your engine and cause damage to it by chewing through wiring, which may be expensive. Rats like to nibble on wire insulation, which can cause problems with the car's electrical system. Another big issue is that rats can use the automobile as a food storage facility, resulting in strewn food all over the engine, as well as damage to the car interior from food, droppings, and other debris, making it an unsanitary environment [1].

Although no one keeps track of rat damage to automobiles, there are indicators that it is becoming more of an issue as a result of a statewide rat population increase, which scientists believe is being exacerbated by a warming climate [1].

In the fall, rodents set fire to a vehicle in Manhattan.College students' automobiles have been mutilated in Florida. A half-dozen class action lawsuits have been brought again auto manufacturers in recent years, all eging that today's environmentally friendly wiring is tempting to mice. Rats have a "smorgasbord of delights" in modern cars, according to AAA [1].

LITERATURE SURVEY

Because our concept is so fresh and unique, no study has been done regarding it, however, there have been some studies done on certain oils and chemicals to see how effective they are at repelling rats. Peppermint oil, citronella oil, and paradichlorobenzene are all utilized individually, and their work is done separately, employing the same chemical and organic substances but without combining them. Organic oils of peppermint and citronella are known insect and rodent repellents, while paradichlorobenzene is a registered pesticide. Various research publications say that this assertion is true based on extensive laboratory testing on rats.

DRAG REDUCTION SYSTEM ANALYSIS ON TATA NEXON

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ABSTRACT

Aerodynamic styling of the vehicle is one of the promising technologies which can not only improve the fuel efficiency, but also ensure better stability and good handling characteristics of vehicles at higher speed especially on highways. The paper includes assessment of drag force (Fd) and drag coefficient (Cd) by the conventional wind tunnel method. The experimental calculations were performed using subsonic wind tunnel having a test section of 100cm x 30cm x 30 cm. An exact replica of a model of Sports Utility Vehicle (SUV) on reduced scale 1:32 was used to conduct and perform the experiment for calculating Fd and Cd. Three-dimensional (3D) computational analysis was carried out using Gambit as the preprocessing software and Fluent as the solver and post-processor. The comparison of computational approaches with experiment shows that the computed Fd agrees well with the experimental values over the entire range of air velocities. The design and development of an active Drag Reduction System (DRS) for multielement wings in a race car application is described. Such systems are currently allowed within certain racing categories, including Formula 1, and provide the opportunity to run increased down force levels for cornering and braking events, whilst minimizing drag during straight line acceleration. Switching from the high down force to the low drag mode is achieved by individual rotation of the trailing edge flaps. This aerodynamically decouples the multielement configuration and converts it to a staggered multi-plane assembly, reducing the liftinduced drag produced by the wing. In the present example, DRS is applied to both the front and rear wings of the car in an effort to retain an acceptable aerodynamic balance when the system is deployed, thereby retaining aerodynamic stability and allowing DRS to be used in partial cornering situations. Numerical models are developed to predict the quasi-static aerodynamic performance of the wings in isolation as the flaps are progressively rotated. These results are correlated with full scale wind tunnel tests. Maximum drag reductions of 70% and 83% are predicted for the front and rear wings respectively. Down force was found to be reduced by 37% for the front and 67% for the rear wing, with the large difference attributed to the fact that the front wing is operating in ground effect. A numerical simulation of the full car with front and rear wings, driver and underbody diffuser predicted that the application of DRS resulted in a maximum full car drag reduction of 62%. However, this mode was found to produce an unacceptably large forward shift in the aero balance, which would make the car extremely unstable and prone to over steer. By reducing the magnitude of DRS applied to the rear wing a configuration was found which slightly improved the aerodynamic balance and stability of the car at high speeds whilst still delivering a total drag reduction of 54%. In fluid mechanics, drag related problems aim to reduce fuel consumption. This paper is intended to provide guidance for drag reduction applications on cars. The review covers papers from the beginning of 2000 to April 2020 related to drag reduction research for ground vehicles. Research Papers were collected from the library of Science Direct, Web of Science, and Multidisciplinary Digital Publishing Institute (MDPI). Achieved drag reductions of each research paper was collected and evaluated. The assessed research papers attained their results by virtual wind tunnel measurements or calculating validated numerical models. The study mainly focuses on hatchback and notchback Shaped ground vehicle drag reduction methods, such as active and passive systems. Quantitative Analysis was made for the drag reduction methods where relative and absolute drag changes were used for evaluations.

INTRODUCTION

Recently automobile fuel economy, emissions, and recycling have become an important social concern. At the meantime, automotive industry competition has become more brutal and automotive companies began to put more effort on advanced vehicle design. Engineers believe that the automobile should be affordable, yet appealing, safe, and inexpensive to drive. The well-designed aerodynamic vehicle consumes not only less fuel in overcoming the drag exerted by air while running at higher speeds, but also offers good stability and handling. Aerodynamic styling of a car is one of the most crucial aspects of car design-a highly complex Phenomenon, encompassing the task of an artful integration of advanced engineering and stylish aesthetics. A lot of emphasizing is laid on the aerodynamics in car design as an aerodynamically well-designed car spends the least power in overcoming the drag exerted by air and hence exhibits higher performance- cruises faster and longer, that too less fuel.

DESIGN AND FABRICATION OF ADAPTIVE HEADLIGHT SYSTEM USING LDR AND ARDUINO NANO

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ABSTRACT

Bright lights coming from the upcoming vehicles on a night highway road give rise to fatal glare and dazzling effects. These effects have always been discomforting to the drivers. Also, the lack of illumination by the headlights leads the blind spots on a steep curvy road. To overcome these phenomena, many measures have been taken place in Asian as well as American countries. The concept of the Adaptive Headlight System is one of the effective solutions built by many car brands to tackle the problem. The system works by actively monitoring upcoming traffic and giving outputs accordingly to enhance the driving experience as well as reduce the high accident rates due to bright lights. The future scope of this system can include adaptive headlights being controlled by vehicle speed. High speed can correspond to the headlights being more divergent, and at low speed, headlights can be made to converge to get a better lit area while driving. In this paper, the fabrication of an Adaptive Headlight System using Light Dependent Resistor(LDR) and microcontroller Arduino NANO has been discussed.

Keywords: Blind Spots, Dazzling effect, Glare effect, Headlight Movement, Intensity Control.

INTRODUCTION

The bright lights from the upcoming vehicle directly fall on the driver's eyes. This results in temporary vision loss, which is undesirable while driving at a high speed at night. As per the Royal Automotive Club (RAC) in Western Australia, almost 70% of the drivers feel that these dazzling and glare effects are very risky and 300 collisions occur every year due to dazzling bright headlights. As per the surveys conducted by the Ministry of Road Transport and Highways (MoRTH), more than 700 blind spots have been identified on Indian highways. According to Fortune India, 74% of cars use high beam lights which can lead to catastrophic accidents. In the current scenario, many cars brand have developed their unique Adaptive Headlight Systems. Some of the Adaptive Headlight Systems which currently exist in the automobile industry are Mercedes Benz Intelligent Lighting Systems (ILS), Mazda Adaptive LED Headlights (ALH), and Porsche Dynamic Lighting System (DLS), etc.

In this project, we have developed an Adaptive Headlight System that works on two aspects, movement of the headlights by the steering wheel input and simultaneous intensity control of headlights by active monitoring of upcoming traffic through Light Dependent Resistor (LDR). The existing Adaptive Headlight Systems are very expensive and complex. These systems cannot be implemented on low-end car versions. Thus, a convenient and budget-friendly Adaptive Headlight System, which can be easily installed in normal mid-range cars is essential. After thorough research in the past work on the topic, we designed an Adaptive Headlight System which is extremely simple yet an effective working model. It needs no manual operation for switching ON and OFF. When the LDR detects the light from an oncoming vehicle, it automatically dims the light and when the vehicle passes by, it automatically switches back to the normal or bright headlight. The main objective of this project is to reduce the accidents caused by headlight glare and dazzling effects, as well as blind spots. It is also aimed to ensure high safety along steep curves and sharp turns.

LITERATURE REVIEW

Li. Y. et al., (2011) proposed a model using two machine learning-based approaches, Servo Vector Machine (SVM) and AdaBoost. Frame-level beam decision making with temporal smoothing was incorporated. The system has been extensively tested both online and offline to validate the robustness and effectiveness of the two proposed approaches. They compared model with Mobil-eye and Mercedes Benz night-view headlight system. They trained both SVM and AdaBoost models with the same set of data.

Mohite H., et al., (2015) proposed an Electronic Control Power Steering (ECPS) was used which turns the headlights as per the steering wheel rotation along with various light sensors. They built a mechatronic system by using microcontroller, relay, sensor and motor. The light sensor senses the intensity of light and turns on the headlight whenever the intensity of light falls below a certain value.

Wu Y. and He. L. (2019) proposed multi-sensor fusion technology in which the NCV78663 chip is used as the main chip of the LED headlamp driving unit. They measured data by changing the number of lamp beads or the

KIDNEY STONE DETECTION USING DEEP LEARNING

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ABSTRACT

Ultrasound scanning is that the foremost often used tool to appear at the patient for abnormalities, especially the presence of stone, within the kidney. Kidney abnormalities are a bit like the formation of stones, cysts, blockage of urine, congenital anomalies, and cancerous cells. Kidney stone ailment (nephrolithiasis) is a not unusual trouble among the western population. Most kidney stones are small and skip spontaneously. These sufferers often need no treatment. However, a few nephrolithiasis sufferers expand big stones, which could reason enormous morbidity with inside the shape of acute signs and continual headaches if they're now no longer treated. Convolutional Neural Networks (CNN or ConvNet) are complex feed forward neural networks. CNNs are used for image classification and recognition because of its high accuracy. The CNN follows a hierarchical model which works on building a network, like a funnel, and finally gives out a fully connected layer where all the neurons are connected to each other, and the output is processed.

Keywords: Kidney Stone Detection, Convolutional Neural Networks (CNN or ConvNet)

I. INTRODUCTION

Kidney stone disease is one of the major life threatening ailments persisting worldwide. The stone diseases remain unnoticed in the initial stage, which in turn damages the kidney as they develop. A majority of people are affected by 11 kidney failure due to diabetes mellitus, hypertension, glomerulonephritis, and so forth. Since kidney malfunctioning can be menacing, diagnosis of the problem in the initial stages is advisable. Kidney stone also called as nephrolithiasis is a small, hard deposit that forms in the kidneys and is often painful when passed. Kidney stones are hard deposits of minerals and acid salts that stick together in concentrated urine. They can be painful when passing through the urinary tract, but usually don't cause permanent damage. The most common symptom is severe pain, usually in the side of the abdomen, that's often associated with nausea. Treatment includes pain relievers and drinking lots of water to help pass the stone. Kidney stone is formed when salts and certain minerals such as calcium and uric acid are accumulated in urine. It is caused because of inadequate intake of water. It mainly occurs when our body lacks fluid and accumulates a lot of waste. Medical procedures may be required to remove or break up larger stones. There are various methods for the diagnosis of kidney stone such as urine test, blood test, CT scan, MRI scan etc. By human inspection and operators, it is impossible to produce result for large amount of data. During surgical processes, it's vital to acknowledge the truth and precise location of kidney stones. Ultrasound imaging is one of the available imaging techniques used for diagnosis of kidney abnormalities. Nowadays a discipline of automation got here into lifestyles which additionally getting used with inside the clinical discipline. Rather many not unusual place issues rose because of automated analysis along with the usage of correct and accurate outcomes and additionally the usage of right 12 algorithms. The clinical analysis manner is complicated and fuzzy through nature. Convolutional Neural Networks are complex feed forward neural networks. Among all strategies, the smooth computing approach referred to as a neural community proves blessings because it will analyze the ailment through first gaining knowledge of after which detecting on a partial i.e., Feature extraction.

II. METHODOLOGY

CNN is a type of neural network model which allows us to extract higher representations for the image content. It is a Deep Learning algorithm which can take in an input image, assign importance (learnable weights and biases) to various aspects/objects in the image 16 and be able to differentiate one from the other. The pre-processing required in a ConvNet is much lower as compared to other classification algorithms. While in primitive methods filters are hand-engineered, with enough training, ConvNets have the ability to learn these filters/characteristics. The architecture of a ConvNet is analogous to that of the connectivity pattern of Neurons in the Human Brain and was inspired by the organization of the Visual Cortex. Individual neurons respond to stimuli only in a restricted region of the visual field known as the Receptive Field. A collection of such fields overlap to cover the entire visual area. Unlike the classical image recognition where you define the image features yourself, CNN takes the image's raw pixel data, trains the model, then extracts the features automatically for better classification.

The First Block makes the particularity of this type of neural network since it functions as a feature extractor.

DESIGN AND FABRICATION OF PORTABLE PPE KIT STERILIZATION

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ABSTRACT

Medical demands during the COVID-19 pandemic have triggered a grave shortage of medical-grade personal protective equipment (PPE), especially, N95 respirators. N95 respirators are critical for the personal protection of medical providers and others when being exposed to individuals with infections caused by the SARS- CoV-2 coronavirus. To address the shortage of PPE Kit & N95 respirators, innovative methods are needed to decontaminate coronaviruses from N95 respirators & PPE Kit, allowing them to be safely reused by healthcare workers.

Keywords: UV, UV-C LED, Sterilize, Ultraviolet-C; decontamination; N95 respirator; peracetic acid; SARS-CoV-2, ozone

1. INTRODUCTION

Personal protective equipment (PPE) is essential for protection of personnel and patients in healthcare settings. The pandemic of coronavirus disease 2019 (COVID-19) caused by severe asucute respiratory syndrome coronavirus 2 (SARS- CoV-2) has resulted in shortages of critical supplies, including PPE. These shortages have led many facilities to consider strategies to extend or reuse PPE, particularly N95 filtering facepiece respirators. The Centres for Disease Control and Prevention and the National Institute for Occupational Safety and Health (NIOSH) have provided guidance the acceptability of extended use or limited reuse of N95 respirators & PPE Kit. The guidance document includes a discussion of potential concerns regarding these practices, particularly the risk for contact transmission from touching a contaminated respirator. There is an urgent need for evidence regarding the effectiveness of decontamination strategies for PPE. The goal of the current study was to examine the effectiveness of UV-C light and a high-level disinfection cabinet for decontamination of PPE Kit & N95 respirators.

2. LITERATURE REVIEW

A. Effectiveness of an Ozone Disinfecting and Sanitizing Cabinet to Decontaminate a Surrogate Virus for SARS-CoV-2 on N-95 Masks | Megan S. Beaudry (4 April 2020)

Author Writes, Effectiveness of an Ozone Disinfecting and Sanitizing Cabinet to Decontaminate a Surrogate Virus for SARS-CoV-2 on N-95 Masks that the COVID-19 pandemic has dramatically reduced the availability of PPE. During this global emergency, decontamination and reuse of FFRs may be necessary when access to PPE is limited. We have demonstrated that ozone sterilization is an effective method for the decontamination of N95 mask materials.

B. Ultraviolet-c and other methods of decontamination of 2 filtering facepiece n-95 respirators during the covid-19 pandemic | Henry W. Lim (24 April 2020)

Author Writes, The current COVID-19 pandemic, extreme measures are needed to keep those on the front line protected. UVC, hydrogen peroxide, microwave, and dry heat systems are all viable options to kill microorganisms on N95 FFRs to enable their reuse. These options are cost-effective, quick to employ, and have the potential to save many lives and valuable resources. These methods have demonstrated good biocidal activity against many viruses including influenza, SARS-CoV and MERS-CoV however, their efficacy against the novel coronavirus SARS-CoV-2 specifically has not been tested.

3. METHODOLOGY AND UVC RADIATION APPLICATION

Ultraviolet Radiation is an electromagnetic wave with low wavelength and high energy lying between X-ray and Visible Light spectrum. The wavelength of UV rays is 400 nanometers to 100 nanometers. This spectrum is dividedinto UV-A, UV-B and UV-C bands. The wave length of UV-A is from 400nm to 315nm, UV-B is from 315nm to 280nm. UV-C radiation covers wavelength spectrum from 280 nm to 200 nm. The UV radiation below 200nm does not propagate in air andcan only pass-through vacuum, so this band is called Vacuum-UV. Ultraviolet germicidal irradiation (UVGI) with wavelength of 254 nm can kill or destroy the DNA of bacteria or virus like SARS-CoV-2 more efficiently, but this particular wavelength radiation can penetrate into human skin and eye and causes damage to both. But the farUV-C with wavelength between 222nm to 207nm, have almost similar germicidal properties and very less impact on human body. So, the disinfectant UV-C radiators are designed to operate in this spectrum.

SHOP NOW ECOMMERCE WEBSITE

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[1,2,3]UG Student and [4]Professor, Department of Information Technology, TCOE, MU, Maharashtra, India

ABSTRACT

Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions. Ecommerce is often used to refer to the sale of physical products online, but it can also describe any kind of commercial transaction that is facilitated through the internet. These business transactions occur either as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer or consumer-to-business. Ecommerce provides several benefits to sellers over traditional retailing. Some key benefits include: overcoming geographical limitations, lower costs, 24 X 7 availability of products, gaining new customers through better search engine visibility, create targeted information, enable comparisons while shopping and eliminating travel time and costs for customers.

Ecommerce is becoming increasingly popular in Arab countries due to its various advantages over traditional brick and mortar retailing. Sultanate of Oman is one of the important economies in this region and is a key emerging market. Oman has witnessed a boom in Ecommerce activities including B2B and B2C activities. Attaining customer satisfaction is one of the keys to success in today's crowded and competitive online market. This study attempts to find and analyse the important factors affecting customer satisfaction with Ecommerce websites and online purchasing in Oman. The study shows that Price and Ease of Use and availability of multiple payment options are the important factors that positively influence customer satisfaction.

Keywords: Ecommerce, Customer Satisfaction

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Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle although it may also use other technologies such as e-mail. There are three areas of e-commerce: online retailing, electronic markets, and online auctions. Whereas e-business refers to all aspects of operating an online business, ecommerce refers specifically to the transaction of goods and services.

A. Benefits of E-Commerce

Ecommerce provides several benefits to sellers over traditional retailing. Some key benefits include : overcoming geographical limitations, lower costs , 24 X 7 availability of products, gaining new customers through better search engine visibility, create targeted information, enable comparisons while shopping and eliminating travel time and costs for customers. However, some customers prefer purchasing physical products as it enables them to touch, feel and try them out prior to buying.

B.Customer Satisfaction with Ecommerce Services

At a global level, customer satisfaction leading to loyalty (e.g. customer retention) is generally very strongly related to the profitability and long-term growth of a firm [Reichheld ,1995]. Small increases in customer retention rates can dramatically increase profit [Huffmire, 2001]. Loyal customers visit their favorite websites twice as often as non- loyal customers, and loyal customers spend more money [Dialscore.com 2000].According to analysts, 35 to 40%of e-commerce website sales revenue comes from repeat visitors [Rosen , 2001]. As such, it is not surprising that customer loyalty has been found to be a critical asset fore-retailers. Reichheld and Schefter [2000]found that the high cost of acquiring new online customers could lead to unprofitable customer relationships for up to three years. Consequently, it is very useful to determine the key antecedents or factors that influence customer satisfaction with ecommerce websites.

SHOP NOW ECOMMERCE WEBSITE

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[1,2,3]Student of B.E and [4]Professor, Information Technology, Theem College of Engineering, Maharashtra, India

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ANALYSIS AND OPTIMIZATION OF PERVIOUS CONCRETE

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ABSTRACT

Pervious concrete is a mixture of cement, water, coarse aggregate and little to no sand. It is also called as porous concrete and no fines concrete. This paper deals with the experimental results of pervious concrete based on three different sizes of aggregates with three sand contents. A mix design of Grade M25 was developed. The sizes of aggregate taken are 10, 12 and 16mm and the sand content is reduced to 5%, 10% and 15%. Three cubes and three cylinders were casted for each size and sand content respectively. A total of 27 cubes are casted which are tested for compressive strength and infiltration rate. Based on the analysis of the results obtained, applications of pervious concrete will be recommended

INTRODUCTION

A Conventional Concrete is a composite material composed of fine and coarse aggregate bonded together with a fluid cement (cement paste) that hardens or cures over time. Pervious concrete is a type of concrete that has a low water to cement ratio and contains none or very little amount of sand. It is usually a mixture of 9mm to 19mm average diameter aggregate, hydraulic cement, other cementitious materials, admixtures and water. Pervious concrete also called as permeable or no fines concrete has a high porosity which can be used for concrete flatwork applications that allows water from precipitation and other sources to pass directly through, thereby reducing the runoff from a site and allowing groundwater recharge.

Pervious concrete is been used in European countries since the 1800s for pavement surfacing and load bearing walls. Due to its cost efficiency, it was also used for two storey homes in Scotland and England. It was introduced in India only in the late 2000s and due to its low strength and structural capacity, the use of pervious concrete in India is limited mostly to parking facilities, low volume roads, sidewalks etc. As for highly developed expressways and heavy volume roads, pervious concrete may not conform to the required structural and bearing capacity. Taking this issue into account various researches and studies are being carried out at different institutions for its implementation on a larger scale for roadway applications.

AIM AND OBJECTIVE

- To develop mix design for Pervious concrete by reduction of sand.

- To carry out test for infiltration and compressive strength of pervious concrete

- To analyse its suitability for various applications.

LITERATURE REVIEW

High porosity is one of the basic characteristics of pervious concrete. This property of pervious concrete was enhanced during research conducted in the year 2015 at Indonesia by using volcanic pumice which is a waste material as aggregate replacement on porous concrete. Materials used were OPC, normal coarse aggregate, volcanic pumice, water and plasticizer. In this study the effect of varying proportions of volcanic pumice per normal aggregate and the proportion of aggregate to cement with a constant water cement ratio was evaluated on the mechanical properties of volcanic pumice porous concrete and on porous concrete with normal aggregates. The tests were conducted for void content, compressive strength and flexural strength. Thus, based on the tests results it was concluded that volcanic pumice could be effectively used to improve the porosity of pervious concrete without much reduction in its strength.

In the year 2014, research conducted in states suggested the application of pervious concrete in the construction of highway shoulders for effective storm water management. The study was conducted on three different types of permeable shoulders with stone reservoirs, Porous Asphalt and Pervious Concrete Pavement with Permeable interlocking concrete pavements for full infiltration, partial infiltration and no infiltration systems. In Full infiltration system since there was no provision of outlet pipe the entire water was allowed to pass to the sub-grade. In the next system the excess water above infiltration capacity was removed via outlet pipe. While in the third one that is No infiltration system the entire water was removed by outlet pipe and no water was allowed to pass to the sub-grade by provision of impermeable geo-synthetic material. The result of the research conducted showed that Pervious concrete pavements with partial infiltration system was the most suitable for roadway applications. The design of pervious concrete pavements was based on Street pave system (2012). Thus, pervious concrete pavements can be used to minimize the environmental impacts, to minimize the runoff and

The technology used at Back end: PHP, MySQL / Python, Django

Resources Required: Manpower, Programmers, testers, debuggers

Software required: Python 3.5, GitHub Editor: Sublime Text Hardware required: PC for development, server for deployment

Managerial Feasibility
Management support, employee involvement, and commitment are key elements required to gauge managerial feasibility in the proposed project. The success and the profitability of the project partly depend on managerial competence of the major ingredients of the proposed project which are the users i.e. companies and the benefits i.e. recycling center and consumers.

Operational Feasibility
The proposed Model is to classify the trash based on its recyclability status and further classify them into six categories (Glass, Plastic, Metal, Paper, Cardboard, Trash) if garbage is recyclable. This model could be applied in various industries. The major use of this model would be in the recycling center as an automated garbage classifier. This model can be used to build an Android and iOS App which could use by a consumer to classify the trash in daily life so the waste will dispose of more efficiently. If the usage of this model is very beneficial and helpful to the society then the system can be expanded at the global level also.

RESULT AND DISCUSSIONS
For training the model, we have collected around 500 to 600 images of each category of garbage. This entire collection of images is the data set for the model. Out of these images, 80% of images are used for training the model and the remaining are used for testing the model.

We train the model for all the categories of garbage and achieved an accuracy of 79.7%. then we tested the model for each category and the result for each is given below:

Category	Score
Plastic	0.9737
Glass	0.9984
Paper	0.9277
Metal	0.9996
Cardboard	0.9932
Non-Recyclable	0.5659

Below is the Screenshot of one of the tests performed on the model:

```
/usr/bin/bash --login -i                               —   □   ×
% (N=100)
INFO:tensorflow:2019-01-21 17:04:12.751901: Step 499: Train accuracy = 96.0%
INFO:tensorflow:2019-01-21 17:04:12.751901: Step 499: Cross entropy = 0.156207
INFO:tensorflow:2019-01-21 17:04:12.845632: Step 499: Validation accuracy = 85.0
% (N=100)
INFO:tensorflow:Final test accuracy = 79.7% (N=512)
INFO:tensorflow:Froze 2 variables.
INFO:tensorflow:Converted 2 variables to const ops.

Adwaitanand (master *) tensorflow-for-poets-2 $ python -m scripts.label_image \
>      --graph=tf_files/retrained_graph.pb  \
>      --image=tf_files/plastic.jpeg
2019-01-21 17:06:10.906460: I tensorflow/core/platform/cpu_feature_guard.cc:141]
 Your CPU supports instructions that this TensorFlow binary was not compiled to
use: AVX2

Evaluation time (1-image): 0.411s

plastic (score=0.97379)
glass (score=0.01517)
trash (score=0.01102)
cardboard (score=0.00002)
metal (score=0.00000)
Adwaitanand (master *) tensorflow-for-poets-2 $
```

DESIGN AND DEVELOPMENT OF DELTA 3D PRINTER

Siddhant Belvalkar[1], Santosh Pandey[2], Sagar Pawar[3], Omkar Shingte[4] and Md. Sami Malik[5]
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ABSTRACT
3D printing is a very used process in industry, it allows the designers to produce a prototype in a very short time, which is tested and quickly remodeled .The Delta printer is based on the functional principle of a Delta robot, which is a parallel robot with 3 interconnected arms fixed to a motherboard. Compared to the Cartesian coordinate's printer, the Delta 3D printer has a bigger flexibility used to get the nozzle in the working position, higher working space, higher speed and temperature conditions, the possibility of using other types of printing material compared to the existing ones, futuristic design, usage of high quality pieces, higher stability.

Keywords: Compact, Cost efficient, Delta 3D printer, Delta Robot, Universal.

I. INTRODUCTION

The most fascinating three-dimensional printer design to watch print is the delta 3D printer. The delta design is quite different from most 3D printers and is best known for its vertical orientation and relatively small footprint although larger units can be quite tall. This paper will help you learn what you need to buy or build your own delta printer, as well as how to get the most out of your delta printer. A Delta 3D printer is a type of parallel robot that uses geometric algorithms to position each of three vertical axes simultaneously to move the nozzle to any position in a cylindrical build area. Thus, when the printer is printing, all three axes move in a mesmerizing ballet of mathematical equation. Before we jump into how the hardware mechanisms work, let's take a short tour on what 3D printing is all about. A firm understanding of the concepts of 3D printing is essential to getting the most out of your 3D printer investment. Even if you are already a 3D printing enthusiast and especially if you have never used a Delta 3D printer, you may want to read the following sections because we present the material with delta printers in mind.

The initial 3D printers were used in the 1980s where a pattern submerged in a liquid polymer would be traced by a computer. The traced pattern hardened into a layer, thanks to the laser, and that was how you built an object out of plastic. Since then tremendous progress has been made in additive manufacturing such that material extrusion is now used. By this method, an object is built out of matter that is pushed from a mechanical head like the way an inkjet printers extrudes ink onto paper. Interestingly, the cost of acquiring 3D printers has been decreasing with the advancement of technology.

- Components
1. LCD
2. Filaments supporter (gift)
3. Print parts
4. End stop
5. Steppermotor
6. ZRIB V2.0 Control board (compatible with Ramps1.4)
7. New upgrade Carrier(Front)
8. New upgrade Carrier(Back)
9. Carbon diagonal rod
10. High performance pulley
11. New upgrade effecter
12. 3mm thickness aluminuim bed

Fig-1: Major components of delta 3D printer

tools are useful for bending sheet metals. The angles of the plastic punch and die are increased by the elastic deformation during bending, and the angles of the products are increased in comparison with those by the steel tools. A.C.Majarena et al (17), By printing an initial CAD design, measuring the piece, and obtaining the error, students can generate a program to compensate the computer numerical control code of the printer. Moreover, students calibrate a flatbed scanner converting a commercial scanner into a dimensional coordinate instrument of two coordinates. Marian Stopka et al (18), The goal of this paper is dynamical analysis of 3D printer powertrain, which is responsible for movement and positioning of print head. Main task is proposition of driving motors according to dynamical analysis results. Ken-ichiro Mori et al (19), The application of 3D printers increasingly expands as a small-lot production process. The inclusion of carbon fibres in the plastic is attractive in increasing the strength of products. It is desirable to develop approaches for increasing the amount of carbon fibres and the bonding force between the carbon fibres and plastic and for controlling the orientation of carbon fibres.

III. METHODOLOGY
This section represents detailed project plan and its implementation. The following block diagram represent the proposal work of the project.
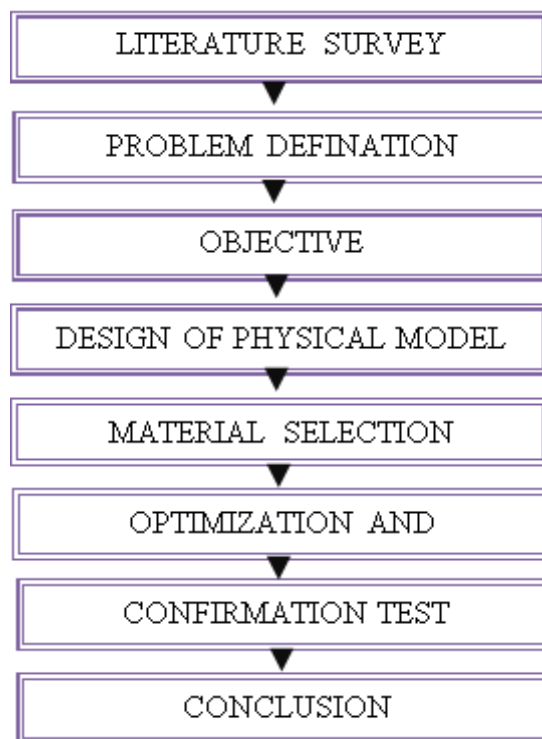
Fig-2: Proposed methodology

A. Objective
The main objective of this project is to design a 3D printer that can be manufactured at a low cost and make it universal as different types of printing techniques can be used. To print complex and intricate parts, also to build large printing volumes and to solve the problems faced during bed leveling.

B. Case study
Study is being done on entire working and manufacturing process of Delta 3D printer. Study of each and every single component, their principle, working as well as construction is being done under case study. The study of existing 3D printers and their advantages as well as drawbacks is being study with the help of this we can improve its efficiency and work on errors. There are many kinds of 3D printer that are currently present in the market but our project focuses on Delta 3D type. The Delta 3D printer has 3 column A,B,C where each column has a carriage that runs up and down. Each carriage connects to extruder platform which is aligned parallel to the bottom surface of 3D printer called bed. The Delta 3D printer consists of 3 stepper motors for the movement of extruder i.e. printing head, microcontroller which will be used for controlling motors in order to print model with accurate shape and size, motor shield to provide accurate power supply to motors, Delta 3D printer hardware model is thermoplastic(PLA) which will be used as printing material which has melting point of 150-260 degree Celsius and can solidify at room temperature, a container which will used to store molten thermoplastic and burner which will provide required temperature for melting PLA.

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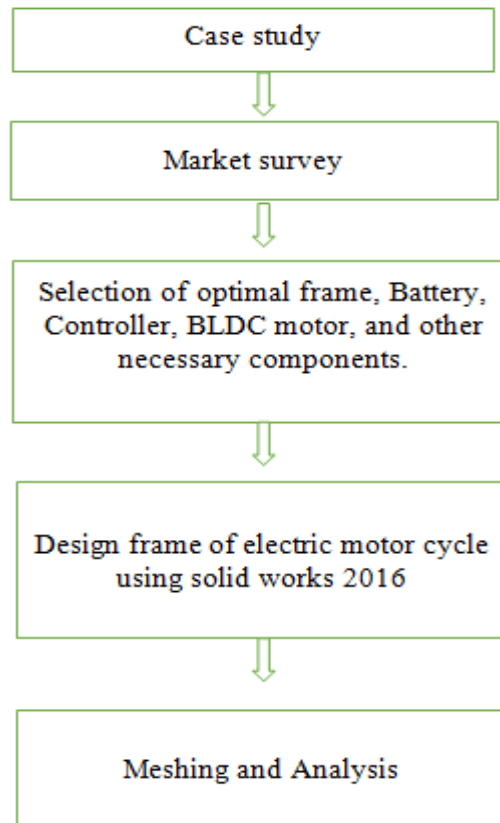
Fig-2: Proposed Methodology

A. Case Study
Study is being done on entire working and manufacturing process of electric motorcycle. Study of each and every single component their principle, working as well as construction is being done under case study. The study of existing Electric motorcycles, their advantages as well as drawbacks is being study with the help of this we can conclude that what we can do to improve its performance and what else can we do to reduce the drawbacks.

B. Market survey
Market survey is being done to carry out the cost of fabrication, the cost of major and minor components of vehicle. Major components such as battery, controller, converter, Brush Less Direct Current motor, etc. Minor components such as shock absorbers, tires, wheels, handle bar, front suspensions, brakes, handle bar, etc. Cost as well as the approximate weight of those components are needed to be calculate before designing. So we can design an appropriate frame so that it can carry the weight of those components as well as passengers without a failure. And we can make efforts to reduce the weight of a frame and also reduce the cost of fabrication.

C. Selection of material
After doing a market survey we can select an appropriate material for frame. There are multiple types of frames and materials of frame in the market, so we can select the appropriate type of frame and a material according to our requirements. Other major components like controller, batteries and motors are selected after comparison of their cost, specifications and our requirements. Components such as seat, tires handle bar, seat and suspensions are selected based on ergonomics and aesthetics.

D. Design of Chassis and body on Solid works
Before analysis Design of frame and body on a solid works software is necessary. The frame is designed according the sample chassis which we have selected and according to the placement of selected before analysis Design of frame and body on a solid works software is necessary. The frame is designed according the sample chassis which we have selected and according to the placement of selected components. The body is designed according to chassis and aesthetic point of view.

E. Analysis
After completing the cad model of frame the model is exported into Ansys software where we can simulate and do analysis on it. Meshing and analysis is carried out on Ansys software by applying the appropriate boundary conditions and perfect weight and we can examine how the frame will react under such conditions in practical.

Design and analysis of Blanking Die for various Hexagonal Sizing Operations

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Abstract— The sheet metal working processes are widely used in almost all industries like automotive, medical and mechanical industries. The major advantage for using sheet metal working process is to improve production rate and to reduce the cost per piece. The project mainly focuses on different sizing operations done on single setup of die punch. Presently these operations are done on four separate setups which leading to reduce the production rate and increasing cycle time with cost as well. Blanking is a manufacturing processes by which certain geometrical shapes are sheared of a sheet metal. Blanking is a process of producing at components. The entire periphery is cut. The cut-out piece is called Blank. The process is called Blanking and tool used is called Blanking tool. Blanking dies are known as cutting dies. They may be simple, combination, or compound. A Blanking die is generally cheaper to make and faster in operations than trim die. A single Blanking die can either produce either a right or left part, while to trim dies are needed for trimming one die for right-hand parts and another die for left-hand parts. When a sheared at blank drops through die block (die shoe) it piles up on top of the bolster plate. If the blank goes through the hole, it is called drop-blank die. A die in which sheared blank returns upwards is called a Return-blank die. Return-Blank dies are slower in operations and the cost more to build than drop-blank dies. If the Blanking die design is considered as the most important part in manufacturing of sheet metal. This project is also based on new design for die punch. The 3D parts are modeled in SOLIDWORKS and saved in .igs format so that it can be imported from any of the analysis software. As per the companies requirement cad drawings are drawn in SOLIDWORKS software. The various stress analysis, are carried out on Ansys 17.2.workbench analysis software and results are compared

Keywords— die, die materials, clearance

I. Introduction

Blanking is a manufacturing process by which engineering or industrial parts of certain geometrical shapes are sheared o sheet materials such that the produced parts do not need further or subsequent machining unless very high quality is required. Blanking is a manufacturing operation as old as the technology itself. Its applications range from components of very light to heavy appliances and machineries. Blanking is defined as the cutting of a work piece between two die components to a predetermined contour. During blanking, the part is subjected to complex solicitations such as deformation, hardening and crack initiation and propagation. The theoretical modeling of such processes

is very difficult due to the complexity in describing the different stages of the whole shearing process starting with the elastic stage and ending with the total separation of the sheet metal. The behavior of the blank material during the blanking process can be divided into various stages. During the start of the process, the sheet is pushed into the die and the blank material is deformed, elastically. The process continues and the yield strength of the blank material is reached. Normally, the material underneath the punch is subjected to thinning. The plastic deformation causes rounding of the edge of the blank. During this stage, or possibly as early as during the plastic deformation stage, damage initiation followed by the nucleation and growth of cracks takes places. In most of the conventional blanking situations, ductile fracture occurs after shear deformation. This causes rough, dimpled rupture morphology on the fractured surface of the product. Finally, the work due to friction is dissipated when forcing (pushing) the slug through the die hole.

A. According to this criterion,the dies maybe classified as

Cutting Dies are used to cut the metal. They utilize the cutting or shearing action. The common cutting dies are blanking dies, perforating dies, notching dies, trimming, shaving and nibbling dies.

Forming Dies change the appearance of the blank without removing any stock. Theses dies include bending, drawing and squeezing dies etc.

B. According to the die classification

According to this criterion, the dies may be classified as: single operation or simple dies, compound dies, combination dies, progressive dies, transfer dies and multiple dies. Simple dies or single action dies perform single operation for each stroke of the press slide. The operation may be one of the operation listed under cutting or forming dies. In compound dies, two or more operations may be performed at one station. Such dies are considered as cutting tools since, only cutting operations are carried out. In combinations die also, more than one operation may be performed at one station. It is difficult from compound die in that in this die, a cutting operation is combined with a bending or drawing operation, due to that it is called combination die .A progressive or follow on die has a series of operations. At each station, an operation is performed on a work piece during a stroke of the press. Between stroke the piece in the metal strip is transferred to

Conversion of Mono Wheel IC Engine to Mono Wheel E-Bike

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Abstract—In the world of Automobile, Many modern types of vehicles are invented with many features and specifications. Many vehicle are made for fun and entertainment purposes, but our is unique also because of it's single giant wheel i.e, mono wheel bike. So, Now we are going to convert the mono wheel IC engine bike to mono wheel electric bike. Due to it's less harmfull nature and less pollution, noise and air pollution is eliminated from environment. Working with mono wheel can result more efficient way of transport, as it's size, weight and resistance are minimize and reduced. In dual wheel bikes one wheel provide the propulsive force and the other one steer the bike, while in mono wheel bike the single wheel itself has to do both propulsive force and steering. In this mono wheel bike, there is only one part which is there for the application of propulsive forces and braking i.e reducing the speed. For steering the mono wheel we have to lean on the side of where we have to take turn. This mono wheel has the motive of design to ride only for short distances. In our paper we describes the planning and process for mono wheel e bike. We have taken the reference from electric bike in the market to make mono wheel as a e bike. For our mono wheel e bike, it has less maintenance, less vibrations and having smaller size to park anywhere easily. It can be charged also easily at it's power station or at your home also .As In our mono wheel e bike we sit inside the wheel, the rider will be having fun and feeling crazy to ride it. In 19th century, the mono wheel bike were built are hand cranked and pedal powered and then. In 20th century most of the mono wheel vehicle are made on IC engines. Our researches only focuses on to reduce the pollution and reduce the weight and going to fabricate the mono wheel bike

Keywords— propulsive forces, lean, steer, power station

I. INTRODUCTION

A mono wheel is a one-wheeled single-track vehicle similar to a unicycle. Instead of sitting above the wheel as in a unicycle, the rider sits either within the wheel or next to it. The wheel is a ring, usually driven by smaller wheels pressing against its inner rim. Most are single-passenger vehicles, though multi-passenger models have been built. Hand-cranked and pedal-powered mono wheels were patented and built in the late 19th century; most built in the 20th century have been motorized. This mono wheel bike looks like science fiction movie, but mono wheel are in fact real, today, mono wheels are generally built for fun and entertainment purposes.

Because of surging consciousness of pollution and energy shortage crisis, automobiles and motorcycles are no longer the best for transportation.

As the price of petroleum products growing now-a-days, there is a need of cheaper and more efficient form of transport. So for energy saving RYNO is created, what is RYNO? Well, in some way it's less than a motorcycle, but in other ways, it's so much more.

One-wheeled, electric-powered-vehicle

- Capable of operating at speed up to 40 kilometer per hour

- So in future electric vehicles are the demand of people, because of less pollution and saving of energy through electric vehicles
- The world speed record for a motorized mono wheel is 98.464 km/h

In mono wheel electric bike, there are components which will be fitted in mono wheel electric bike are given below:-

- Outer rim of 4.5 fit inner rim of 4 fit in inner rim other materials will be fit

- BLDC 500w motor, 48v batteries (4 battery of 12 v each)

- Transmission system for speed control steering

- Because of transmission system speed can be reduce and there should be not having chance of locking of brakes, so the mono wheel can't roll with passenger

- The main purpose was to design test and fabricate a fully functional one wheeled self-balancing bike which can be used as means of short distance transportation for a single person.

II. FABRICATION OF MONO-WHEEL E BIKE

A. Components

☐ Bldc motor 750watt :
It is the propulsive force of mono wheel e bike, it has forward and reversemobile motion, high rpm, high torque and having greater efficiency, firm response,

REVIEW OF CHATBOT SYSTEMS WITH REFERENCE TO KNOWLEDGE AND ACCURACY

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ABSTRACT
With the increase in the computing power available to the normal users and the ease which it provides to the users Natural Language Processing has again gained popularity. One of the important applications of natural language processing is the dialogue systems or the conversational systems or chatbot systems. Chatbot system helps in better engagement with the humans in a language that humans, who do not have any technical background, understand. In the recent times many chatbot applications and system have been developed and launched in the market. Some are useful, but others are less so. But, all these systems target a specific audience with decent cognitive abilities. This paper conducts a detailed critical review of some of these chatbot systems/papers with specific reference to the type of knowledge given to the chatbot system and also the accuracy of these systems to understand the natural language and provide appropriate answers to the asked queries.

Keywords: Chatbot, Dialogue Systems, Conversation Systems, Natural Language Processing, Machine Learning, Chatbot Knowledge.

1. INTRODUCTION
Chatbot or conversational agents are a software program which establishes and conducts seamless conversations with humans [1]. For conducting seamless conversations with humans the chatbot system make use of Natural Language Processing (NLP), in order to understand what the humans are saying and also Machine Learning (ML) algorithms to fetching relevant information for the query asked by the users [2].

Chatbot system have become more popular in the recent times as it reduces the operational costs by as much as 30% for the corporations [3]. Apart from the cost what has attracted researchers and multinational corporations (MNC) in investing huge amount of money in developing the chatbot systems is that it is available 24 hours a day, 7 days a week and 365 days a year. Apart from the downtime for maintenance the chatbot systems are always available for the customers to get information on any product or things and buy those stuffs any time.

Also, the advancement in the field of NLP and ML have made it possible to build a chatbot system which are intelligent and can engage a user in conversations, and in small talks as well. This is the reason why it is estimated that top MNC's expected to invest more than 4.5 Billion Dollars [4]. This is also the reason why there are more than 300,000 chatbot system on the Facebook alone and more than 1.4 billion users are using these systems [3].

For fetching of relevant information for the query asked by the users the chatbot system make use of knowledge provided to it, which is the heart of the chatbot system. This knowledge can be in the form of structured database, unstructured data like text files, or knowledge bases which are written in first order predicate logic or at the basic level in prepositional logic. For retrieving relevant information from a structures database Structured Query Language (SQL) queries are generated and fired by the system. In order to retrieve required information from knowledge bases inference mechanisms like the resolution techniques are used [5].

The most challenging task in extracting the relevant information is through the unstructured data. The unstructured data contains only texts and there are no formal techniques or procedures through which query can be fired to these texts and extract the relevant information. Hence, generally only structured databases are provided to the chatbot systems. But, it is expected that further research is required in order to make the chatbot system more intuitive, and this can be done if the systems are provided with detailed and relevant knowledge. So, this paper mainly focuses on the type of knowledge given to the chatbot systems and its accuracy.

2. REVIEW OF CHATBOT SYSTEMS
In this section critical reviews of 15 papers have been carried out.

The main focus of authors Atiyah A., et. al. in paper [6] is to give and propose a solution to speed-up the process of finding an answer for a given query. To create a chatbot the paper makes use of Artificial Intelligence Markup Language.

BIG DATA ANALYTICS: A SURVEY

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ABSTRACT

A very huge data is generated per day from Cloud and modern information systems. Study of these vast data needs a lot of efforts at various levels to abstract information aimed at Decision making. Developed data are complex in structure and high in dimension. The old methods were not adequate to store and analyse the enormous volumes of data. Many experts are doing their investigation for good depiction and examination report. This paper gives the understated fundamentals of big data examination, problems, issues and different enhancements.

Keywords: Big Data, Hadoop, Big data analytics

1. INTRODUCTION

Big data is defined as a large amount of complex and versatile information. Older skills are improved with the benefit of big data. It has been observed that nowadays there is a very large measurement of basic data in different associations, which can be considered valuable in different fields, for example, objects movement, sending sensors, following information and so on. It is playing an important role in revealing hidden information and gaining benefits. Researchers are doing more research than ever on building novel data analysis techniques for big data which has led to the regular development of many different algorithms and platforms. Concentrated situations arise when an institution needs to check its information from individual sites in order to investigate customer criticism, questions that have been administered toward an item. Therefore, various choice makers will go to conclusions based on the extracted information or examination of some information or information expressing weight. Point-by-point analysis is followed by an information search process which is used to separate profitable data from unstructured datasets.

2. BIG DATA

It is providing benefits to many sectors such as healthcare, finance service, educational sector, research and government sectors [1]. According to research by experts, data are becoming raw materials for business. The analysed data are large in volume, are dynamic and the data belong to groups of different data types. These data are generated from many sources such as mobile, social media, YouTube and beyond. As a result, big data has exceptional attractions such as semi-structured, un-structured, heterogeneous, excessive dimensions and flaws.

1. **Characteristics of Big Data**

Mainly, there are 5 characteristics of Big Data.

Figure-1: 5V's of Big Data

i. *Volume*: The amount of data generated and stored. Volume is the mass of data generated in every single second.

ii. *Velocity*: It denotes towards the speediness of development and distribution of new information.

iii. *Variety*: Variety states to different kinds of data such as images, videos, texts, audio files, and others. It indicates the type and nature of data.

iv. *Veracity*: Since a huge volume of information is gathered, not all content is authentic. So, veracity denotes towards the data value and the data quality, as comprehensiveness, legitimacy, accurateness, uniformity, accessibility and suitability.

CLOUD DEVELOPMENT FOR THE DEPARTMENT: PROJECT TRACKING SYSTEM

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ABSTRACT

Overseeing and controlling the last year undertakings of understudies utilizing manual or customary process are an exceptionally dreary activity. The aim of the project is to create a system which will be automated for managing all the activities of projects. Automated Project Tracking System is a system for managing, controlling, monitoring the final year projects of students. It is a Cloud based system which is useful for students, project coordinator and project guide. Firstly all the students need to register into the system using registration form. Then registered students can login into the system using their id and password to get authenticated. First the students login to the project tracking system, and then they will form the groups by their own. Similarly, guide of the project will need to login into the system using their id and password. System also allows the group of the students to provide there project topic then system will automatically assign the guides to the group of students. There is the admin in the system entire work under in his control. The admin can be MU or College. Depending upon the different work done by the student they will create the project report. For creating project report we are using online form provided in cloud. We will also going to give a dead line to the student for providing there project topic after that the project topics will automatically going to be assigning to the student. Depending on project report the admin and the guide are able to see the work done by particular group of student. Depending on progress Project guide will decide to approve/reject the project report and so on. In this system the admin can send the message to the guide and student. In this project we are going to use PHP and MYSQL language for programming. Server which we are going to use in our project is Linux Server.

Keywords: Linux Server, PHP, MYSQL, Cloud.

INTRODUCTION

In today's world, nobody takes an initiative to look for notices which are displayed on the notice boards. Many students miss the information about some important notices and updates related to their final year projects. Also, the students are not able to keep track of their project related activities. It becomes very easy if all the details and updates of the project from guides are readily available for the students. Managing the final year projects manually is very stressful job. But using simple project tracking system on cloud only, anyone can carry out their project related work which is the main aim of Project Tracking system. It provides students Project guides a simple project tracking system on cloud to manage and monitor the overall project activities. All the modules of the system have a unique user id and password. Then any module can login into the system using their id and password to get authenticated further. Project tracking system allows the group of students to provide project domains and then the system will automatically assign the guides to the groups of students. Project guide is the main module of the system which assigns various tasks to the students. Project guide and student are interacted with each other. Notifications are sending to the groups about the important notices and updates related to their final year project.

GOALS OR OBJECTIVES

- To automate the traditional process of the manual work involved in the project management.

- To provide recommendation for the topics to be selected for the project.

- To provide a well-organized platform to maintain all the history about the project tasks.

- To provide a platform to the student to keep track of their work in digital form in place of hard Copy.

- To provide reliability to student that their project related data will not be access or change by any other person.

- To provide a platform in cloud in which the admin can send the notification to the student and guide.

- To provide a platform in which guide can give rank to the project college by which we can calculate which is most high rated Project.

- To provide a platform where student can give rating to every project from their college by which we can calculate which is most high rated Project.

A STUDY ON BAMBOO STICKS / CULM USES IN CIVIL CONSTRUCTION AS STRUCTURAL ALTERNATIVE TO STEEL RODS

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ABSTRACT

The goal of the Bamboo Reinforced Concrete Project is to design and build a wall that uses bamboo as a structural alternative to steel rebar in order to replicate the shear strength and load bearing capacities that traditional rebar provides for concrete walls, thus minimizing cost. The inspiration for this project comes from the infrastructure flaws (lack of steel rebar reinforcement) that can result in the deaths of thousands during earthquakes. Some, if not most, of those deaths could have been avoided if the infrastructure of the buildings contained adequate reinforcement.

Steel rebar is the primary source of structural reinforcement in India, but it is too expensive to be used consistently. However, use of bamboo as a reinforcement in walls and buildings can be explored by improving its tensility & durability to manage structural stability. Furthermore, unlike steel rebar, bamboo is an abundant natural resource and is the fastest growing plant in the world.

I. INTRODUCTION

The use of small diameter whole-culm (bars) and/or split bamboo (a.k.a. splints or round strips) has often been proposed as an alternative to relatively expensive reinforcing steel in reinforced concrete. The motivation for such replacement is typically cost—bamboo is readily available in many tropical and sub-tropical locations, whereas steel reinforcement is relatively more expensive, but what causing its extensive use is due to readily available large amount of industry set-up sluggish to find more sustainable alternatives in the construction industry. This analysis addresses 'bamboo-reinforced concrete' and assesses its structural and environmental performance as an alternative to steel reinforced concrete.

II. LITERATURE REVIEW

Abhijitsinh Parmar, Jenish Patel, Vijaysinh A. Vaghela, Vijaysinh B. Vaghela, Vishal Prajapati, 'Literature Review on Bamboo as A Reinforcement in Concrete Structure', IJSRD - International Journal for Scientific Research & Development Vol. 4, Issue 02, 2016; this study presents: Bamboos as eco-friendly and economic material, its wrapping or covering with Binding wire can resist deflection.

Lokendra Kaushal, Mr. Madan Chandra Maurya, 'Performance of Bamboo Reinforced Concrete Beam a Review', International Journal for Research in Applied Science & Engineering Technology (IJRASET) Volume 5 Issue II, February 2017, research showed the test results and proved that bamboo has high ultimate tensile strength and it can be used as an alternative replacing material for steel reinforcement because of its low cost. The average ultimate tensile strength with prepared ends (with aluminium end tabs) has been found to be higher than the specimens without prepared ends.

Rajveer Singh Rathore, Nitesh Solanki, Akash Johari, 'Review Paper on Bamboo as Reinforcement in Structural Concrete Elements', IOSR Journal of Engineering (IOSR JEN), presents that Doubly Reinforced Beam has performed more elastically than Singly Reinforced Beam while performing flexural tests. Load carrying capacity in Doubly Reinforced Beam increased by 29.31 % as compared to Singly Reinforced Beam.

Chetan Bhatiwal, Prof. U. R. Awari, 'A REVIEW ON BAMBOO REINFORCEMENT IN BEAM', International Research Journal of Engineering and Technology (IRJET) Volume: 05 Issue: 05, May-2018, presents that Bamboo is able to resist more tension than compression. The fire resistance is very good because of the high content of silicate acid. Bamboo durability heavily depends on the preservation treatment method. This preservation method includes smoking, heating, drying, coating and another method is chemical treatment.

S. Srimathi, S. Dinesh, R. Preetha, R. Reshmi, 'A Review of Bamboo As A Reinforcement Material in Modern Construction', IJSTE - International Journal of Science Technology & Engineering Volume 3 Issue 05, November 2016, presents that Bamboos to be split & Laminated with adhesive, sand to be coated with Bitumen for Bonding. *Bambusa vulgarius* species of bamboos can attain adequate Compressive strength

III. RESEARCH ELABORATION

The bamboo strips are Coated with the help of high strength Polyvinyl Acetate Adhesive or Epoxy Resin. The bamboo is cut and split by using pressing and splitting machine.

BOTNET DETECTION USING ANOMALY BASED AND BEHAVIOR BASED DETECTION

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ABSTRACT
This system introduces two-stage approach for the important cyber-security problem of detecting the presence of a botnet and identifying the compromised nodes that is nothing but bots, before the bot becomes active. The first stage detects anomalies by leveraging large deviations of an empirical distribution. This system proposes two approaches to create the empirical distribution: a flow-based approach estimating the histogram of quantized flows, and graph-based approach estimating degree distribution of node interaction graphs, encompassing both Erd ̋os-R ́enyi graphs and scale-free graphs. The second stage detects the bots using ideas from social network community detection in a graph that captures correlations of interactions among nodes over time. Behavior detection is done by maximizing modularity measure in this graph. An modularity maximization problem is non-convex. This system proposes an convex relaxation, a effective randomization algorithm, and establishes sharp bounds on an sub optimality gap. This system applies the method to real-world botnet traffic and compares their performance with other methods.

INTRODUCTION
An botnet is a network full of compromised computer nodes which are controlled by a "bot master." Botnets are mainly used for Distributed Denial-of-Service attacks, click fraud, or spamming. Distributed Denial-of-Service attacks floods an victim with packets/requests by using multiple bots.

Both, spamming and click fraud are extremely harmful to an web economy. And just because of these losses, botnet detection has mainly received considerable attention. Common intrusion detection focuses on individual hosts but is often ineffective in preventing botnet formation because not all hosts are zealously monitored and protected.

Botnets have evolved to bypass these detection methods by using more flexible C&C channels, such as HTTP and P2P protocols. In addition to this more types of C&C channels are emerging day by day, including Twitter. Some methods are been proposed to handle these botnets with more flexible C&C mechanisms by analyzing the communication patterns among hosts.

OBJECTIVE OF STUDY
1. To understand the concept of Botnets.

2. In this project we are using Bot Detection techniques to find the Anomaly and Behavior/Community Based detection in the network devices.

Botnets
The word botnet was derived from "network of robots". It is a widespread collection of a large number of infected computer system. Each infected system runs a piece of software program known as "bot". It can be also called as zombie network.

The Botnet attack structure is mainly divided into three layers i.e

a) Bot Masters: A bot master system keeps the track of machines infected and the tasks they perform. For proper organization of this system Bot Managers are created.

b) Bot mangers: This Bot managers performs the task which are allocated to them by the Bot masters, to spread out the commands to the Bots & also to report the number of infected systems. They usually send us information which can be said as security patch but those are not security patch but are infected patches send by the zombies.

c) Zombie Army: Bot Managers create an army of zombies which are nothing but n numbers of infected computers which performs attack under a stealth mode in order to prevent themselves from getting caught up while performing an attack.

Bot Detection techniques to find the Anomaly in the network devices
a) Anomaly Detection is used to Detect the Nodes are processed anomaly or not. In this module load the dataset and first flow based detection. This Detection is based on the splitting the node on connection. Next

COMMUNICATION SKILLS AND ETHICS

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ABSTRACT
This paper deals with "Communication Skills and Ethics" and its importance in everyone's personal and professional life to communicate to the world. In the modern era, people hardly take this into consideration. The first thing to influence communication all over the world is to know English language very well because it has tremendous effects on the communication skills and ethics as well as used as an international business language and overall it help us to build rapport among people. This research witnesses some reviews and exhibits the outcome of the professional training and the disciples' effective communication skills and their success.

Keywords: Communication Skills, Ethics, English language, professionals, training, disciple.

I. INTRODUCTION
This is the era of information exchange and we all send and receive messages everyday but we cannot completely call it as an effective communication. Many people lack this ability because they are not getting opportunities to learn and understand the emotions of the words and use of correct language and skills i.e. both verbal and non-verbal communication. They just back off on account of many factors that create problems in their future. This paper prominences that taking care of this situation by putting more effort into learning the terms seriously to achieve their goals.

The goal of the paper is to describe a successful model for professional skills both verbal and non-verbal communication proficiency and to encourage a convenient method on how to inculcate the people with communication skills and ethics for professional as well as personal practice.

II. EFFECTIVE COMMUNICATION
Communication is a two-way process sharing the meaning of information to attain mutual understanding of participants through a medium encoding and decoding. For effective communication, Francis J. Bergin advocated "**Seven Principles of Effective Communication**" and it is also called as "Seven C's" because all the seven words start with alphabet 'C' such as "Clarity, Conciseness, Concreteness, Correctness, Consideration, Completeness, and Courtesy.

The seven principles define its meaning as – While making information, choose short and familiar conversational words including illustration and other visuals, next construct effective sentences in brief with fewest possible words to save the time and expenses of both participants. Then compose concrete and convincing points with specific and clear message rather than general and vague. After that, confirm it as error-free communication by using proper format, grammar, spelling and punctuation to enhance appropriate readability to understand the information and then consider 'You Attitude' for the deal as per the recipient's point of view and make sure that you have completed with all the required information to avoid misunderstanding and delaying action. Finally, to build rapport - be friendly, open and honest while answering and apologizing because "**Courtesy Begets Courtesy**".

III. REVIEW
Studying and writing about this topic gave us opportunities to refer some other research papers and books that helped us to gain more knowledge to make this task successfully. The reviews of the papers are presented over here - "The factors for poor performances of students in communication skills were determined and solutions for the same were suggested with the necessary needs to develop the sense of students and their communication skills with the facts of the teaching-learning process of communication skills. [Abena Abokoma Asemanyi, Department of Communication and Media Studies, University of Education, Winneba, P.O. Box 25, Winneba, Central Region, Ghana]. Reference[4]

Essentially, ours is a society that moves on the wheels of communication. Particularly in the professional world, it is communication and its related skills that decide a person's career curve. The better one's communication skills, the higher are the chances for him/her to touch the zenith of success. The poorer one's communication skills, the greater is the possibility of not achieving one's goals Reference [5].

"Understanding your audience is fundamental to the success of any message. You need to adapt your message to fit the audience's goals, interests, and needs." Reference[6]

COMPARISON OF PI AND FUZZY CONTROLLED ACTIVE POWER FILTER UNDER NON-LINEAR LOADS

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ABSTRACT
This paper presents improvement of power quality with the PI and FUZZY logic controller for varying load conditions. Recently, a wide spread of power electronic equipments has caused an increase in power contamination (harmonic disturbances). Non-linear loads draw the harmonic currents of various types like characteristics, non-characteristics, inter-harmonic, sub-harmonics, fluctuating currents, unbalanced currents from main power supply. This type of loads called as no-linear load. The current harmonics are generated by non-linear load such as rotating machines, magnetic circuits like transformers, chokes, reactor, magnetic ballast and so on due to saturation in their magnetic circuits. Many fluctuating loads like frequency furnace, switching devices, electric hammers, switching devices behaves like a non-linear load. Optimization of the parameters of shunt active filter by fuzzy logic control is used in place of using conventional PI controller. A fuzzy logic SAPF is used to regulate DC capacitor voltage to improve APF dynamics, to ensure ac source currents produce high power quality. The main aim of APF is to reduce the harmonic contents within IEEE-519. By using fuzzy controlled APF we can achieve better performance of APF.

INTRODUCTION
Now-a-days, the dependency on the electricity is increasing day by day because of modernization and the utilization of more electronic devices. Power quality is to maintain the parameters of power at all parts of power system i.e. generation, transmission, distribution and consumer end. Since the pollution of power is much severe at consumer end, so it is important to study and maintain the power quality at consumer end. Here we are having number of reasons how the power is getting polluted including natural causes such as lighting, flashover, equipment failure and faults. Customer equipment also pollute the system and they draw the nonlinear current and act as nonlinear load. Increased non-linear equipment's and varying loads demand the compensation of the undulations caused. There is a drop in power factor and high degree of harmonics caused by these non-linear loads. APF removes difficulties related to reactive power and harmonics, simultaneously. There is a dc capacitor and a voltage source inverter together, designed to uplift the power factor and maintain the transmission system stability. APF varies the magnitude of the processed ac voltage from the inverters by using of pulse width modulation or by controlling the dc-link voltage. Thus draws lead/lag reactive power from the supply.

In control and design of APF, instantaneous reactive power theory is the basis for compensation current calculation. Here, the mains voltage is assumed to be ideal source, while, practically it is distorted. Under such scenarios, this theory may not be valid for applications. The p-q theory, since its proposal, has been applied in the control of three-phase active power filters. However, power system non-ideal voltages, in distorted voltage systems, the p-q theory control is not enough. This paper presents performance improvement of the shunt active power filter (SAPF), composed of the voltage inverter bridges having six IGBTs switches, DC-bus capacitor voltage source, and passive filter (Lf, R f) connected to the line supply voltage source fed non-linear load.
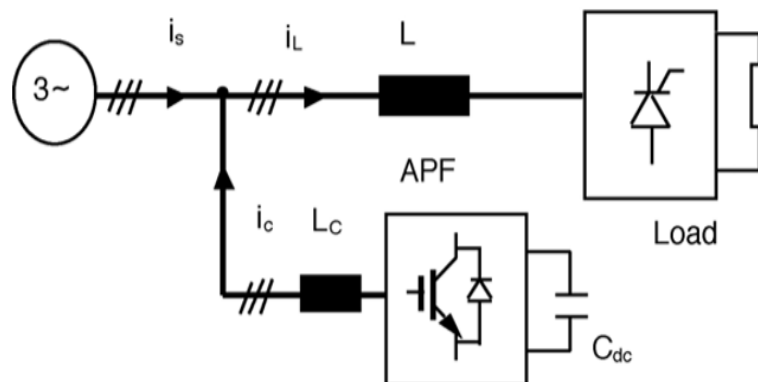
Fig-1: Block Diagram of Active Power Filter

OBJECTIVES OF STUDY
1. Comparison of PI and Fuzzy controlled APF.
2. Power quality improvement.

DESIGN, ANALYSIS AND FABRICATION OF ATV ROLL CAGE

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ABSTRACT

In this research paper we have done design and analysis for constructing a roll cage for an ATV. Roll cage is a very important component for a vehicle where its primary function is to protect the driver and the vehicle components from the surrounding. Roll cage must be designed and build in such a way that it will withstand all the forces exerted on it during normal or working conditions. Along with this a roll cage must be light in weight as it affects the overall weight of the vehicle. It should also be cost effective, i.e. the cost of designing, analysis and fabrication should be minimum as possible.

I. INTRODUCTION

Roll cage is an integral part of a vehicle. Its primary function is to create a protective cover around the driver. It must have adequate strength to withstand the stresses induced in the members during impact. Roll cage must also provide mounting points for suspension system and wheel hub assembly. Appropriate material should be selected in order to ensure the proper working of roll cage, also such a material should be selected that is light in weight and also cost effective. Design of roll cage was done on Solidworks 2016 and analysis was done on Ansys 2019.

II. LITUREATURE REVIEW

1. **Khelan Chaudhari, Amogh Joshi** – This paper considered factors like strength, bending stress, machinability, cost, availability, etc. while selecting material. After surveying they choose AISI 1026 as it is low in cost and also have good strength. A model is developed on Pro-engineer and tested in Autodesk Multiphysics. Newton's 2nd law of motion is used for Force calculation.

2. **Bharat Kumar, Prashi Upreti, Anirudh Tripathi, Shankar Batra** – In this paper they have chosen ERW2 steel pipes for fabrication of Roll Cage. They adopted it because of its high yield strength. Also considering the fact that it is easily available and low in cost compared to other materials. They designed the model in CATIA V5 and analysis in ANSYS 14.5. The main purpose of designing is to optimize to maximum strength and minimum weight. Work done method is used for force calculation.

3. **Denish Mevawala, Mahesh Sharma, Devendra Patel, Darshan Kapadia** – in this paper they have selected the material ST-52 and used ANSYS for designing and analysing. They have used the model to withstand the impact, torsion, roll-over conditions and provide a great amount of safety to the driver without subjected to deformation. G-Force method is used for Force calculation.

III. OBJECTIVE OF STUDY

1. To select proper material that will be light in weight, cost effective and strong enough to resist stresses.

2. To design a roll cage that will house all the important components and prevent them from any damage.

3. To analyse the design for different impacts occurring during operation.

4. To construct the roll cage using the final design that passed all the analytical tests.

IV. DESIGN METHODOLOGY

The important steps for designing of an ATV roll cage in systematic order are as follows:

1. **Material Selection**

Material selection is a very important factor while designing a roll cage. The material selected should be strong enough to withstand the forces exerted during impacts. Cost and weight should be also taken into consideration while selection as it will directly affect the efficiency and economy of the ATV. After careful consideration we have selected AISI 4130 as this material meets all our requirements.

Properties	AISI 4130
Density (gm/cc)	7.85
Young's modulus (GPa)	205
Tensile strength (MPa)	670
Yield Strength (MPa)	460
Elongation (%)	25.5

DESIGN AND ANALYSIS OF MAGNETIC SUSPENSION

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ABSTRACT

Magnetic suspension is technology for absorption of shock by means of a magnetic force. Magnetic suspension system have many advantages like It provides more stable effect, very less friction etc. So far, many kinds of magnetic levitation systems have been proposed and developed. These magnetic levitation system use various methods to control the suspension force. Two types of systems are electromagnetic suspension systems (which control the coil current so as to vary the suspension force in order to achieve stable suspension), and permanent magnet suspension system. A magnetic shock absorber- (for automobiles and two-wheelers) which makes use of the magnetic repulsion between dipoles to achieve shock absorption. This shock absorber will eradicate the problems faced in the spring shock absorbers due to friction and other factors.

The present paper aims to study how Magnetic suspension will allow us to get variable stiffness and much higher comfort just by playing with magnetic field. It will also allow us to reduce wear and tear along with less maintenance. The study will also focus on developing suspension system with simplicity in construction and ease of application.

Keywords: Magnet, Shock Absorber, Development in Suspension

INTRODUCTION

Magnetic Suspension is a shock absorbing device. Magnetic suspension is a method by which an object is suspended with no supports other than magnetic fields. Generally the suspensions are used as of spring type. The direct shock on spring is reduced in magnetic suspension. The magnets are arranged in a manner that gives more repulsion. Magnets are of required quality with required magnetic field strength. Magnetic suspension systems have been extensively studied and have found numerous applications. Most magnetic suspension systems are electromagnetic suspension systems (EMS systems) that utilize electromagnets, but here permanent magnets are used instead of that. Various mechanisms are used for various suspensions like wishbone, dual link, multi links, etc. When a lever (Bell crank) used in suspension it consist of lever and two links for horizontal arrangement of suspension.

Then, based on the principle that the magnetic force is inversely proportional to the square of the gap between the magnet and the ferromagnetic body, the mechanism controls the air gap between the magnet as per load and the object so as to adjust the attractive force. Magnetic suspension is described as the fastest reacting suspension in the world as sensors monitor the road surface up to 1000 times per second and an ECU can make variations within a few milliseconds resulting in the possibility of multiple damping variations being made in a second.

Magnetic ride control uses a system known as magneto rheological technology for suspension damping. Each absorber is filled with a polymer liquid containing many small magnetic particles. An electrical charge is sent to the liquid in the absorber which immediately changes the position of the particles in the liquid and its viscosity. The viscosity of the polymer liquid can be changed to an almost solid state similar to plastic or rubber in composition. As the viscosity of the liquid changes, it offers a difference in the damping. Each of the four dampers are adjusted individually and independently even when it seems that all of them are doing the same thing. This ensures a comfortable ride along various road surfaces. Magnetic suspension reduces vibrations, bouncing, noise and body roll very effectively on all road surfaces and at any speed that the vehicle could travel. The reduction of body roll may reduce the need for antiroll bars. Another benefit is that these dampers easily offers the best of both worlds in the ride comfort/handling compromise that many other suspension systems are subjected to. Although this type of suspension offers a very comfortable ride, sport settings can be applied or tuned into the system to cater for performance vehicles.

The Cadillac CTS-V uses magnetic suspension/magnetic ride control and has earned the respect of many for its ride comfort/handling compromise as much as its powerful engine. Magnetic dampers are designed with similar dimensions and connection points to other types of dampers so they are usually attached to the chassis of the vehicle similar to how a coil spring suspension would. Magnetic suspension or magnetic ride control is used by a range of Cadillac vehicles and several other high end vehicles from General Motors (GM) like the Chevrolet Corvette. Other companies, such as Ferrari and Audi are also known to use magnetic suspension in their vehicles. Ferrari uses them in most of their vehicles and Audi uses them in the TT and their supercar, the R8.

DESIGN AND ANALYSIS OF PARKING ELEVATOR PLATFORM SYSTEM

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ABSTRACT

Vehicles have always been heavy and requiring regular repairs. That was the necessity behind car lifts invention. These days, car lifts are an integral part of many garages and repair shops but it's applications are not limited to that, they're also used to raise vehicles for storage in places where ramps are inconvenient or if there are space restrictions. The car lift we are working on is used for raising Light Motor Vehicles (LMV). The scissors elevator is an elevator with a system of links and hydraulic cylinders on which the metal platform is capable of moving in the vertical plane. This is achieved by using of links, folding supports in a crisscross pattern, called scissor mechanism. Also, scissor lift is an integral part of most of the workshops and building objects. The important advantage of lifts is that they even offer the best way to organize a technological and industrial process. Also, almost all lifts give the possibility to change the place of its installation without much effort, which is more important in the regularly changing circumstances in the production process these days. The main objective of our project is to design and analyze car lift to fit the given parameters and for doing that, the history and types of car lifts are studied, several research papers are referred to. In case of our lift, it had to be more stable and have a higher capacity so as to lift LMV. Literature & the task of material selection have been performed by considering hydraulic scissor lift as a LMV parking elevator system. The scissor lift can be used in different types of combination with any of applications such as pneumatic, hydraulic, mechanical, etc. Material selection plays a key role in designing a machine and also influence on several factors such as durability, reliability, strength, resistance which finally leads to increase the life of scissor lift. The computational values of two different materials such as aluminum and mild steel are compared for best results. A hydraulic scissor lift is used to lift LMV upwards with its crisscrossing foundation supporting beneath the platform. As the hydraulic fluid is forced in or out of the hydraulic cylinder it pushes the scissor arms outwards lifting the platform to the desired height. The project uses Solid works for design and ANSYS for analysis of the CAD model of the lift. After the design is analyzed, the parts are ordered and the lift is assembled.

Keywords: Car Lift, Hydraulic Lift, Hydraulic Cylinder, Scissor Arms, Top Platform, Base Support Frame, Design, Analysis Weight Optimization, Mild Steel, Aluminum Alloy, SOLIDWORKS, ANSYS.

INTRODUCTION

The most common industrial lift used for lifting purpose is the hydraulic scissor lift. This may seem like a complicated piece of equipment, but in actuality hydraulic lift tables are simple in design. Hydraulic scissor lift tables comprises of four major components:

1. **Platform:** This is the top of the lift table where lifted product sits. It can be supplied in a variety of sizes.

2. **Base:** This is the bottom of the structure that rests on the floor. It contains the track the scissor legs travel in and have a support.

3. **Scissor legs:** These are the vertical members that allow the platform to change elevation.

4. **Hydraulic cylinder:** The most common industrial scissors lifts are actuated by one, two, or three single-acting hydraulic cylinders. These allow the lift table to move in horizontal and vertical directions. A scissor lift is easily extended and compressed, safe operating machine used for transportation of light motor vehicle to its expected position.

TYPES OF SCISSOR LIFT

The scissor lifts can be classified as follows:

1. **Hydraulic lifts:** The hydraulic scissors lift is operate using the fluid pressure that raises the platform via power through the use of pressurized hydraulic oil.

2. **Pneumatic lifts:** The pneumatic lifts are operated using air pressure and they are very efficient because the power supply is carried out by compressing the atmospheric air.

3. **Mechanical lifts:** The mechanical lifts are extended through a rack and pinion system or power screw, both of which can convert rotational motion.

Hydraulic scissor lifts are very powerful tool for applying a ton of force on the platform plate of component which is equally distributed on scissor arms.

DESIGN AND DEVELOPMENT OF AERO AMPHIBIOUS VEHICLE

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1. ABSTRACT
A widely used definition of AAV is AERO AMPHIBIOUS VEHICLE (which is based on a drone having multiple domains) which can maintain its flight along a path controlled by the fight controller without an on-board pilot. This Mechanization has proven its utilizations in many areas such as environmental survey, surveillance and weather research, monitoring and protection, agriculture, exploration and aerial target system, it can provide better applications for airborne surveillance for military operations, and reconnaissance missions. This project consists of designing process of Aero Amphibious Vehicle. It is recognized as "Multi domain Multi-copter" which can fly in air and move on the ground and float on water, applicable for any exigencies like medical assistance, rescue operations disaster affected people, spying for enemy countries etc. The project provides high degree of information about the new concept of quad-copter and design procedure. The design is developed in Solid Works and nick name of this drone is Aero Amphibious Vehicle.

Keywords: Multi-Domain Copter, UAV, Amphibious Vehicle, Tank Copter

2. I. INTRODUCTION
The Aero Amphibious Vehicle is a drone with various multiple capabilities. Aero Amphibious Vehicle can be remote controlled aircraft (e.g. controlled by a pilot at ground control station) or can fly autonomously based on pre-programmed flight plans. The Aero Amphibious Vehicle have been most often been relatable with the military but they are also used for search, research and rescue, surveillance, traffic monitoring, weather monitoring and firefighting operations.

The Aero Amphibious Vehicle is a concept of having multiple domains on single UAV such that as an aerial vehicle primarily it is able to hover above the ground but with the help of extended domain, it is also able to move on ground. This project gives detailed explanations and study to introduce multi-domain feature on UAV's and quad-copters. The project also provides the advantages of multi-domain feature and future scope.

A Quadcopter mechanism with four rotors is used in the design. Due to its distinctive design comparing to traditional Quadcopter, it allows a more stable platform, making quadcopter ideal for various tasks such as surveillance and aerial photography. And it is gathering limelight and becoming popular in UAV research in recent years. A quad copter has four rotors all work together to produce upward thrust and each rotor lifts only 1/4 of the weight, so we can use less powerful and therefore cheaper motors. The quadcopter movement is controlled by substantially varying the relative thrusts of each motor.

Various robotic machines are actively being developed for both civilian and military use to perform dull, dirty, and dangerous activities. An AAV can be defined as a "powered, amphibious vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted by the control stations and it can be recoverable, and can carry a lethal or non-lethal payload. Therefore, the goal of this paper is to present a brief overview about the available open-source control system to describe the building of an AAV, based on one of these systems and the first result of a field test, which was carried out with this low-cost system.

II. LITERATURE SURVEY
- **Agus Budiyono** Advances in Unmanned Aerial Vehicles Technologies - The paper explains a recent progress in the Mechatronics for unmanned aerial vehicles from the modelling, control and guidance perspectives. The Dynamics of the rotorcraft-based unmanned aerial vehicle is been presented to explain the principle of modelling for the control application. A number of major trends in aerial robotics are discussed state estimation algorithm, SLAM, vision for guidance, integrated modelling, manoeuvre automation and safety verification

- **Hashem Izadi Moud, Alireza Shojaei, and Ian Flood**, -This paper has briefly reviewed current applications of USVs, UWVs and UGVs across all industries, and elaborates on the current construction-related applications of these devices. By reviewing the non-construction related applications of USVs, UWVs and UGVs, the paper has identified the potential areas for UVs future application in the construction industry. It is worth noting that very few of the reviewed papers were conducted by

DESIGN AND DEVELOPMENT OF CLASSIFICATION MODEL FOR RECYCLABILITY STATUS OF TRASH USING SVM

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ABSTRACT
SVM is a relatively new supervised classification technique for the cartographic community of land cover. They have their roots in statistical learning. SVMs are inherently essentially binary classifiers. Our classification problem involves receiving images of a single object algorithm and classifying it into a recycling material type. The input to our pipeline are images in which a single object is present on a clean white background.

Keywords: SVM; hyperplane; machine learning.

INTRODUCTION
Recycling is important for a sustainable society. The current recycling process requires recycling facilities to sort garbage by hand and uses an arrangement of huge channels to separate out more distinct objects. Consumers can also be confused about how to determine the correct way to dispose of a wide variety of materials used in packaging.

This input to this project are images of a single piece of recycling or garbage, process them and classify it into six classes consisting of glass, paper, metal, plastic, cardboard, and trash. In order to mimic a stream of materials at a recycling plant or a consumer taking an image of a material to identify it, our classification problem involves receiving images of a single object and classifying it into a recycling material domain. The input to our pipelines is imaging in which a single object is present on a clean white background. We then use an SVM to classify the image into six categories of garbage classes. By using a machine learning algorithm, we can predict the category of garbage that an object belongs to base on just an image. This will have beneficial economic effects and also positive environmental effects.

WHAT IS SVM?
SVM is a supervised learning model which is used for classification and regression analysis. For image classification, it uses the linear separable. Linear separable algorithm is used to determine a pair set of sets is linearly separable and finding a separating huperplane if they are arising in several different areas. If they arise in the same area it means they are the same object.
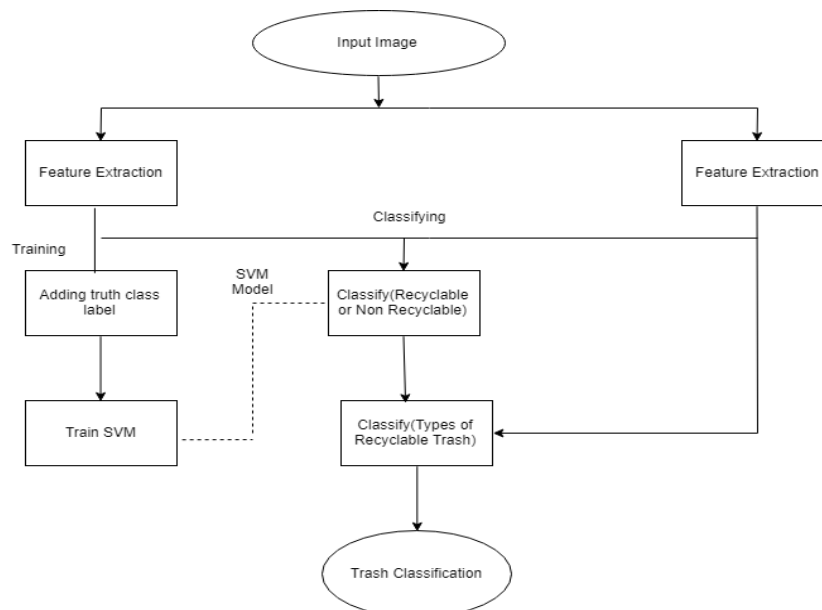
Fig: Block diagram of SVM

PROPOSED WORK
An SVM was used for the first analysis to classify waste into recycling categories. The SVM was chosen because it is considered one of the best initial classification algorithms and is not so complicated compared to a CNN.

DESIGN AND DEVELOPMENT OF DELTA 3D PRINTER

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ABSTRACT

3D printing is a very used process in industry, it allows the designers to produce a prototype in a very short time, which is tested and quickly remodeled .The Delta printer is based on the functional principle of a Delta robot, which is a parallel robot with 3 interconnected arms fixed to a motherboard. Compared to the Cartesian coordinate's printer, the Delta 3D printer has a bigger flexibility used to get the nozzle in the working position, higher working space, higher speed and temperature conditions, the possibility of using other types of printing material compared to the existing ones, futuristic design, usage of high quality pieces, higher stability.

Keywords: Compact, Cost efficient, Delta 3D printer, Delta Robot, Universal.

I. INTRODUCTION

The most fascinating three-dimensional printer design to watch print is the delta 3D printer. The delta design is quite different from most 3D printers and is best known for its vertical orientation and relatively small footprint although larger units can be quite tall. This paper will help you learn what you need to buy or build your own delta printer, as well as how to get the most out of your delta printer. A Delta 3D printer is a type of parallel robot that uses geometric algorithms to position each of three vertical axes simultaneously to move the nozzle to any position in a cylindrical build area. Thus, when the printer is printing, all three axes move in a mesmerizing ballet of mathematical equation. Before we jump into how the hardware mechanisms work, let's take a short tour on what 3D printing is all about. A firm understanding of the concepts of 3D printing is essential to getting the most out of your 3D printer investment. Even if you are already a 3D printing enthusiast and especially if you have never used a Delta 3D printer, you may want to read the following sections because we present the material with delta printers in mind.

The initial 3D printers were used in the 1980s where a pattern submerged in a liquid polymer would be traced by a computer. The traced pattern hardened into a layer, thanks to the laser, and that was how you built an object out of plastic. Since then tremendous progress has been made in additive manufacturing such that material extrusion is now used. By this method, an object is built out of matter that is pushed from a mechanical head like the way an inkjet printers extrudes ink onto paper. Interestingly, the cost of acquiring 3D printers has been decreasing with the advancement of technology.

- Components
1. LCD
2. Filaments supporter (gift)
3. Print parts
4. End stop
5. Steppermotor
6. ZRIB V2.0 Control board (compatible with Ramps1.4)
7. New upgrade Carrier(Front)
8. New upgrade Carrier(Back)
9. Carbon diagonal rod
10. High performance pulley
11. New upgrade effecter
12. 3mm thickness aluminuim bed

Fig-1: Major components of delta 3D printer

DESIGN AND FABRICATION OF LOOP WHEEL SUSPENSION SYSTEM FOR WHEELCHAIR

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ABSTRACT
Suspension system is the main component of any vehicle whether it might be car, trucks, motorbike, bicycle or wheel chair. Suspension increases the comfort level and increases ride quality. Since suspension on wheel chair is not that comfortable We decided to not only do research on suspension system of wheel chair but also fabricate it. Loop wheel suspension system will increase the comfort level of passenger. In this project we are going to take standard foldable wheel chair and would replace the spoke wheels with our loop wheels.(In-wheel suspension).

Keywords: Wheel Chair, In-wheel Suspension, Solid Works, Ansys Workbench 19.0

I. INTRODUCTION
In today's world there is a great demand for a comfort vehicle whether it might be car, cycle or wheelchair. Suspension system plays an important role in giving the comfort and smooth ride for any vehicle. Since vehicle like wheelchair needs the good suspension system for comfort and smooth ride because they are used by patient so the concept of in-wheel suspension is used. The concept of loop wheel suspension system is for better shock absorbing performance and for greater comfort. This project presents a study of an In-wheel suspension system which is placed in a wheel chair. The loop wheel however allows isolation both in vertical and horizontal directions. The loop wheel provides durability high strength and a better shock absorber on off roads conditions. The suspension system includes the Wheel, Rim, Suspension (shock absorber) instead of spoke hub. The replacement of spokes by adaptive suspension will allow the torque to be transferred smoothly between the hub and the rim.

Fig-1: In-Wheel suspension system

TYPE OF WHEELS IN WHEEL CHAIR
Spoke Wheels - The spoked wheel is very similar to the spoked wheel on a bicycle and was the norm for all wheelchair prior to the development of composite wheels for wheelchair use. Spoked wheels are still optional on many wheelchair models but only those who expect high performance from their wheelchairs usually opt for them. In spite of their popularity, composite mag wheels will flex during use and this flexing increases the energy needed to propel the wheelchair. Spoked wheels, when in good condition, donot flex and are therefore more efficient for the user. The average user probably wouldn't notice the difference but those who are very active probably will.

Composite Mag Wheels - Composite mag wheels are by far the most common wheels in use for wheelchairs today and come standard on most wheelchairs. The composite mags are made out of is a nylon/fiberglass-like material that is strong, resilient and light weight. They can be fitted with several types of tires and hand rims to meet the needs of the user. The rims of these wheels are maintenance free and are designed to spring back to their original shape should outside pressures due to accident or rough use warp of bend them.

High performance Wheels -High performance wheels are the wheels pictured at the top of this article are not used by average wheelchair users. There are many kinds of these wheels on the market for sports and very active users.

SUN TRACKING WITH AUTOMATED CLEANING SYSTEM FOR SOLAR PV MODULES

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ABSTRACT
The solar photovoltaic panel are basically worked dusty environment which is one of the case in developing countries such as India. The major factor that reduce the generation of power are the pv panel, shadows, snow, high temperature, dust and dirt, bird droppings, pollen and sea salt . It is usually the efficiency of the solar panel can be decreased by up to 50% in a dust environment as the interference with the amount of direct sunlight received the pv array. This automated system is made using 8051 microcontroller which controls the stepper motor coupled with the gear box(40:1 ratio). The solar panel rotates in a day. By using this project we increase solar panel efficiency.

Keywords: pv solar panel, single axis sun tracking, dust position, automation cleaning, tracking system.

INTRODUCTION
Population growth is increasing day by day .electricity is also required for this purpose.But the demand for electricity in india is increased. India stand fourth place in producing electricity and stands a third place in consuming electricity. In modern day,all area of industries is going to be automated , economically and environment freely to reduse the global warming problem.

The sun emit solar energy at an extremely free price therefore there is ample availability solar power in nature.If all solar energy should be transformed into usable forms, it will be more adequate to supply the worlds strength demand ,however this is no longer possible because of existence in the atmosphere such as impact of clouds,dust and temperature. The sun travels through east to west per day .A single axis tracker increases annual output by approximately 30%. The benefits of the tracking system are to collect solar energy.

The manual cleansing has risks like danger of team of worker accident and damage of the panels, movement, difficulties, poor upkeep etc. Accumulation of dust from the outdoor environment on the panel of solar photovoltaic system is natural. There where studies to showed that the accumulated dust can decrease the performance of solar panels but the result were not clearly quantified . so it is very important to remove dust from the solar cells. With the help of wiper on the bases of object able. We can remove dust from solar panels and increase the efficiency of solar cells.

The effectivity of solar panel also calculated after cleaning the surface for one day, one week, and a one month. And subsequently evaluating each the efficiencies it is proved that photo voltaic panel efficiency increases considerably. Thus the developed model enhances the photo voltaic panel performance. Various energy generating products like coal, gas, renewable, diesel and their some of them are going to deplet in few decades.

OBJECTIVES
1. To avoid dust associated problems on solar panel.

2. To clean solar panel effectively.

3. To increase efficiency of solar panels by 360^0 rotation.

4. To increase efficiency of solar panels by cleaning it efficiently.

METHODOLOGY
A.Implementation of the sun tracking and self-cleaning of solar pv modules
Sun tracking structures are designed in a way to track the photo voltaic azimuth angle on a single axis. In single axis monitoring machine the collector is circled round solely one axis, the solar panel moves tracing an angle from the sunrise to the sunset. This attitude traced by the sun is known as the azimuth attitude is defined as the angle between the lines due south and projection of everyday to the collector as proven in Figure 1. Here we have used vertical axis with motion in the east-west (E-W) direction. The automatic cleaning and tracking systems are implemented the use of a dc motor, equipment field (40:1), shaft, and sliding rod photo voltaic PV modules and round steel rings for contacts as shown in Figure 1. Then control of the stepper motor and the cleaning association is done the usage of a microcontroller. The implementation of Sun monitoring cum cleaning mechanism for Solar PV module is explained in the two steps (A and B) mentioned in subsequent paragraph.

ROOM COOLING ANALYSIS WITH VORTEX TUBE

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ABSTRACT
In first and foremost quality of a research or development is to develop eco-friendly product or system, which fulfill our needs without affecting environment. Today environmental safety is become prior needs in world and common people. This paper is generally carried out to increase efficiency, cooling effect of such an eco-friendly device called vortex tube. In recent years, Air Conditioner has evolved drastically and uses of it are increasing day by day, it is widely used in home, offices as well as industrial sector. But due to its cost and large holding space for its equipment like condenser, etc. requires more space. So due to this it is not feasible and acceptable to all people to use it. Because of this it has resulted in extensive research into novel technologies of generating some alternative for it. Experiment and calculation are going on to produce such a device or a system which can provide same cooling effect, at same room condition. A background on the basic concepts of cooling with vortex tube at spot is presented and recent patents of this with their important and relevant applications of free eco-friendly energy are reviewed and discussed.

Keywords: Vortex tube, Eco-friendly, Cooling, Efficiency.

INTRODUCTION
The vortex tube was invented by French physicist Georges J. Ranque in 1933. He found that when compressed gas was injected tangentially into the tube, flow streams at lower and higher temperature were generated and exhausted from different ends of the tube. The cold stream was exhausted from the central exit near the inlet and the hot stream was exhausted from the peripheral exit at the other end of the tube. Ranque explained the separating effect in the vortex tube as one, which depended on expansion and compression. A vortex tube is a Thermo-fluidic device, which generates cold and hot streams from a single injection of pressurized gas. The gas emerging from the "hot end" can reach temperatures of 200 °C (392 °F), and the gas emerging from the "cold end" can reach −50 °C (−58 °F). Without any moving parts or chemical reaction within the tube.
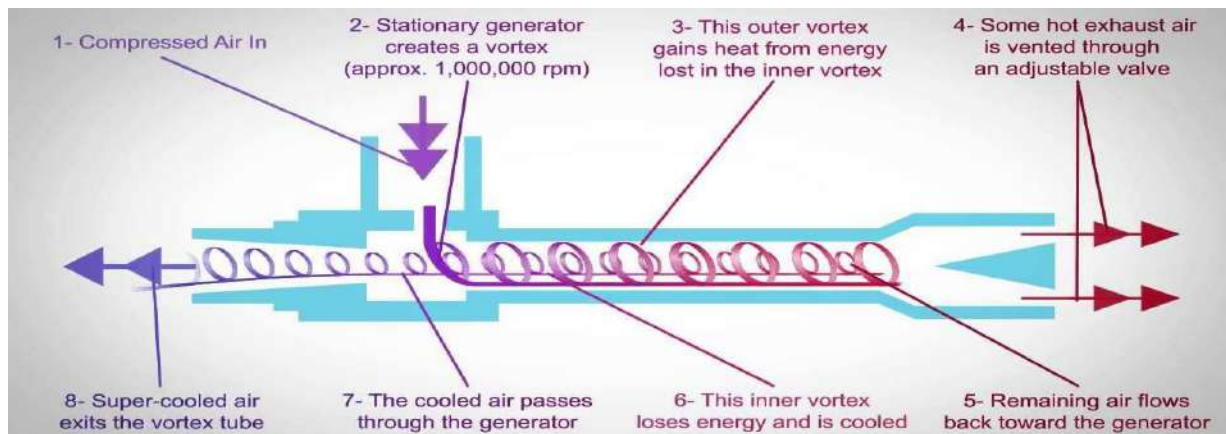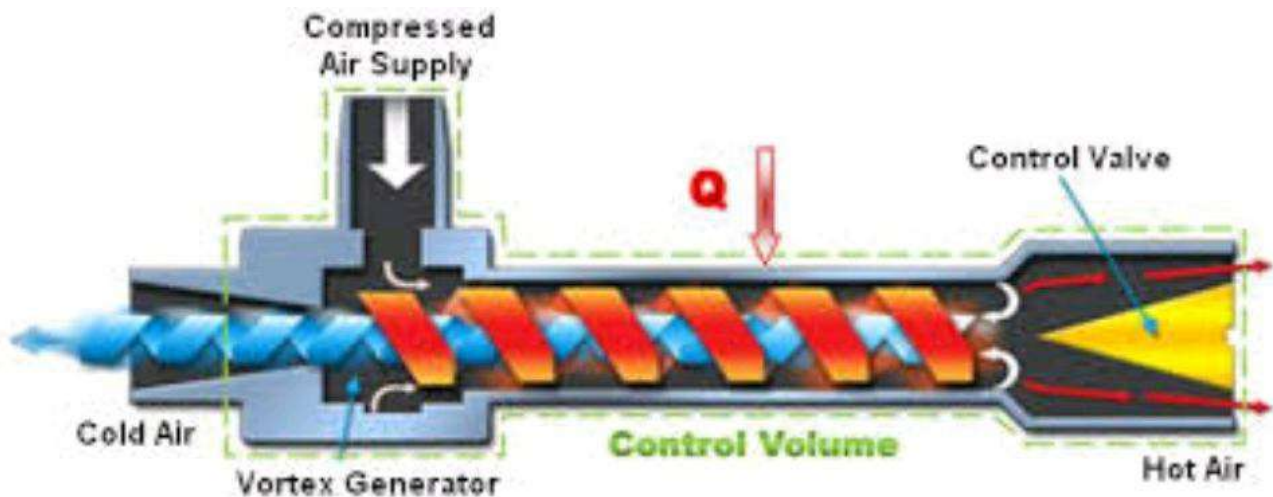
A CRITICAL REVIEW ON: MALWARE DETECTION FOR ANDROID USING MACHINE LEARNING

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ABSTRACT
Malware is always been a issue regarding the operating system or in the software world. In the same way the android system is also going through the same problems. To analyze such malware, we are using machine learning algorithms. We have to use dataset which have both type of application malicious and viruses which will be installed on android device to analyze the behaviour patterns. The Android Application will be using SVM-Based Approach which will validate the performance of the proposed system which then show that the proposed malware detection scheme is able to identify malicious Android applications efeectively and efficiently. We generate system feature vector from each app by executing the algorithms. The metrics (feature vector) support gives the most effective form of malware detection.

Keywords: Machine learning, Android, Applications, App classification.

I. INTRODUCTION
Malware is nothing but the short name for malicious software, in general referred to many forms of hostile or intrusion creating software, spyware, Trojan horses, backdoors, and rootkits. Main aim of malware is to damage, steal, disrupt or do some bad actions. Malware is powerful enough to infect any kind of computing machine running application, and the prevention of malware is being well studied for personal computers (PC). Smartphone devices the detection techniques used are lagging far behind as compared to fast growth of mobile population is being increased.

Some recent survey has shown that there are about 2.1 million android applications are there in market. Due to popularity of android system has led to more spreading of android malware. This malware are spreading in market by the third parties developing application. The Google android market also doesn't promise to guarantee that all its listed applications are threat free. There are also such reports about download Trojans applications that download their malicious code after installation such applications can not be easily detected by Google's technologies during publication in Google android market. The android threats include banking Trojans , spyware ,bots ,root exploits, SMS fraud, phishing, premium dialer & fake installer.

Penetration techniques commonly used for malware applications for installation activation & running on the android system are repackaging, updating and downloading.

REPACKAGING
It is among the common techniques for malware developers to install malicious applications on a android platform. Repackaging approach for popular applications and misuse them as a malware. The developer downloads such types of application and recode them and add their own malicious code and upload that application to the official android app store or on the different markets.

UPDATING
This technique is much more difficult for detecting the malware. The malware developer may still use repackaging but instead of encoding the inflict code to the application, the developer may include a update component that will able to download malicious code at the runtime.

DOWNLOADING
This is the most traditional attacking technique. The malware developer need to attract the user to download the interesting and attractive applications.

II. RELATED WORK
Mariam Al Ali eta el. [1] - In this paper , a practical and effective anomaly based malware detection framework is proposed with an emphasis on Android mobile computing platform.

Naser Peiravian, Xingquan Zhu [2] – In this paper a propose to combine permission and API (Application Program Interface) calls and use machine learning methods to detect malicious Android Apps.

Chenglin Li, Rui Zhu, Di Niu [3]- In this paper a propose highly reliable machine learning Algorithms for android Malware detection based on the use of Factorization Machine and the extensive study of Android App features.

A LITERATURE REVIEW ON DESIGN AND ANALYSIS OF ELECTRIC MOTORCYCLE

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ABSTRACT

In today's situations Automobile industry becoming more and more competitive. The vehicles can get the energy from petrol or diesel engine for its drive. The depletion of fossil fuels reducing the amount of petrol and diesel day by day. Now automobile industry requires new source of energy to run the vehicles, it can be done using electric energy. In this report, the design and analysis of electric motorcycle is described. Major drawback of e-bike is requiring frequent charging from EB supply. This paper shows the charging arrangement of E-bike. The electrical energy is supplied to the motor by battery and Battery can receive the electric energy by dynamo and charging system. This e-bikes running cost is very low, when compare to other sources of energy used in bike. Market available E-bike batteries are designed to spent 4-6 hours/charge by using Electric Battery supply. These batteries can be charged by dynamo, Alternator or with the help of regenerative controller. So electric supply cost also gets reduced.

Keywords: Electric motorcycle, Chassis, Brushless DC motor, Battery, Controller.

I. INTRODUCTION

Energy crisis is one of the major concerns in today's world due to fast depleting resources of petrol, diesel and natural gas. Electric vehicles is the solution which can help to save the fossils fuels for future and decrease the usage of fossil fuels. This project will deal preliminary with electric motorcycle where the internal combustion engine is replaced by a battery and electric motor drive which is used for personal transportation. The principle and working of Lithium ion battery, Lithium ion phosphate battery, Wheel hub motor, Regenerative controller and Alternator are provided to you. Mechanical Components including chassis, transmissions, wheels and brakes are presented. The design of frame of motorcycle and body is done on Solid works software and the Analysis on the frame of a motorcycle is done on Ansys software by applying appropriate Boundary conditions which will help us to show the results that how a frame will act practically when certain loads are added to it. The Electric bike which will be running on battery, the power is supplied by the motor and it will run the bike. The efforts are being made to reduce the charging time, increase the speed of a vehicle, increase the range of a vehicle and decrease the weight of a vehicle. The main purpose of using this E-bike is that it is user friendly, economical and relatively cheap. The market available e-bike use Brushless direct current motor for drive purpose.
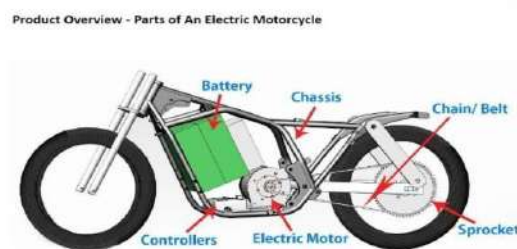
Fig-1: Major components of Electric Motorcycle

From above figure we can conclude the major components of electric motorcycle i.e. Battery, Chassis, Electric motor, Controller and drive.

II. LITRETURE VIEW

Haruo Sakamoto (1), confirmed the strength of designed motorcycle by performing a stress analysis. In prior to the analysis of designed frame, a simple calculation was conducted using a cantilever model of 100mm × 100mm cross section and 100 mm length with the force of 50N at the tip. The calculation by hand is 0.3 MPa and the result of FEM is 0.29 MPa. This result is enough to perform FEM stress analysis for motorcycle model. Saurabh Rege et. al (2), concluded that the trellis frame is the lightest frame and yet provides high rigidity due to triangulations provided by tubes and frames. The trellis frame thus has the highest strength to weight ratio among all frame types. Unlike the cradle frame, the tubes of trellis can accommodate components of larger size which also perform structural duties themselves thus providing increased strength and rigidity. Trellis frame provides better centralization and lower the overall vehicle weight. The centre of gravity of frame is below the rider seating area thus ensuring low and centralized frame weight. R.D. Belekar et. al (3), theymodelled and

A LITERATURE REVIEW ON WIRELESS CHARGING SYSTEM FOR VEHICLES BY USING FLEMINGS METHOD TO CHARGE THE VEHICLE BATTERY

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ABSTRACT
In today's situations Automobile industry becoming more and more competitive. the vehicles can get the energy from petrol or diesel engine for its drive. The depletion of fossil fuels reducing the amount of petrol and diesel day by day. Now automobile industry requires new source of energy to run the vehicles, it can be done using electric energy. In this report, the design and analysis of electric motorcycle is described. Major drawback of e-bike is requiring frequent charging from EB supply. This paper shows the charging arrangement of e-bike. The electrical energy is supplied to the motor by battery and Battery can receive the electric energy by dynamo and charging system. This e-bikes running cost is very low, when compare to other sources of energy used in bike. Market available e-bike batteries are designed to spent 4-6 hours/charge by using EB supply. These batteries are charged by dynamo. So electric supply cost also reduced. Many electric bikes have been developed before, but the drawbacks of those bikes are their cost, efficiency, charging time, etc.

Therefore, in this project we are going to design and analyse electric motorcycle which will have a low manufacturing cost than other electric motorcycle, as well as we will try to increase its efficiency and increase the running rate as well as good speed. In this project we will compare the batteries which have been previously used in electric motorcycle as well as we study about the battery which we will use in electric motorcycle in this project. Efforts are been made to increase the running rate of a vehicle with help of suitable battery and decrease the charging time of a battery with help of selecting suitable battery and a charger.

To design an electric motorcycle, the program used in this project for designing are SolidWorks 2016 and ANSYS 18.0 (for analysis). Consequently, of using these programs, this project allows us to apply, learn and link technical knowledge of automobile, Electrical and computer knowledge.

INTRODUCTION
Inductive charging (wireless or cordless charging) is a kind of charging that uses an electromagnetic field to transfer energy between binary objects using electromagnetic induction, generating electricity across a magnetic field. Example- Induction chargers practice an induction coil to produce an alternating electromagnetic field from in a charging base, and a second induction coil in the portable device takes power from the electromagnetic field and transforms it back into electric current to charge the battery.

Example- Induction chargers use an induction coil to generate an alternating electromagnetic field as of within a charging base, and a second induction coil in the convenient device takes power from the electromagnetic field and changes it back into electric current to charge the battery.

Fleming's Right-hand Rule (for generators) displays the direction induced current when a conductor attached to a circuit travels in a magnetic field. It can be used to govern the direction of current in a generator's windings.

When a conductor for example a wire attached to a circuit travels through a magnetic field, an electric current is induced in the wire due to Faraday's law of induction. The current in the wire can have two likely directions. Fleming's right-hand rule index finger and middle finger mutually perpendicular to each other (at right angles), as revealed in the diagram.

The direction of the motion of the conductor is determined relative to the magnetic field.

The direction of the magnetic field is indicated by first finger. (north to south)

Then the second finger signifies the direction of the induced or generated current inside the conductor (from the terminal with lower electric potential to the terminal with higher electric potential, as in a voltage source)

ANALYSIS OF COPPER VS ALUMINUM WINDING MOTORS

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ABSTRACT
In this paper, we are comparing the many parameters of the winding materials and improve the motor efficiency as well as reduce the cost of the motor. We can reduce the manufacturing cost by using the designed aluminum material windings instead of copper material winding for several appliances and limited rating motors. It is essential to gain a new motor with the equal characteristics and the same power efficiency while decreasing conductor material price and thus the rate per motor unit. For this purpose, we analyze two motors, one with copper winding and one with aluminum winding. The learning focuses on mechanical and electrical characteristics, in order to evaluate the rated and starting torque values for the shaft at some stage in speed function. Another vital parameter is the motor temperature in continuous function. A variety of equipment manufacturers have currently replaced the motor stator winding material from copper (Cu) to aluminum (Al) to decrease the product cost in the competitive international appliance market. Although discount in the motor price can be achieved, a noticeable increase in the failure charge due to stator insulation breakdown will be observed.

Keywords: Stator Winding, Temperature, Cost-Effectiveness, Motors, Energy Efficiency

INTRODUCTION
In small electric powered motors are used for a huge vary of activities. Many of them are single segment motors. Motors are used in household appliances, small, electric driven pumps, fans, etc. It is estimated that the 90 % of electric motors are beneath 0.75 kW. An essential variety of these are used for special services. The small motors are manufactured for devoted applications in extended production. This way the motor manufacturers can decrease the manufacturing costs. The motor's price depends on its energy and efficiency. In this paper we are analyzing 75W induction motor. In order to gain the minimum price, motors are chosen which admire two important features

• The most of electricity requested by using the user • Energy efficiency.

OBJECTIVES OF STUDY
1. Substitute material for copper winding with economical aspects.

2. Study and reduce the losses and noise in both the windings.

3. Study temarature variations for different parameters.

OVERVIEW
• **Copper or Aluminum Stator Winding**
Copper and aluminum are used as conductor substances in induction motors manufacture. The contemporary density of copper is greater with 30% than aluminum's. Although the aluminum charge is lower than copper's, in reality in a 1/3 ratio, some professionals think about that copper is top of the line because the copper resistivity is with 63% larger than aluminum's. Considering these facts, the usage of aluminum in stator winding for induction motors is pretty acceptable. Another situation is given via the steel resources. In case of copper, the very best stage of request was 25.5106 tone/year in 2012. There sources of copper are estimated to final for round thirty more years, barring taking into account the recycling process. It is very challenging to predict the metal's prices in the future, but, based on the amount of resources, the electrical equipment producers expects that the aluminum rate will increase slower in the future.

METHODOLOGY
I. Designing of the motor.

For designing the motor we need to know the physical parameters of the winding material used in the motor.

Table-1: Physical Property of Wire Material

Physical Property	Aluminum	Copper
Resistivity,Ω-mm^2/m	0.03	0.01665
Mass Density,kg/dm^2	2.7	8.88
Expansion Coefficient,μmσ_c	23.862	16.73

ANTI-THEFT SYSTEM BASED ON GSM AND GPS MODULE

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ABSTRACT

In this paper a vehicle following plan is proposed which track the vehicle and offers to imprison the vehicle in a base timeframe when it is lost. Vehicle following and bolting framework has a Global Positioning System (GPS) and a Global System for Mobile Communications (GSM). Proprietor can send a proclamation whenever to the gadget which is in the vehicle. The gadget is secret key ensured. Proprietor's message must be fused with the secret phrase to open the gadget. At the point when the gadget is opened, at that point it will give the co-ordinate of the vehicle through the message. In the event that the vehicle is filched, proprietor can direction the gadget to bolt the entryway of the vehicle and proposed framework will consequently inform closest police headquarters about taking occasion. Haversine equation is utilized to discover the closest police headquarters from GPS information and back end database. At that point the closest police headquarters may initiate vital activities to recoup the vehicle. The entire framework is fueled by a battery-powered battery and connector. This paper clarifies the foreseen outcome and gives some substance about future execution.

Keywords: Vehicle tracking system, Control unit, PIC-16 microcontroller, GPS & GSM technology, Cellphone, Google map.

INTRODUCTION

There are various GPS (global positioning system) based after structures winning today. Still in the Indian circumstance they are not in a lot of usage because of economy. Correspondingly, wherever all through the world the systems presented are fantastically for the four wheelers; yet for a country like India where a lot of the people thrives using bicycles, here is the most affordable wellspring of an adversary of theft following structure. In current days, the prosperity of private and open vehicles is a critical concern. To ensure prosperity while simultaneously traveling, GPS following system is presented in vehicle. Vehicle following system using GPS and GSM empowers customer to discover the vehicle through Short Message Administration (SMS) in cell phone. Police can seek after the sign created by the accompanying system to locate a taken vehicle. Various parameters like land encourages, speed, partition, etc can be gained and subsequently observed on a propelled guide using programming.

Watching and administering adaptable assets are a trot need of associations overseeing transportation organizations, and a part which private vehicle owners would enjoy. Extending the use of such a system to against theft use was the fundamental objective of the present structure plan. The structure made arrangements for executing a vehicle following system which can help a customer with following the vehicle and offer unfriendly to burglary organizations. It uses a mobile phone to talk with the structure, which uses GSM and GPS advancements to give the perfect organizations. The work also intended to develop a shrewd Graphical UI (GUI) for the phone application. In this paper, a steady Arduino based vehicle following system with GPS and GPRS shield is associated with the moving vehicle to enable the owner/customer to pursue the territory of that vehicle.

This proposed structure will constantly screen a moving vehicle and report the status of the vehicle. For doing so an Arduino UNO board with PIC16 microcontroller is interfaced to a GSM module and GPS authority. The GPS recipient will always give the data indicating the circumstance of the vehicle to the extent degree and longitude ceaselessly. The GSM module will send the position (Latitude and Longitude) of the vehicle to telephone from a remote spot. Comparable data is moreover appeared on LCD. Google map shows the zone and name of the spot on PDA dynamically.

OBJECTIVES OF STUDY

The main objectives of the proposed pic16 microcontroller based tracking system

1. The primary goal of the project is an acquisition geographic coordinates of vehicle in real time using GPS receiver.

2. Communication of information about location of vehicle using the GSM module.

3. Display name of the google map in real time using cell phone and position.

AUTOMATIC CHANGEOVER SWITCH

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ABSTRACT

Automatic changeover switches (ACSs) square measure terribly necessary for the operation of electrical systems as they permit the transfer of hundreds between power sources while not physical intervention. to confirm economical and 0 physical intervention in operation, the precise objectives of the current style square measure to achieve: automatic transfer shift, overload protection ,short-circuit protection and generator stop functions. An automatic state change over switch is designed primarily to disconnect load from its power source and transfer it to a standby supply say generator, in case there's an influence outage. The change method is completed in a controlled manner thus on stop the false beginning of generator at terribly short power outages. Once the availability is restored, the load is transferred back to mains offer The entire method is controlled by an impact unit that keeps sensing to observe that whether or not the most offer is accessible or not.

Keywords: Generator; Motor; Mains Supply; automatic changeover switch (ACS)

1. INTRODUCTION

Many electrical and digital home equipment require DC or AC strength for their operation. While AC electricity is made available generally via AC grant mains, DC energy is made accessible via batteries. However there are situations when there is a shortage of AC energy (through power failure) or DC power (due to restrained lifetime of batteries). To overcome this problem, we commonly come across many alternatives. For instance we can use generators or inverters in emergency cases to get AC energy when the mains furnish is switched off. Similarly in case of DC power, we can use either a battery or an AC to DC energy furnish in alternative.. The mission goals to format a prototype for automatic switch that transfers the load from mains to an auxiliary source, such as a generator, in an event of energy failure or regular electricity outages. The project implements the starting of a generator as soon as the outage occurs. The circuitry involves of relays and a control unit. Though the venture remains to be a prototype, a number precautions are taken to adapt to real lifestyles situations. There are sure realistic assumptions that are made while designing the prototype. These are:

i. To Turn ON a generator we solely want to switch ON a kick-starter (an electric powered motor that starts a generator).

ii. A reserved battery powers the kick-starter as well the switching circuitry as soon as the outage occurs.

iii. The generator desires to be switched ON only if the power outage occurs for extra than 2 seconds.

iv. Actuator wished to change off the Generator will raise out its function as soon as it is triggered by mains supply.

With the above cited conditions, the aim of the circuit is to begin a kick-starter by way of connecting it to reserved battery and as soon as generator achieves steady state, generator is loaded after a predetermined interval. An ACS is used to change the load between two power supplies are down of any one of them connected to the load. It makes certain the furnish of power to the load with minimum small gap between the strength failure and reconnecting the load to secondary strength supply. The ACS is connected between load and the energy supplies. Its feature is to transfer the load from fundamental source of electrical energy or public utility energy supply on its failure to secondary source of electricity or generator and then switch the load again to utility mains provide when it restores. A block graph of typical ACS is shown in figure 1 below.
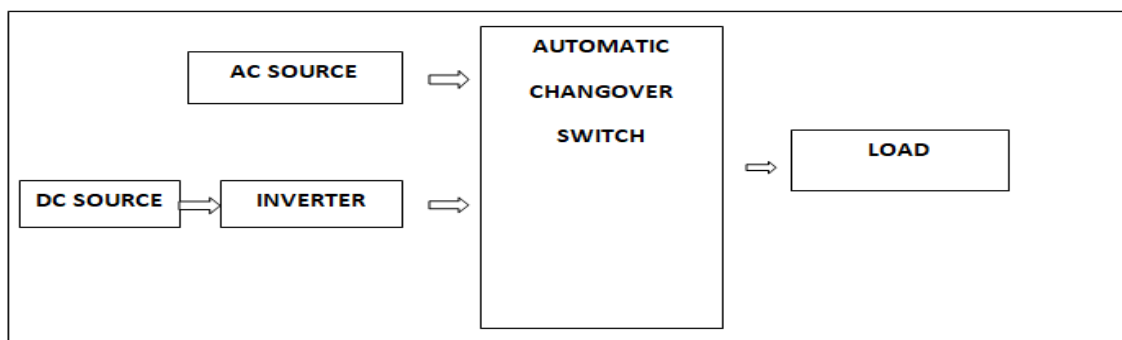
Fig-1: Block diagram of typical Automatic Changover Switch (ACS)

COLLEGE APPLICATION FOR PARENTS

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ABSTRACT

In recent years the Android Technology with web services has brought many drastic changes in mobile application development field. The creation and management of accurate, up-to-date information regarding a student's academic career is crucial for the colleges. Now a days the information to parents regarding their ward is provided through post cards, SMS or E-mail, but these techniques are very time consuming and lengthy. Hence this application provides a solution through a simple interface for maintenance of student information and also helps parents to get detailed information regarding their ward such as attendance, fees due, marks, important notice, event details, etc. It also contain query message option for parents so that parents can interact with the college faculty through this application. It also facilitate parents to gain all the notifications about the activities held in the college. Each individual parent will be provided with the details of his/her ward only. Also we have seen over the years that the process of notice boards, important notification about academics has been carried out manually almost across all educational institutions. The process is not only time consuming but also inefficient. This traditional system requires a manual work of writing notifications, taking printouts, displaying it on notice boards and also requires students to watch periodically. It uses a lot of paper work. Today, we need not to maintain paper based Notice boards. Following this thought, we have developed a system based on the concept of web services which is implemented on Android mobile application as well as on PC that communicates with the database residing on a remote server.

Keywords: College Management, Machine Learning, Chatbot, Parents Portal.

INTRODUCTION

This Android Application provides you with 24/7 access to your child's academic information. With a parent portal account, you may log on at any time to view information regarding your child's schedule, grades and attendance. Please read the information on this page. Answers to many of your questions may already be covered here. The Parent Portal is a confidential and secure online web portal where you can get current information about your child's school attendance, grades, assignments, schedule, etc. Depending on your child's grade, you may have online access to student schedules, attendance, progress reports, report cards, and teacher grade book. This module is designed for staff, which use mobile phone to take attendance, upload result and upload college notifications as well as discussion forum. The entered admin details are encrypted and sent to server for verification. Only after successful authentication the operations are performed. If username and password cannot match, he/she can enter in to next static screen. In the Faculty module they can see their research papers, placements data and Alumni of student data.

OBJECTIVES OF STUDY
1.   To understand the concept of Android Application Development.

2.   To understand the concept of Chatbot Interaction.

Chatbot is a piece of software that conducts a conversation via auditory or textual methods. Such programs are often designed to convincingly simulate how a human would behave as a conversational partner, although as of 2019, they are far short of being able to pass the Turing test. Chatbots are typically used in dialog systems for various practical purposes including customer service or information acquisition. Some chatbots use sophisticated natural language processing systems, but many simpler ones scan for keywords within the input, then pull a reply with the most matching keywords, or the most similar wording pattern, from a database.

A.   LITERATURE SURVEY
Pallavi Mohadikar, Nasrin Mulani, Afnan Shaikh, Rachna Sable, College Parent Interaction using Android Application. They showed how concept of web services will be useful for communication between remote server and Android application. With the help of this application parents' area able to access all the details regarding their ward.

S.R.Bharamagoudar ,Geeta R.B. , S.G.Totad. Web Based Student Information Management System. Provides a simple interface for maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students easily. The creation and management of accurate, up-to-date information regarding a students' academic career is critically important in the university as well as colleges.

AFFECTED AREA AND DISEASE DETECTION IN LEAF USING MACHINE LEARNING

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ABSTRACT

Disease detection, in the present world has become a very common task to all. Out all the disease detection techniques, achieving the best possible result has become the main goal of most researchers around the globe. Out of all those techniques, Convolution Neural Network (CNN) is the most popular image processing technique by which the target image is retrieved based on the useful features of the give image. Agricultural productivity is something on which economy highly depends. This is the one of the reasons that disease detection in plants plays an important role in agriculture field, as having disease in plants are quite natural. If proper care is not taken in this area then it causes serious effects on plants and due to which respective product quality, quantity or productivity is affected. Proposed system works in two phases the 1st phase deals with training data sets. This include training both healthy as well as diseased data sets. The 2nd phase deals with monitoring the leaf and identifying the disease using CNN Algorithm. This system is used to detect affected part of leaf in percentage and its disease. The system thus tries to reduce the speed of disease detection which was once a crisis of older disease detection system.

Keywords: Image Processing, Machine Learning, CNN Algorithm, Leaf Disease.

INTRODUCTION

Disease detection is one of the latest trends which have become a critical part of several disease detection applications. Several approaches and techniques have been employed to make the overall disease detection stage much more close to perfection. The studies of plant can be determined by observable patterns of specific plant and it is critical to monitor health and detect disease within a plant. Due to the exponential inclination of population, the climatic conditions also cause the plant disease. Symptom of plant disease is a visible effect of disease on the plant. Symptoms can be change in colour, change in the shape or functional changes of the plant as per its response to the pathogens, insects etc. Precise, accurate and early diagnosis may reduce the usage of pesticides. The system works in two phases the 1st phase deals with training data sets. This include training both healthy as well as diseased data sets. The 2nd phase deals with monitoring the leaf and identifying the disease using CNN Algorithm. The concept of image processing with data mining technologies assists us in following purposes: 1) To recognize infected leaf 2) To measure the affected area 3) To find the shape of the infected region 4) To determine the color of infected region 5) To influence the size and shape of the leaf.

OBJECTIVES OF STUDY

1. To understand the concept of Image processing (IP).

2. To understand the concept of CNN algorithm.

With a wide range of image processing systems coming into action the main objective is to achieve the most optimum system where we implement algorithm to generate the best results. There are several techniques by which we can generate the best result, but each varies in their performance. So, the objective is to study the various available algorithms and to make use of best algorithm to generate the desired results.

TO UNDERSTAND THE CONCEPT OF CNN ALGORITHM

To achieve the best performance, in this project we apply a Convolutional neural network (CNN) algorithm, for image recognition and classification. Each image is made of numerous pixels that enclose some values. These values are applied to study each image. Moreover they can be used to compare with other such images in datasets to detect infected leaf. CNN image classifications takes an input image, process it and classify it under various categories. Moreover to help a common user to understand the entire process of image processing the system will be displaying various image processed features out of which RGB values, GLCM matrix are a few. Overall we implement a system where we are able to recognize infected leaf and measure the affected area of a leaf.

A. LITERATURE SURVEY

Several researchers have carried out their study in the field of Image Processing and have made many notable discoveries. Jiang, P., Chen, Y., Liu, B., He, D., & Liang, C. (2019). Real-Time Detection of Apple Leaf Diseases Using Deep Learning Approach Based on Improved Convolutional Neural Networks.

A RESEARCH PAPER ON FLUID MIXING M/C USING LEAD SCREW MECHANISM

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ABSTRACT

The stirrer of conventional machine rotates in one direction only which creates a particular flow pattern in the fluids hence the particles tend to stick to the walls of container owing to the centrifugal force rather than mixing thoroughly in mixture of paint , ultimately results into poor quality mixture of paints there by poor quality output of paint . In order to have a through mixing of metal oxide powder it would be appropriate to have a stirrer that rotates such that rotates about own axis as well revolves about another fixed axis which helps it reach all parts of the container. This ensures that turbulence required for thorough mixing is provided all over the container.It would be advantageous to change pattern of flow , which avoids vortex formation, ie motion of particles in a spiral path. Also if an wiper is added that brings the particles adhering to walls of container back into main flow or mixing area, good quality mixture will be ensured.The planetary mixer with strainer is an ideal solution that has all the above mentioned features. This machine involves a rotating stirrer that revolves about the fixed container axis as well as incorporates an strainer that changes the flow pattern and also acts as a wiper. Machine has variable mixing speed feature at the same time delivers heavy torque to the stirrer for proper mixing.

INTRODUCTION

In industrial process engineering, mixing is a unit operation that involves manipulation of a heterogeneous physical system with the intent to make it more homogeneous. Familiar examples include pumping of the water in a swimming pool to homogenize the water temperature, and the stirring of pancake batter to eliminate lumps. Mixing is performed to allow heat and/or mass transfer to occur between one or more streams, components or phases. Modern industrial processing almost always involves some form of mixing. Some classes of chemical reactors are also mixers. With the right equipment, it is possible to mix a solid, liquid or gas into another solid, liquid or gas. A bio-fuel fermenter may require the mixing of microbes, gases and liquid medium for optimal yield; organic nitration requires concentrated (liquid) nitric and sulphuric acids to be mixed with a hydrophobic organic phase; production of pharmaceutical tablets requires blending of solid powders.

Mixing of liquids occurs frequently in process engineering. The nature of liquids to blend determines the equipment used. Single-phase blending tends to involve low-shear, high-flow mixers to cause liquid engulfment, while multi-phase mixing generally requires the use of high-shear, low-flow mixers to create droplets of one liquid in laminar, turbulent or transitional flow regimes, depending on the Reynolds number of the flow. Turbulent or transitional mixing is frequently conducted with turbines or impellers; laminar mixing is conducted with helical ribbon or anchor mixers.

CONSTRUCTION AND WORKING

SYSTEM DESIGN
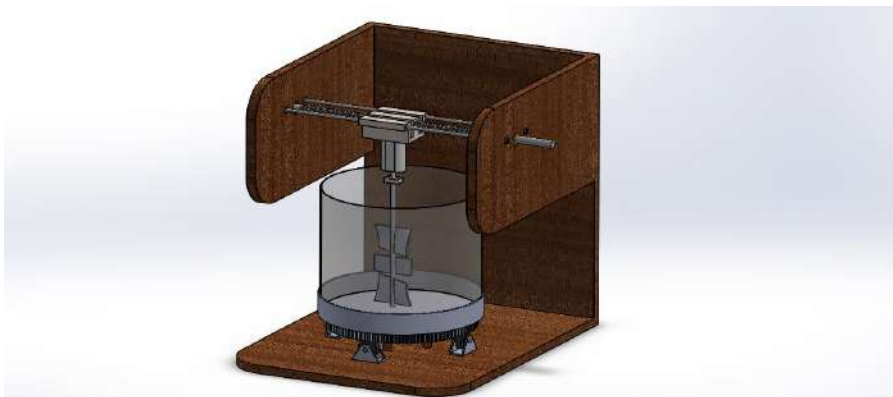
ADVANTAGES

- Proper mixing of viscous fluids.

- Decrease in mixing of time.

INVESTIGATION OF DESIGN OF PHOTOVOLTAIC DRY CLEANER ROBOT

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ABSTRACT

Solar energy is highly suitable alternative energy source to its natural existence and can potentially replace conventional fossil. The solar panel farms are generally situated in the large area where panels can generate high amount of solar energy. These places are mostly depends on the area where most of time sunlight is available without more obstacles in day time e.g. desert and open area. In these places air contains many dirt and dust particles with it. In the solar plant solar panels can produce high amount of energy but these dirt and dust can reduce the quality of energy which solar panel produces. Therefore cleaning the solar panels is required time to time. There are different method for cleaning solar panels such as manual cleaning, pressurized water, compressed air and robotic cleaning. In this we are using microfiber setup for cleaning the solar panel. By using microfiber instead of water for cleaning the solar panel is more efficient it does not require any water and more time. The mechanism is based on control circuit, DC motor, microfiber to clean the panels. The microfibers assembled on the rotating shafts which are placed on a robot which cleans the solar panels automatically by giving just simply commands. These automatic robots clean up the dirt and dust particles on panels on time to time continuously. By cleaning the solar panels on the regular basis of time these panels can produce sufficient energy more efficiently without any problem and its increases the life of solar panels. This paper gives you the idea how the robot will work and its effect on the energy production by solar plant. It will also help you to understand the problem arise due to not cleaning of solar cells.

Keywords: Solar panels, Automatic Cleaning Robot, Microfiber.

1. INTRODUCTION

The sun is responsible for nearly all renewable source of the energy available on earth. The sun emits energy at an extremely large rate hence there is abundant availability of solar energy in the nature. If all solar energy could be converted into usable forms, it would be more enough to supply the world's energy demand. However, this is not possible because of natural conditions such as effect of clouds, dust and temperature. According to research, there are many ways to use solar energy. In thermal solar system, for example, the heat from radiation is used in the form of heating, directly. On the other hand, in the case of photovoltaic systems, solar energy is converted into electricity. In photovoltaic systems, electronic devices known as photovoltaic cells are positioned on panels which is directly exposed to sunlight and transform the energy through the electron flow between two layers of semiconductors which is then stored in battery for further uses. There is unprecedented interest in renewable energy, particularly solar energy, which provides electricity without giving rise to any carbon dioxide emission or any effect in environment. The efficiency of solar panel is limited due weather, so it is very much essential to take care of parameters like dust, humidity and temperature. So it is necessary to clean the solar panel on a regular basis to increase the production rate.

There are various methods available for cleaning Photovoltaic solar panel, some of the operations and their advantages and disadvantages are listed below:

1.1 Manual Cleaning

This method is easy to use and the equipment doesn't cost much but since it need water and man power the cost of the operation is very high. This method can be used for domestic solar panels cleaning but in large plant the number of man as well as cost of cleaning increases. Sometimes it is also not possible to reach to clean the all modules of solar panels. In this process human efforts needed all the time.

1.2 Pressurized Water

As the name suggested, water is being used to clean the dust on solar panel which must be pressurized. It consists of a pipe which is connected to the pump and the pump is connected to the water tank. A nozzle is also used at the end of the pipe so that the water exist at the end of the pipe must be at high pressure to clean the dust or dirt particle.

The pressure of water must not be such that it crack or damage the solar panel and enough too to clean the solar panel for the increase in efficiency. This method needs a huge amount of water so, it is not logical to immolate water to get electricity, especially that the regions that are rich of sun power are poor in water. It is usable for large farms of solar panel. It has an advantage of less human effort. It has also disadvantage of consumption of large amount of water. The system must be maintained for maintaining the higher efficiency of the solar panel.

A STUDY ON CARBON, CAPTURE & STORAGE IN CEMENT INDUSTRY

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ABSTRACT

Concrete is the third most used substance on earth after air, water and cement is the secret to its success. Sustainable cement production today takes place in the modern dry process facilities incorporating the best available technologies. CCS is an essential technology for most the only way to decarbonize the cement industry. The cement value chain is unique in its structure and could lend itself to a lower cost of implementation for CSS than any other sectors. Furthermore, when combined with bioenergy, CCS holds the potential for producing negative emissions, which is the only well developed technology to achieve negative emissions. This exploratory study focuses on an important case study of the complexity of implementing CCS in an industrial context.

INTRODUCTION

The special ingredient or glue which makes all this possible is a rather ordinary-looking grey powder called cement. Globally, cement production accounts for around 5% of man-made CO_2 emissions. The industry recognizes this responsibility and embraces its commitment to reduce this markedly, especially by contributing to the circular economy. In the roadmap, we focused on what can be done to reduce CO_2 in cement production using today's technology, and will speculate on what could be achieved by 2050. However, the cement production process is unique due to the fact that the 60% of the carbon dioxide produced is as a result of chemical reactions when processing the raw material, not just from the combustion of fuel. Out of the total emissions CO_2 emissions generated through the production of cement, 40% comes from the use of energy whilst the remaining 60% is produced as a by-product of the thermal decomposition of limestone. This means that even if energy efficiency and renewable energy measures were technically feasible and cement production was upgraded accordingly, the maximum CO_2 abatement that could be achieved is 40%. The CCS association believes that the challenges of delivering a modern energy system that is environmentally sustainable, affordable for consumers and guarantees secure energy supply requires CCS to be widely deployed alongside other low-carbon technologies such as renewable energy, nuclear energy, and energy efficiency measures.

OBJECTIVES OF STUDY

- Ensure that CCS is recognized and accepted as an essential technology that underpins energy security objectives and cost-competitively reduces CO_2 emissions from power, energy-intensive industry and other energy uses.

- Facilitate a supportive environment for the successful delivery of early commercial-scale CCS projects and maximize the lessons learned from those projects for subsequent projects.

- Focus on the development of a political, regulatory, technical and economic landscape that underpins sustainable CCS business models and supports the deployment of CCS at scale.

TECHNOLOGY

According to the Carbon Capture & Storage Association, CCS is "a technology that can capture up to 90% of the CO_2 emissions generated from the use of fossil fuels in electricity generation and industrial processes, preventing the CO_2 from entering the atmosphere." (The Carbon Capture & Storage Association, 2017).

There are two key concepts involved in CCS: separation of carbon dioxide (CO_2) from other gases, and its storage or confinement. CCS is a way of taking the CO_2 produced from energy-intensive processes, separating it from the rest of the exhaust gases, and transporting and storing it underground so that it cannot enter the atmosphere. CCS has the potential to capture a significant proportion of the CO_2 produced in a cement kiln from both the combustion of fossil fuels and the calcination of limestone.1 there are several basic approaches to the separation of CO_2, but only two of them—post-combustion and oxy-fuel combustion—have been identified as potentially feasible in the cement industry.

Separation: Post-combustion technology means the separation of the CO_2 from the exhaust gas after, or at the end of, the cement kiln; it would apply to existing cement plants without significant modifications to the production process. Oxy-fuel combustion technology means operating the cement kiln with a mixture of pure

REVIEW & PROPOSED BRAIN CONTROLLED MOTOR VEHICLE USING ELECTROENCEPHALOGRAM (EEG)

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ABSTRACT
Brain controlled motor vehicle using EEG is the device that can be controlled using the user's brain signals. Brain Computer Interface (BCI) is a one of the technique to communicate with human brain through computer. The purpose of this project is to provide disable and paralyzed people to move them freely without any human assistance by brain signal. It utilizes an EEG (Electroencephalogram) headset to secure information, orders and unravel the informational collection on the equipment and accomplishes wanted directions is dependent on the motor vehicle. The technique which is used to detect electric activity in brain is Electroencephalography (EEG) brain computer interface. EEG measures the voltage fluctuations in the brain and the data which are obtained from EEG sensor is stored in controller. The brain wave measurement is delivered to the brain computer interface unit, which is analyzed and amplified and classified by attention and meditation level of brain that is Alpha, Gama, Beta, wave to headset then to arduino consist microcontroller had been program as per desire to our motor vehicle.

Keyword: Electroencephalogram (EEG), Brain Computer Interface (BCI), Bluetooth Module, Microcontroller (Arduino), Motor Vehicle.

INTRODUCTION
The human brain is made up of billions of interconnected neurons. The patterns of interaction between these neurons are represented as mind and emotional states in keeping with the human thoughts, this sample may be converting and producing different electrical waves. A muscle contraction will also generate a completely unique electrical signal. The manipulate instructions is probably transmitted to the motor wheels that is with this entire mechanism, we will move a motor wheels in keeping with the human Thoughts and it may be grew to become with the aid of blink thoughts and it could be became through way of blink muscle contraction. electroencephalography (EEG) is the measurement of electrically with in the inhabitant mind. Thoughts wave sensors are used in scientific use, however are used the brain control interface (BCI) and neuron feedback . the BCI is a right away communication pathway between the mind and an external device to provide direct verbal exchange and manipulate among the brain and physical devices by translating different styles of brain activity into commands in real time to control the motor vehicle, EEG and eye-blinking indicators are wanted. on this machine we have a tendency to use easy unipolar electrode to report EEG sign from the brow . We've got the sign interest

In addition, we moreover extract the attention-blinking indicators. Consequently, attention and eye-blinking alerts are collected as the management alerts through a Bluetooth interface and therefore they electrically interface in the motor vehicle and as a consequence the motor controlled might be controlled. on this assignment brain controlled motor vehicle the usage of EEG the are structures which can bypass traditional channels of conversation (i.e., muscle mass and mind) to provide direct conversation and control between the human brain and bodily devices by way of translating exceptional styles of mind activity into commands in actual time with those commands a cell motor vehicle may be controlled. the goal of the motor vehicle which can assist .

The disabled human beings of their each day lifestyles to do a little work impartial of others. Here, we analyze the brain wave alerts. Human brain includes thousands and thousands of interconnected neurons in line with the human mind, this pattern will be changing which in turn produce extraordinary electric waves. a muscle contraction may even generate a completely unique electrical signal these types of electric waves may be sensed by using the mind wave sensor and it's going to convert level analyzer unit (lau) will receive the mind wave raw records and it'll extract and procedure the sign the usage of arduino then the control instructions could be transmitted to the motor vehicle to process with this whole device, we are able to move a motor vehicle consistent with the human mind and it may be grew to become by using blink muscle contraction.

It's a manner of recording and monitoring mind activities with the usage of electrodes connected to someone' head. essentially, the electrodes file pastime through electric impulses that the brain neurons emit to speak with the rest of our bodies. Up till the last few years, electroencephalography has, for the most element, only been to be had in hospitals and different medical institutions in which technicians use very steeply-priced EEG gadget

REVIEW & PROPOSED CONTROL SYSTEM SCHEME FOR TRANSIENT STABILITY

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ABSTRACT
Power system transient stability phenomena is associated with the parallel operation of synchronized machines.It becomes important with heavy power transmissions through long distance From the viewpoint of system theory, power system transient stability is a strongly nonlinear, high-dimensional problem.The transient stability explains swing equation while dynamic stability deals with transient period.In this paper, analysis of transient stability is done with the help of control system based study where transfer functions of the different equipments are calculated.Determination of stability using the proposed method is conservative and may be appropriate for power system operation as well as planning purposes.The analysis of fault based on transfer function modeling makes the study more accurate.The MATLAB/simulink model is designed for the analysis of transient stability during fault and a brief algorithm is also presented.

Keywords: Power System, Faults, Transient Stability, Swing Equation, Dynamic Model, Transfer Funcion

INTRODUCTION
An electrical power system is widely categorized into - supply of power through generators, the transmission system that transports power to the load, and also feeding the power to the consumers via distribution system.The Power System Stability Terms and Definitions as "The ability of an electric power system, for a given initial operating condition, to regain a state operating equilibrium after being subjected to a physical disturbance, with most system variables bounded so that practically the entire system remains comprehensive".

If the stability of power system is disturbed, it not only causes severe blackouts but also when exposed to various contingencies may lead to steady-state, transient or dynamic system instability. Voltage frequency and quantity of power provided to the loads is the prime concern of power system engineering. A system fault like a transmission line fault, may cause losing synchronism within machines of the system leading to transient instability.Transient stability is mainly linked with the immediate after-effects of a line fault on generator synchronism.

For interconnected power systems, the rotor angle stability is the tendency of synchronous machines to be in synchronism after been exposed to a fault. According to the type of incident, the rotor angle stability is of two types- small signal for small disturbances or transient stability for major disturbances. Further, voltage stability is the ability of a power system to have voltages which are normal and steady, everywhere in all conditions.The imbalance of reactive power between production and demand is the sole major factor which causes voltage instability in the power system network.

OBJECTIVES OF PAPER
1. To design power system and depict a line fault.

2. To analyse the transient stability occurred with the control system techniques using transfer functions.

3. Future scope to design a controller to stabilise the system after a fault.

TRANSIENT STABILITY
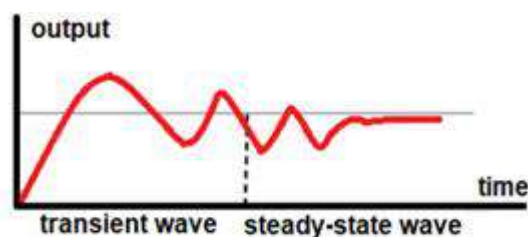
Fig-1: Unit step response

It is defined as the ability of the power system to return to its normal conditions after a massive disturbance. The massive disturbance occurs in the system due to the sudden removal of the load, fault occurs in the system, line switching operations, sudden interruption of a line etc. The swing equation describes the behavior of the synchronous machine during change in position, which reduce the synchronism of the machine, and the system becomes unstable.

REVIEW ON 3D SIMULATION OF FIXED WING AIRCRAFT

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ABSTRACT
An unmanned aerial vehicle (UAV) or uncrewed aerial vehicle, commonly known as a drone is an aircraft without a human pilot on board and a type of unmanned vehicle. A fixed-wing aircraft is a flying machine, such as an airplane, which is capable of flight using wings that generate lift caused by the aircraft's forward airspeed and the shape of the wings. Fixed-wing aircraft are distinct from rotary-wing aircraft in which the wings form a rotor mounted on a spinning shaft, and ornithopters in which the wings flap in a manner similar to that of a bird. The wings of a fixed-wing aircraft are not necessarily rigid; kites, hang gliders, variable-sweep wing aircraft and airplanes that use wing morphing are all examples of fixed-wing aircraft. a light weight wing which can match the requirements of work conditions is desired. The main motto of our project is to improve the efficiency of the fixed wing aircraft by changing the design of airfoil, so that it can land and takeoff in short distances. After comparing several types of wings we chose Fixed Wing design. There are number of design considerations to consider while designing a wing. They are wing mounting position, wing shape, wing span, wing area, airfoil shape, wing thickness, spar design, aileron design, dihedral angle, tip design and angle of incidence. Hence this study provides a better design to increase the use of fixed wing aircraft. This study is conducted on live and simulated experiments using modeling and simulation software. At last we develop a 3D model for realistic simulation.

INTRODUCTION

An unmanned aerial vehicle (UAV) is a type of aircraft that does not require a human pilot.The flight path of an unmanned aerial vehicle is controlled with the help of either a remote controller or autonomously by computers onboard. UAVs were used for missions that were originally deemed too dangerous for humans. Originally used for military applications, their use is expanding to various other commercial and recreational purposes like agriculture, policing, aerial photography,product deliveries and drone racing. An Aircraft is a machine that can fly, but is heavier than air.
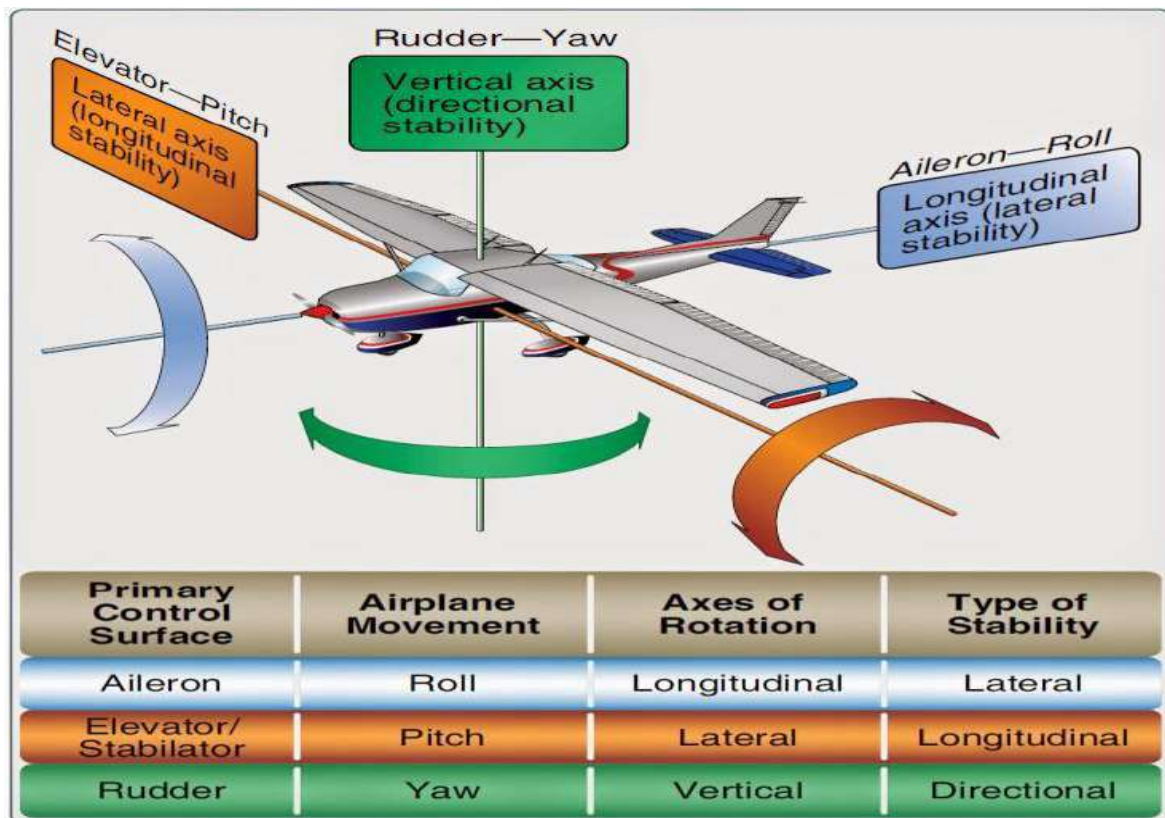
Fig-1: Stability Of Fixed Wing Aircraft

The shape of an aircraft wing is called as an airfoil. It is in a way such that it crates less pressure above the wing. The airfoil is the shape of a wing in cross section which when moved through a fluid produces an

REVIEW ON ELECTRICAL AUDIT-AN IMPROVISED LIGHTING SCHEME

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ABSTRACT
An electrical audit is simply an audit or calculation of how much electricity you are using in industry and of where that electricity is going. A brief review of electrical audit is done in this paper and some improvising techniques are also suggested, Procedure of detailed audit is explained. The fundamental goal of every audit is to provide service with least cost least environmental effect and with better quality. This can be achieved by performing the energy audit. Energy audit is nothing but the intermediate between energy management and load side energy demand. As demand of energy increases the energy consumption is at its peak level. The unnecessary use of energy is been reduced by adapting certain improvising techniques designed after carrying the audit. That leads to energy consumption.

Keywords: Electrical audit, Energy conservation, Energy management, Simple payback period, wastage of Energy

INTRODUCTION
Energy Audit is a disciplined independent inspection of an industry or organization. Also energy audit is most important part of an energy management program which indicates the actual status of industrial facility/system with regards to energy utilization efficiencies of different activities, efficiency of different equipments, processes and suggest remedial measures to reduce areas of energy wastage with well-defined economic implications.

The technical survey for the strength audit to reveal the consumption in industry, home area, clinic and power plant has been studied. All attempts are taken to the whole energy input correlating with production for the cited fields. As a result of the find out about the areas the place the electricity is wastefully used and the upgrades are felt, are recognized and corrective measures are encouraged so that the basic field effectively should be improved. Energy auditing is a need to for the electricity sovereignty of our country.

OBJECTIVE
1. Identifying the quality and cost of various energy inputs.

2. Assessing present pattern of energy consumption in different cost centers of operations.

3. Relating energy inputs and production output.

4. Identifying potential areas of thermal and electrical energy economic.

TYPES OF ENERGY AUDIT
• Preliminary Audit

• Detailed Audit

Preliminary audit (Walk-through audit)
In a preliminary energy audit, simply available data are ordinarily used for a normal analysis of electricity and overall tactics of the plant. This type of audit no longer requires a large size of data collection. These audits take a short span of time and the results are more general, providing common possibilities for energy efficiency. The monetary evaluation is normally restrained to calculation of the easy payback period, or the time required for paying again the initial capital funding through realized power savings.

Detailed Audit
A comprehensive audit provides a detailed energy assignment implementation plan for a facility, due to the fact it evaluates all important electricity the usage of systems. This kind of audit presents the most accurate estimate of strength savings and cost. It considers the interactive results of all projects, accounts for the electricity use of all fundamental equipment, and consists of exact power value saving calculations and venture cost. In a comprehensive audit, one of the key factors is the power balance. This is primarily based on an inventory of strength the usage of systems, assumptions of present day working prerequisites and calculations of electricity use this estimated use is then compared to utility invoice charges. Detailed electrical auditing is carried out in 3 phases.

REVIEW ON MODELLING OF QUADCOPTER BASED ON IOT

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ABSTRACT
An unmanned aerial vehicle (UAV) (or unscrewed aerial vehicle, commonly known as a drone) is an aircraft without a human pilot on board and a type of unmanned vehicle. UAVs are a component of an unmanned aircraft system (UAS) which include a UAV, a ground-based controller, and a system of communications between the two. The flight of UAVs may operate with various degrees of autonomy: either under remote control by a human operator or autonomously by onboard computers. There are various type of UAV's which includes quadcopter.A Quadcopter also known as helicopter or quadrotor, is a multirotor helicopter that is lifted and propelled by four rotors. Quadcopters are classified as rotorcraft, as opposed to fixed-wing aircraft, because their lift is generated by a set of rotors (vertically oriented propellers). The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. Quadcopter has a limited range to fly. We studied that, if Internet of things is introduced to quadcopter, many of problems would be solved. That includes increasing the range to a greater extent. Also if thermal camera is introduced to quadcopter. Night vision and many more problems would be eliminated.

Keywords: UAV, UAS, IOT, UID.

INTRODUCTION
The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The definition of the Internet of things has evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems Traditional fields of embedded systems, wireless sensor networks, control systems, automation (including home and building automation), and others all contribute to enabling the Internet of Things. In the consumer market, IoT technology is most synonymous with products pertaining to the concept of the "smart home", covering devices and appliances (such as lighting fixtures, thermostats, home security systems and cameras, and other home appliances) that support one or more common ecosystems, and can be controlled via devices associated with that ecosystem, such as smart phones and smart speakers.

QUADCOPTER
A quadcopter, also called a quadrotor helicopter or quadrotor is a multirotor helicopter that is lifted and propelled by four rotors. Quadcopters are classified as rotorcraft, as opposed to fixed-wing aircraft, because their lift is generated by a set of rotors (vertically oriented propellers). Quadcopters generally use two pairs of identical fixed pitched propellers; two clockwise (CW) and two counterclockwise (CCW). These use independent variation of the speed of each rotor to achieve control. By changing the speed of each rotor it is possible to specifically generate a desired total thrust. At a small size, quadcopters are cheaper and more durable than conventional helicopters due to their mechanical simplicity Their smaller blades are also advantageous because they possess less kinetic energy, reducing their ability to cause damage.

INTERNET OF THINGS
The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The definition of the Internet of things has evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems Traditional fields of embedded systems, wireless sensor networks, control systems, automation (including home and building automation), and others all contribute to enabling the Internet of Things. In the consumer market, IoT technology is most synonymous with products pertaining to the concept of the "smart home", covering devices and appliances (such as lighting fixtures, thermostats, home security systems and cameras, and other home appliances) that support one or more common ecosystems, and can be controlled via devices associated with that ecosystem, such as smart phones and smart speakers.

A. Abbreviations and Acronyms
IOT   Internet of Things

REVIEW ON STRONG HYBRID ELECTRICAL VEHICLE

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ABSTRACT
In our project we are focusing on Hybrid Vehicle which is eco friendly and it is very upgrowing thing nowadays. A hybrid electric vehicle is a hybrid vehicle which combines a conventional propulsion system with a rechargeable energy storage system to achieve better fuel economy than a conventional vehicle.Modern mass-produced HEVs prolong the charge on their batteries by capturing kinetic energy via regenerative braking, and some HEVs can use the internal combustion engine to generate electricity by spinning an electrical generator to either recharge the battery or directly feed power to an electric motor that drives the vehicle.Hybrid electric vehicles are now recognized as one of the most promising avenues to materially reduce automobile contributions to petroleum dependency, air pollution, and carbon dioxide emissions. Several issues remain, however, that could become barriers to the acceptance of hevs, thus creating uncertainty about their ultimate prospects.The present study evaluates the properties of the hybrid vehicle, its structure and performance and proposes an energy control model for its optimum operation.

Keywords: Hybrid Electric Vehicle (HEV), Rechargeable Energy Storage System (RESS), Internal Combustion Engine (ICE).

INTRODUCTION
The National Mission on Electric Mobility was unveiled in 2013 to promote electric mobility in the country. Since then, the Department of Heavy Industries has introduced the Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India (FAME-India) scheme, which has moved to Forward direction day by day. Through the mission, the government hopes to have a cumulative fuel saving of 9,500 million litres by extending support to the hybrid/electric vehicles market development [1]. As modern culture and technology continue to develop, the growing presence of global warming and irreversible climate change draws increasing amounts of concern from the world's population. Earth climate is beginning to transform, proven by the frequent severe storms, the drastic shrinking of polar ice caps and mountain glaciers, the increased amount of flooding in coastal areas, and longer droughts in arid sections of the world.

Everything from cars and industries to livestock and crops are being studied and regulated with plans of minimizing pollution levels. Amongst the most notable producers of these pollutants are automobiles, which are almost exclusively powered by internal combustion engines and spew out unhealthy emissions. Internal combustion engines account for a lot of the pollution problems, but the issue still stands as to what system will drive the next wave of automotive vehicles. One potential alternative to the world's dependence on standard combustion engine vehicles are hybrid cars. The introduction of hybrid technology in the past decade was the first step towards turning the world's population into a more fuel efficient and emissions conscious society. There are different claims, however, as to how helpful hybrids actually are in the race to save the environment, with projections ranging from significantly to marginally. The result of analyzing the full life of a car, both from technical and consumer standpoints lead us to many questions about the significance of hybrid technology.

OBJECTIVES OF STUDY
1. Recreating Braking:- The electric motor applies resistance to the drivetrain causing the wheels to slow down. In return, the energy from the wheels turns the motor, which functions as a generator, converting energy normally wasted during coasting and braking into electricity, which is stored in a battery until needed by the electric motor.

2. Drive-Assist:- The electric motor provides additional power to assist the engine in accelerating, passing, or hill climbing. This allows a smaller, more efficient engine to be used. In some vehicles, the motor alone provides power for low-speed driving conditions where internal combustion engines are least efficient.

3. Automatic Start-Shutoff:-Automatically shuts off the engine when the vehicle comes to a stop and restarts it when the accelerator is pressed. This prevents wasted energy from idling.

Hybrid Vehicles And Fuel Vehicles
With electric motor to power their propulsion system. Modern mass-produced Hybrid-electric vehicles prolong the charge on their batteries by capturing kinetic energy via regenerative braking, and some Hybrid-electric

SCHEDULE MANAGEMENT SYSTEM

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ABSTRACT

This Schedule Management System will display the attendance of each lecture, so that it is possible to know how many students were present in a particular lecture. The name of the students in each class and there total attendance throughout the academic time span will be calculated. These attendance calculations will be forwarded to their parents. The prime reason of forwarding attendance to parents is to make them aware about their wards activities and to increase their involvement and interactions with college. After each lecture, the particular professor who conducted that lecture has to provide his/her digital signature. This digital signature will declare that lecture was conducted by that particular faculty and the attendance calculated is correct. But the most Amazing feature of our project is that it will maintain the list of faculties who are free at respective time slot. If a faculty is unavailable for the lecture, a request message will be sent to all the faculties in the list containing the names of faculties free (not conducting lectures or other duties) during that time period (mentioned above). The faculty who can conduct proxy for that lecture will respond to the request message . Thus, if a professor is not available lecture will not be wasted and proxy will be arranged without confusion .

Keywords: Proxy, Attendance, availability schedule.

INTRODUCTION

A Schedule Management System is an Android based application. This system is usually designed to display schedule of that particular organization. In schools, Colleges and institutes a Schedule Management System is used to display the sequence of lectures and break, timings. In case of Schools and Colleges it will display schedule of each class of each standard. While considering universities, it will display schedule of each class of different departments. In addition to this, our project will display the attendance of each lecture , so that it is possible to know how many students were present in a particular lecture. The name of the students in each class and there total attendance throughout the academic time span will be calculated. This attendance calculations will be forwarded to their parents. The prime reason of forwarding attendance to parents is to make them aware about their wards activities and to increase their involvement and interactions with college. After each lecture, the particular professor who conducted that lecture has to provide his/her digital signature. This digital signature will declare that lecture was conducted by that particular faculty and the attendance calculated is correct. But the most Amazing feature of our project is that it will maintain the list of faculties who are free at respective time slot. If a faculty is unavailable for the lecture, a request message will be sent to all the faculties in the list containing the names of faculties free (not conducting lectures or other duties) during that time period (mentioned above). The faculty who can conduct proxy for that lecture will respond to the request message . Thus, if a professor is not available lecture will not be wasted and proxy will be arranged without confusion . In a nutshell, this Schedule Management System will display schedule (Daily time table) , Calculate and Display attendance of each lecture , Forward the attendance to parents, Maintain schedule of professors and arrange proxy of unavailable faculty .Schedule Management System is a system which will display schedule for each class. In addition to this, it also replaces traditional attendance system. The most amazing feature of this application is that it stores schedule of each professor.

OBJECTIVES OF STUDY
1. To understand the concept of Android Application development

2. Availability

In case when professor is not available for lecture another professor whoever will be free at that time can be sent a substitution request. The most Amazing feature of our project is that it will maintain the list of faculties who are free at respective time slot. If a faculty is unavailable for the lecture, a request message will be sent to all the faculties in the list containing the names of faculties free (not conducting lectures or other duties) during that time period (mentioned above). The faculty who can conduct proxy for that lecture will respond to the request message .

3. Automicity

A request message has to be delivered to free faculty that "Can you be substituted in place of XYZ because (Reason)"

SIMULATION OF REVERSE POWER RELAY FOR GENERATOR PROTECTION

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ABSTRACT
Sign is one of the most significant identity of a human which can be used for authenticating identity. A signature by an legal person is measured to be the "seal of agreement" and remains the most preferred means of authentication. The local features based approaches are more popular in dynamic verification than in the offline one. This reality encourages us to consider recovering writing trajectories from offline signature and many modern technologies are available to develop such algorithm with help of which one can able to diagnose and validate the human signature. Among which Artificial Neural Network is the one. Our Project deal with off-line signature recognition & verification using neural network in which the human signature is captured and presented in the image format to the system. Various image processing techniques, features extraction, neural network training of extracted features and after performing all of these task we are going to do verification and testing of the signature. After performing all of these task we will be able to identify whether the signature is genuine or forged.

Keywords: Image Processing, Artificial Neural Network, Feature Extraction, Signature Verification

INTRODUCTION
A Sign is person's name carved in a unique way as a form of identification.Signature can be used in various field such as in authorizing a check, Signature validates document, conducting a letter, Signature authorize transaction. Signatures are analytically importance in society. Signature verification is a technique used by banks, intelligence agencies and high-profile institutions to validate the identity of an individual. An image of a signature or a direct signature is fed into the signature verification software and compared to the signature image on file. Signatures are composed of special characters and therefore most of the time they can be unreadable. Also intrapersonal variations and interpersonal differences make it necessary to analyze them as complete images and not as letters and words put together. As signature is the primary mechanism both for authentication and authorization in legal transactions, the need for research in efficient auto-mated solutions for signature recognition and verification has increased in recent years.

1.1 Types of Signature Verification
A signature verification technique which is used to solve this problem can be divided into two classes

1. Online Signature verification

2. Offline Signature verification

1. Online Signature Verification
Online approach uses an electronic pressure sensitive tablets to extract information about a signature and takes dynamic information like heaviness, rapidity, speediness of writing, number of order of the hits and the pen density at each point etc. for verification purpose that make the signature more unique and more difficult to recreate. Application areas of Online Signature Verification include protection of PDA, laptop, authorization of computer users for accessing sensitive data or programs and authentication of individuals for access to physical devices or buildings.

2. Offline Signature Verification
Off-line signature verification involves fewer electronic control and uses signature images captured by scanner or camera. An off-line signature verification system uses features extracted from scanned signature image. The features used for offline signature verification are direct & are invariant. For this only the pixel image needs to be estimated

RELATED WORK
Artificial neural network based signature recognition and verification using neural network, in which the human signature is captured and presented in the image format to the system. The error back propagation training algorithm was used which exhibited 100% success rate by identifying correctly all the signatures that it was trained for [1]. Initially system use database of signatures obtained from those individuals whose signatures have to be authenticated by the system. Then artificial neural network (ANN) is used to verify and classify the

SIMULATION OF DIRECT TORQUE CONTROL OF INDUCTION MOTOR BASED ON SPACE VECTOR MODULATION

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ABSTRACT
Induction motor (IM) speed control is comparatively difficult, since the torque produced and flux are inter-dependent. Through the conventional PI regulation, torque error can lead to undesirable change in angle between rotor and stator flux vectors. In this paper, space vector modulation (SVM) based direct torque control (DTC) is applied on induction motor. DTC is a closed-loop speed control technique to control a motor with the help of flux and torque vectors. It constitutes of hysteresis-band flux and torque controllers. The undulations in current and torque occur in the traditional DTC technique. Reason for unwanted torque and current undulation is less voltage vectors applied to the machine, which means less accuracy. Ripples are reduced using the SVM-DTC technique. SVM techniques have a number of superiority features that offer finer DC bus utilization, minimum torque undulations, lesser total harmonic distortions (THD) in the AC motor current, minimal switching losses, and simpler to adapt in the digital systems. Simulations for the SVM based DTC are performed in MATLAB/Simulink and the results are studied thoroughly.

Keywords: Motor, SVM, DTC, Torque error, Flux error

INTRODUCTION
Motors are one of the electric machines most widely used in industrial, commercial and domestic applications as they are simple, rugged, low cost and easy to maintain. The drive control system is necessary for IMs, since they demand good performance control: accurate and quick flux and torque response, higher torques at low speed, wide range of speed.

Direct torque control (DTC) method came in spotlight because instead of controlling the torque indirectly through flux or current, it directly controlled the torque. To obtain precision, DTC uses the difference between reference values and calculated values of flux and torque to control the machine. Although a well-accepted method, but DTC has some disadvantages like – at low speeds, control becomes difficult; high undulations in torque and current; more noise and variable switching frequency issues.

Space Vector Pulse Width Modulation (SV-PWM) is a technique introduced to improvise DTC in order to overcome the drawbacks of conventional DTC.

The usual three phase PWM generation technique involves a high frequency carrier wave intersecting with three sinusoidal waves as reference. The major drawback of this intersection method is that it includes automatic redundant computational efforts, since the intersection points of each of the three phases is computed independently [5].

On the other hand, the SVM strategy generates the waveforms simultaneously for all the three phases in a two-dimensional frame of reference, excluding the chances of considering each waveform intersection as an independent variable.

In this paper, MATLAB simulation of SVM based DTC of IM is performed and results are analysed. An attempt is made to minimise the general limitations of conventional control schemes and conventional DTC as well.

OBJECTIVES
1. To control the torque of induction motor using space vector modulation.
2. Space vector modulation (SVM) based direct torque control is applied on induction motor

OVERVIEW- Direct Torque Control (DTC)
Direct Torque Control (DTC) makes use of an induction motor model to acquire preferred output torque. By using solely cutting-edge and voltage measurements, it is viable to estimate the immediate stator flux and output torque. The simple configuration of DTC scheme is as shown in Fig. 1. It consists of a two torque and flux controller alternatively of PI controllers in DTC scheme and flux and torque estimator.

In DTC, it is possible to immediately manage stator flux linkage and electromagnetic torque by means of resolution of finest inverter switching modes. The selection is such that flux and torque blunders are restrained within respective flux and torque hysteresis bands to obtain fast torque response.

SMART SURVEILLANCE SYSTEM USING MACHINE LEARNING

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ABSTRACT

This work suggests an intelligent surveillance system for anomalous human activity in a hypothetical environment. The wide range of advanced surveillance techniques was proposed by surveillance system: object detection in Real-time, tracking object from web camera, acknowledgment of generic object class and abnormal behavior of human, and situation of happening an alarm. The surveillance system was conducted in three phases: Preprocessing phase, abnormal activity detection phase, and content-based image retrieval phase. An anomalous activity can be any action that can provided at secured area, moving with speed more than a limit in a secure place, any typical pose that is not normal (i.e., falling and jumping) and many other actions which can trigger an alarm. Alarm triggering varies from customer to customer. It may include actually ringing any alarm, sending a notification to any department through e-mail or SMS, making an entry in the database, etc., it assist human operators to make the right decisions

Keywords: Human motion object detection, Real time security system detection, background subtraction, intelligent surveillance system.

INTRODUCTION

The last decade of progress on various visual acknowledgment tasks has been based considerably on the use of SIFT [9] and HOG [7]. But if we look at performance on the conforming a well-established pattern visual recognition task, PASCAL VOC object detection [15], it is generally acknowledged that progress has been slow during 2010-2012, successful method was proposed with small gains obtained by building ensemble systems and employing minor variants. Image classification, the domain of computer area is used widely for researched area and domain of computer vision has achieved remarkable results in world-wide competitions such as ILSVRC, PASCAL VOC, and Microsoft COCO with the help of deep learning[2]. The results of image classification was to motivate object detection have been developed by deep learning models and deep learning based object detection has also achieved state-of-the-results[3]. The intelligent resident surveillance is the most important smart community services [7].This application enables a broad spectrum, including areas of interest in access control , human identity or behavior recognition, detection of anomalous behaviors, interactive surveillance using multiple cameras and crowd flux statistics and jamming analysis and so -on [20] for complete image understanding, classifying different images not only concentrated on it, but also try to specifically approximation of the concepts and locations of objects contained in each image. This object detection task is referred [1], which usually consists of different sub tasks such as face detection [2], perambulator detection [3] and skeleton detection [4]. As one of the fundamental computer vision problems, The valuable information of object detection is able to provide for semantic understanding of images and videos, and is related to many applications, including image classification [5], [6], human behavior analysis [7], face recognition [8] and autonomous driving [9], [10]. Meanwhile, related learning systems and neural networks by inheriting, the progress in these fields will develop neural network algorithms, and object has a great impact.

Learning systems is considered as detection techniques. [11]–[14]. However, due to large variations in viewpoints, poses, occlusions and lighting conditions, for accomplish object detection is difficult with an additional object localization task . So much attention attracted of attentions to this field in recent years. detection of object in advance are driven by the success of region proposal method and region-based convolutional neural networks (R-CNNs) [6]. Although region-based CNNs were developed originally as ccomputationally expensive [6], drastically reduced there cost have been thanks to sharing across proposals across convolutions [7, 5]. The advance in carnation, Fast R-CNN [5], achieves very deep networks was used by real time when the time spent has been ignored on region proposals In state-of-the-art of detection systems proposals are available as computational bottleneck

SMART WATER DISTRIBUTION SYSTEM

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ABSTRACT

This Paper present an IOT model system which perform water distribution and controlling of water in an society. This IOT model is installed in Buildings, Society, and Hospital etc. which distribute the water in each Flats/Tanks Equally. As per the predefined water quantity to the system, the device will distribute water to each water tank. Amount of water present in the tank is being notify to the user through cloud system and using Mobile Application user can ON/OFF the water motor, can check the water level in tank. This IOT model can be monitor using real time monitoring system.

Keywords: IOT devices, Sensors, Cloud.

I . INTRODUCTION

Water is an extremely sacred resource for the existence of mankind. Water Management and proper Distribution is important since it helps determine future availability of water. Water Distribution is the Distribution of water resources under set policies and regulations. Water, once an abundant natural resource, is becoming a more valuable commodity due to droughts and overuse. To overcome this problem we have designed the IOT based water Distribution system which subjects such as the optimization of water usage.

II. RELATED WORKS

In this prototype model we have the design of IOT base water Distribution system that monitors quantity of water. This system consist of sensors like water flow sensor, water meter sensor and automatic ON/OFF motor which measure the water level of water in the tank. Each tank has water meter connected which distribute amount of water predefined to the system. All the records can be monitored using real time monitoring system from any location.

III. HARDWARE IMPLEMENTATION

SOLAR POWERED DRIP IRRIGATION SYSTEM USING MOISTURE SENSOR AND WIRELESS NETWORK TECHNOLOGY

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ABSTRACT

Agriculture is the primary occupation in India. In rural areas people living there are mainly farmers whose life depends on farming hence major source of income is agriculture. Agriculture in India is not that easy city of unavailability of adequate water and electricity. To overcome this farmer can use an alternative source of energy by using solar power drip irrigation system and some advance sensing equipment with it like (Soil moisture sensor, temperature sensor, etc.) this will helps the farmer to manage proper amount of water as per their need and increases the productivity of crops.

Keywords: Automated drip irrigation, Solar panel, Soil moisture sensor, Micro controller, Wireless network, Energy saving.

INTRODUCTION

Agricultural irrigation is very necessary for crop production around the world. Whereas in India, the economy is dependent upon it and contribute nearly upon 17% to 18% of its GDP base on agriculture, and also the atmospheric condition. The more reason is the lack of rain and unavailability of land reservoir water. Therefore, economical water management is necessary for irrigated agricultural cropping systems. The demand for modern water-saving techniques in irrigation is increasing rapidly day by day. Within the traditional drip irrigation systems, the foremost important advantage is that water is equipped close to the root of the plants drip by drip which saves the water. These days, the farmers are mistreatment irrigation approach in India through the manual control the farmers irrigate the land on the ordinary intervals. This method typically consumes extra water or generally the water reaches past due to which plants get dried. to conquer this trouble farmer can used solar-powered automatic drip irrigation technology which helps them to manage the proper flow of water for crops and it also gives an additional backup power supply by using the solar panel due to which when there is a lack of electricity it can use to store the solar energy into the battery cell and when needed it can use to drive the pump motor. Mostly this system can be used where there is a shortage of electricity and water.

OBJECTIVES OF STUDY

1. To minimize the amount of water wastage in irrigated areas.

2. To developed an irrigation system in field of agriculture by using solar energy.

3. To provide user friendly control using GSM technology.

METHODOLOGY

To investigate the achievements of practical testing of a solar-powered drip irrigation system using moisture sensor and wireless network technology and dependent on the plan, the approach engaged with testing automatic irrigation of the field.

Selection of land (5mx 2m) =10m2

The ratio of land area =1:1

Amount of water require of farming

Considering the average amount of water require (rainfall) =250l/m2

The total amount of water requires cultivation =250×10=2500 liter.

To supply 2500 liter water to the field submersible pump is chosen with the capacity of delivering 500lph with a power consumption of 50w. The power required for this pump will be (6hrx50w) =300Wh. According to its power demand, solar panel and battery capacity are choose. Solar panel and battery capacity should be 25% to 40% higher than pump rated capacity i.e. solar panel 2nos of each having generating power capacity up to 75watts and battery 4nos of each having rated power capacity of (12Vx1.5A=18W) which are all connected in series-parallel.

SOLAR POWER GENERATION

We have used an automatic irrigation system using solar-powered which driven the pump motor to feed the water to the crop from the reservoir and it is an automatic control system using micro controller with soil

SPEED CONTROL OF SINGLE PHASE INDUCTION MOTOR USING VARIABLE FREQUENCY DRIVE

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ABSTRACT
In this project the frequency is used for controlling the speed of Induction machine. The aim of this project is that by using the variable frequency drive, we will control the frequency which is faded to the Induction motor. The multispeed activity is given by controlling the rotation of these engines. This paper exhibits the plan and investigation of single phase induction machine using MOSFET at the converter power stage with frequency control as a controller. The inverter is one of the basic requirements for induction motor speed control by variable frequency method, the inverter traditional control methods is modulated using microcontroller which control the whole operation of the proposed scheme. The good control of frequency and smooth speed control has been conducted from the scheme. The cost of modulated scheme is less.

Keywords: PWM, MOSFET, Opto-isolator, Rectifier, Inverter, Micro-controller, Speed- control, Induction motor.

INTRODUCTION
Induction motor is widely used in the domestic and industrial application about 85% of motors used is of Induction Motor. The greater part of the drives utilized in the industrial motor control are electrical. Contingent upon the application, some of them have fixed speed and some have variable speed. In past the Induction motor are used in limited purpose but due to advancement in electronic the scene completely changed today. Nowadays variable speed drive which are not only constructed smaller in size but also obtained very efficient. The induction motor can run as it were at its evaluated speed when it is associated to the most supply be that as it may they are consistent motor.The induction motor can run only at its rated speed when it is connected to the main supply. However, they are constant motor. To control the speed of these motor, a motor drive and control system with distinctive strategies can be utilized. The multiple number of Induction motor can connect to the variable frequency drive and all the induction motor can controlled simultaneously by connecting these motors to the drive.

An induction motor's speed empowers influenced by the supply frequency, alter the number of motor stators, alter the control input. The drive can vary the frequency to be higher than the normal line frequency, meaning the speed can be increased beyond what the motor. The circuit required for this method is simple to implement and cost effective.

OBJECTIVES OF STUDY
1. The desired speed of the Induction motor can be achieved using VFD's.

2. The conventional speed control method is costlier than VFD method. Hence, drives play an imperative part in different applications.

OVERVIEW
Variable frequency control could be a strategy which is utilized to control the rotation of an induction machine. The desired speed and so, the rotational speed of the motor can be varied by changing the supply frequency. The equation of synchronous speed is:

$N_s = 120f / p$

The EMF induced in the stator of the induction motor is given by the equation shown below:

$E_1 = 4.44k_{w1}f\varphi T_1$

Therefore, when change in the supply frequency occurs, then induced EMF will moreover alter to maintain the same air gap flux. The evaluated voltage v1 is rise to to the induced emf e1 in case the stator voltage drop is ignored. Thus, the speed control of an induction motor using variable frequency supply requires a variable voltage power source. The converter changes over a rated voltage dc to a rated or variable voltage ac with variable frequency. PWM converter converts a settled voltage and settled frequency AC to a variable AC frequency.

HOME AUTOMATION AND SECURITY USING INTERNET OF THINGS

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ABSTRACT
In this world of digitization and automation, people wants everything fully automize and easy. today's generation is getting advance by replacing old manual system with the automated system. The internet has been connecting people and making life easier by providing all kinds of information with the click of a button. Internet of things (IOT) provides a platform that allows many devices to connect, sensed and controlled remotely across a network infrastructure. In this paper with home automation we also focus on home security using smart phone and computer. The iot devices controls and monitors the electronic electrical and the mechanical systems. This devices are connected to the cloud server that are controlled by a single admin. admin facilitate a number of users to which a number of sensor and control nodes are connected. This feature gives user the ability to be able to control all of the home appliances manually through a click of a button on the Interface of the mobile application or through simple voice commands from anywhere from the world using internet connection. The admin can access and control all the nodes connected to each user but a single user can control only the nodes to which the user itself is connected. The system designed is economical and can be expandable

INTRODUCTION
Since 2013 with the development of new technologies, the Internet of Things (IOT) has also emerged to make smart devices smarter.The Internet of Things is connecting objects to the Internet to enable communication between things and people, and between things themselves.This devices can be any physical objects like smart-phones, Internet TVs, sensors. This device has the feature of communicating with the appliances, which allows the user to send signals to the appliances through a secure application. For the objects to collect and exchange data electronics, software, sensors and network connectivity are embedded into them. This technology has endless possibilities and infinite applications. Any device can be made smart by using iot technology. It can be used to provide better personal safety, monitor health, save time and make better use of our natural resources. IOT has made a huge impact in the way people live, work and communicate.

This new technologies and smart devices had made peoples' lives very comfortable and convenient. With the increasing demand for a highly automize standard of living, Smart home, which is one of the most popular applications of IoT is grabbing the spotlight on a global level. Though the concept of home automation was conceived a long time ago, the technical complexity, high cost and incompatibility with existing devices prevented it from becoming a reality in every house. But now with the rapid development of internet of things, wireless technology and ubiquity of smart phones and connected devices, home automation in every home is now a very real possibility [2].A smart home is a network of various sensors and controllers integrated together to provide the user with remote control of various devices within their home. The sensors sense various changes, monitor them, store the data and display them in order for analysis and control. This helps us customize our home to fit every family's way of life. This is a cost effective system made from locally available components like raspberry pi, light sensors and ultrasonic sensors which allows us to control the lighting system of our house.

This paper describes a smart home where lighting system of the house is monitored and controlled remotely by establishing a remote server and by using an application based on node.js

COMPONENTS
Hardware Components

Fig-1: Arduino

VULNERABILITY ASSESSMENT & PENETRATION TESTING USING RASPBERRY-PI REMOTELY

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ABSTRACT

This project report expresses the type of hardware, software and the results obtained along with methodology adopted to carry out penetration testing of targets. This project was successful in quantitative and qualitative measurements of the penetration testing activities using a Raspberry Pi device and it' uses.

This report therefore specifies in detail the setup of the device and full process flow to exploit the targets. It also provides brief description of the tools used. This project highlights a very new emerging technique of Penetration testing possible using high quality tools and reliant hardware which can be easily masked and used remotely to affect the target. This project report vividly documents some of the possibilities emerging from this new tool and hence can be used to generate awareness and safeguard measures to mitigate against such tools if used unethically.

Keywords: VAPT, Raspberry Pi InfoSec, Reverse SSH Tunnel, Red Team Assessment

I. INTRODUCTION

In order to conduct an Internal Network Penetration Testing, organization needs to provide and setup a physical system for security engineer within the organization in which engineer can install tools needed for performing Reconnaissance, further vulnerability assessments and do an exploiting weakness manually. Instead of that we can use raspberry pi for internal network pen testing and for wireless analysis. Raspberry Pi is the best way to gather information from remote sites in large distributed organizations.

Many administrations have security measures in place to block incoming connections with the goal of stopping backdoors into their network. In a white-box assessment, you may be explicitly able to open up a firewall to permit SSH to your Raspberry Pi. In most cases it is not possible from a company's policy standpoint; it may be difficult to achieve when dealing with multiple sites under multiple administrative controls. Reverse SSH is a good alternative to manage a Raspberry Pi running Kali Linux.

We can use a reverse SSH tunnel to access a Raspberry Pi running Kali Linux behind a restrictive firewall or NAT gateway from outside world. While in this paper it is demonstrated its use case for accessing it from any network via a cloud VPS using Automated Reverse SSH Tunnel Relay.

II. VULNERABILITY ASSESSMENTS

Vulnerability assessment refers to the process of recognizing risks and weaknesses in computer networks, systems, hardware, applications, and other parts of the IT environment. It also provides security teams and other participants with the information they need to analyze and prioritize risks for potential remediation in the proper setting.

Vulnerability assessments are a critical section of the vulnerability management and IT risk management lifespans, helping protect systems and data from unauthorized access and data breaches. It typically leverages tools like vulnerability scanners to identify threats and flaws within an organization's IT infrastructure that characterizes potential vulnerabilities or risk disclosures.

Vulnerability Assessment and Penetration Testing (VAPT) are the security services that emphasize on recognizing vulnerabilities in the network, server, web application and system infrastructure.

Why Vulnerability Assessments Are Important

Vulnerability assessments allow security teams to apply a consistent, comprehensive, and clear approach to identifying and resolving security threats and risks. This has several benefits to an organization:

Vulnerability assessments should always provide clear, actionable information on all identified threats, and the corrective actions that will be needed.

III. PENETRATION TESTING

Penetration tests are a great way to classify vulnerabilities that exists in a system or network that has an existing security measures in place. A penetration test typically involves the use of attacking methods led by trusted individuals that are similarly used by hostile intruders or hackers

VEHICLE CHARGING SYSTEM USING RFID

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ABSTRACT
Regarding the event of the electrical vehicle replacement charging stations, comes with the appliance resolution of RFID technology within the electrical vehicle battery replacement charging stations.First analyses the precise characteristics of the RFID technology, provides an summary on the RFID technology resolution to resolve the management downside of the battery compartment, introduces the RFIDTechnology application on the management of charging vehicles, similarly as on the unified management of battery compartment in battery replacement charging stations.The RFID technology application in alternative fields of the electrical vehicle replacement charging stations. Currently, the government has introduced a series of development plan about the new energy vehicles. The electric vehicles as a new means of transportation, has the incomparable advantages in easing the energy crisis and promoting the harmonious development between the environment and human beings, and can effectively push forward the change of transportation pattern. As an integral part of the smart grid, the charging facilities are very important for developing the electric vehicles. As a very important technology in the Internet of Things, RFID has grown up in the 1990s, and is an advanced, non-contact and automatic identification technology at present.

INTRODUCTION
The Internet of Things, also called things-linked internet, it refers to a kind of network that adopts RFID (radio frequency identification), infrared sensor, and other sensing devices, to enable the linkage between any articles and the internet, to enable the exchange and communication of information,(1) This project aims to discuss the application of RFID technology in the battery charging stations, and analyse the technical advantages of RFID technology in the electric vehicle identification as well as the unified management of the battery charging compartment(2).These advantages enable RFID technology to provide better service forth electric vehicle industry, and support the effective management of the battery charging compartment (3). At present many regions have started forming charging station for electric vehicles but still have not completed a sophisticated layout planning system (4).As the number of EVs on the roads increases, charging stations in both parking structures and private garages will become more prevalent.

These stations are going to be liable for meeting the necessities of the distribution grid, EV owners, and parking structure operators. For security and monetary reasons, among the many functions these charging stations will perform are user authorization, authentication, and billing. Basic, underworked, charging stations such as Leviton and Clipper Creek require a point of sale (POS) device to authorize and enable charging. Other commercial charging stations, such as Coulomb and Blink require a short range RFID card for the same purpose. In both cases, extra steps on the part of the user must be taken to authorize charging(5).The authors in propose victimization standard RFID tags within EVs associated RFID readers on parking garage access gates alongside middleware and an mixture charging controller to authorize, assign, and enable charging. However, this system still requires action from the user and is not as flexible as may be desired. The UCLA Smart-Grid Energy centre (SMERC) has developed a software-based heat unit watching, control, and management system that employs multiplexed charging stations capable of providing varying power to severalEVs from one circuit, called WINSmartEVTM (6).This system centres around a server-based aggregative charging controller and utilizes user info alongside a smart-phone interface for charging authorization. In order to simplify the charging authorization process and make it more convenient for users, an authentication system based on an RFID mesh network is proposed as an additional capability for the existing WINSmartEVTM framework (7).The planned enhancements enable charging authorization to require place seamlessly at multiple charging stations in a very single geographic location with none action on the a part of the user. Vehicle Monitoring/Identification Modules (VMMs), placed in EVs, act as RFID tags for vehicle identification and charging authorization. Unlike the layered architecture for managing a variety of automatic identification hardware proposed in (8), the VMMs communicate directly with a network coordinator and charging control server through a ZigBee mesh network, thus simplifying the architecture. The paper is structured in the following way: first, the existing WINSmartEVTM architecture.

SMART TRAFFIC CONTROL AND MANAGEMENT SYSTEM

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ABSTRACT
The increase of population produces an increase of the number of automobiles on the road, which generates heavy traffic in the streets and that causes many problems for the Citizens and traffic policemen an additional two emergency cases therefore it's important with development technology of embedded systems to solve this problem. In this paper new traffic light controller was built to optimization using the Adriano UNO microcontroller board. The system tries to reduce traffic jams, caused by traffic lights, as possible. The system is based on microcontroller, which represent the brain of the system. The system contains ultrasonic sensors on the side of the roads. Also the system contains switches to control the traffic light manually. The ultrasonic sensor system gets activated when vehicles go along the road against it. Microcontroller controls the traffic light by driver circuit using the sensor network to determine the level of jam in the road. Different ranges of traffic light delay time intervals according to jam level are configured by microcontroller and updated regularly. In this paper the effects of temperature and humidity on the system were studied. The jam level displayer tool is another feature added to a system controlled by the microcontroller which is a traffic sign informs the drivers about the level of jam before reaching the road.

Therefore, managing of traffic flow needs to be a combination of physical infrastructure, new ways of thinking and new technologies. Smarter transport transcends infrastructure. In light of this, smart traffic control systems have gained a lot of interest.

Keywords: Smart cities, intelligent traffic systems, artificial intelligent system, WSN, FES, ANN, traffic lights, road traffic

1. INTRODUCTION
Our intelligent Traffic Expert Solution for road traffic control System offers the ability to acquire real-time traffic information, .Traffic Expert enables operators to perform real-time data analysis on the information gathered. Traffic management measures are aimed at improving the safety and flow of traffic utilizing traffic capacity more effectively. A technology for smart traffic signals has been developed and is being used in a pilot project in Pittsburgh in an effort to reduce vehicle emissions in the city. Unlike other dynamic control signals that adjust the timing and phasing of lights according to limits that are set in controller programming, this system combines existing technology with artificial intelligence.

The signals communicate with each other and adapt to changing traffic conditions to reduce the amount of time that cars spend idling. Using fiber optic video receivers similar to those already employed in dynamic control systems, the new technology monitors vehicle numbers and makes changes in real time to avoid congestion wherever possible. Swarm intelligence is the decentralized, self organized system. It may be Natural or Artificial. Swarm intelligence is used in Telecommunication network. France and British Telecommunication use this technology for the Phone network. The term Swam to represent an aggregation of the animals or insects which works collectively to accomplish their day to day tasks in an intelligent and efficient manner [1].This is helpful technology for applications in communication network routing. The swarm intelligent routing methods are providing the high reliability and less time consuming communication for the more number of system available in the network. The Swarm intelligent technology is basically based on some biological Algorithms: Ant Colony Swarm Algorithm, Honey Bees Swarm and schooling of fishes.Honey Bee Swarm Algorithm A honey bee colony reacts flexibly and adaptively to countless changes in the forage pattern outside the hive and to change inside the hive through a decentralized and communication, control system. This is multi-agent system for the preparation of food foraging is having the same purpose which is used by ants. A honey bee works with two mainly agents scouts and foragers. The scout bees searching for the food from the flower patch, when it finds the food source whose quality is better than that of predefined food source it move to dance floor and perform dance called Waggle dance, this dance is help for communication or transferring information about source to the other bees. After getting this information the Foragers bees are sent to the food source for collection of food. This algorithm uses the ad hoc networking model [3]. Adaptive System An adaptive system is used for operating in real time. The fluctuations in the traffic volumes are adjusted easily through the adaptive system. In this the system adapts itself according to the change in the traffic and the environmental conditions, and then the action will take according to it. This shows the real time operating of the method.

VIRTUAL MENTORING SYSTEM

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ABSTRACT

Technological advancement have continued to develop over the past two decades impacting how we engage with each other. This evolvement has also influenced the way our student and their mentor are acquiring and delivering information. In order to sustain the connection with our young people our engagement strategy also need to evolve. This is especially significant for the student who are underrepresented in many academics disciplines, industries. This project will give programmatic structure illustrating way to mentor the student using virtually tools, learning development models and strategies that help produce positive measurable outcomes .

The program was to work to facilitate mentoring relationship both formal and informal. Our proposed system named as Virtual Mentoring System will take the user input in form of voice or text and process it and return the output in various form like action to be performed or search the result is dictated to end user. Our system provides the user to interact with the device for the solution to its query. In addition, this proposed system can change the way of interaction between end user and the device.

Keywords: Mentoring System, Virtual Machine, Voice command, Accuracy, Interaction.

INTRODUCTION

The expression 'pulling yourself up by your boot straps' is misleading and lacks acknowledging the significance of context. It implies, as an analogy, that you have the boots and you know how to tie the shoes. For many first generation college students' persistence within academic programs can be challenging. Research suggests that mentorship can increase college retention and student persistence.

Persistence is also mediated by a variety of psychological variables such as motivation and self-awareness .In addition environmental factors also influence student success, such as, having systemic supports in place and access to resources. This is where mentorship programs can have a significant impact on a young person's career trajectory. The research article explores to provide examples of effective mentorship frameworks that are integrated and comprehensive for student engagement. In considering participating in a mentoring relationship one should remember the importance of being flexible in order to align with the individualism and the various developmental stages of a mentee. The mentoring dynamic involves two or more and exists as a result of a demonstrated need for guidance. As for the mentor it may involve an individual who is both adequate and willing to provide support. Mentorship can be provided in many forms and may be applied informally or formally. The most common approach is the 'one to one' engagement. This traditional approach to mentoring involves an exchange of sharing and listening between two people at a minimum and it may occur over time and evolve. The mentee is often exploring academic advisement, career guidance or life advice from a person who has greater experience. The mentor should be braced to also provide emotional and cognitive support.

SCOPE OF PROJECT

Mentoring is a traditional method of transferring knowledge and skills from an established professional in an organization to an inexperienced member in the field. Education sector has found mentoring as quite effective tool since long back and with the advent of new technologies, comes an idea of online mentoring, which is also referred to as e-mentoring. Rather of face-to-face meetings, Virtual Mentoring System (VMS) practice asynchronous, electronic communications to enact and support the relationship between mentor and the student using virtual mode. Virtual Mentoring uses electronic medium to transfer knowledge and skills from mentor to student. It primarily focuses on student and faculty relationship. Virtual Mentoring System is a Client Server model, which acts as an Interface between Mentor and student. VMS strives to reduce the work load of students in entering their details and at the same time enable the Mentors to assess their students more efficiently. . Virtual Mentoring is fundamentally developed to improve the performance of students by assisting mentors to understand the problems of students more effectively and easily. In order to gain this, a rating system is also included using which mentors can handily evaluate and kind the performance of the students isnd concentrate on those who need there guidance.

YOUTUBE FAKE VIDEO DETECTION

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ABSTRACT

The use of deceptive techniques in user-generated video portals is ubiquitous. Unscrupulous uploaders deliberately mislabel video descriptors aiming at increasing their views and subsequently their ad revenue. This problem, usually referred to as "clickbait," may severely undermine user experience. As views kept on increasing so as money proportionally, so decrease such cases we made a system which assist in identifying the clickbait videos which increases the user experience. We are able to achieve efficient result by using extracting YouTube details using python libraries and YouTube API, by this dataset is created in which computation is done.

After the computation, we performed sentimental analysis on the data through which are able to efficiently identify the video is clickbait or not. We were also able to compare to dissimilar videos through python libraries/API in which it compares the real video with clickbait video through content inside the video comparison its reliable. To increase efficiency, we also tried to divide a video in equal interval of time frames and compared it with the thumbnail of that respective video which will would impact on the desired given result.

I. INTRODUCTION

With the ever-growing data on the internet/Cloud in today's world, YouTube data is contributing to large extent in it. There are a lot of poorly-rated, bad and even fake videos out there that you don't realize until you begin to watch them, wasting your valuable time. Many of YouTube videos nowadays are just created for purpose of profit by giving false information, faulty or inappropriate thumbnail on videos [1][4]. Creating a model that will filter out false YouTube videos which will boost the YouTube search result and protect the user from trusting false & faulty content. Using various machine learning and AI algorithm, we can filter out fake YouTube videos. Using Google YouTube API we can process, analyze, filter YouTube data and use those data for processing out click-bait videos.

Clickbait is a marketing instrument employed by many publishers on social media that entices and manipulates users to click on a certain link by using eye-catching teaser content, exaggerated descriptions, by omitting key information, or even via outright deception— irrespective of whether users are actually interested in the content's topic or not [4]. This usually serves the purpose of maximizing the revenue generated through display advertisement on the content's page.

II . RELATED WORKS

In these prototype model we have trained machine model to compare and match image in the required system .The research has focused on getting factors that gives best possible perceptual decision regarding fake video. The factors are tough not directly used or applied they are computed on various basis and their impact on end results. All the results are monitored and retrain to increase the accuracy of future results.

III .IMPLEMENTATION

• Youtube Fake Video Detection is ML based project for detection of fake videos on one of the largest video sharing platform Youtube. There are a lot of poorly-rated, bad and even fake videos out there that you don't realize until you begin to watch them, wasting your valuable time[6].

• The data or videos for the processing are taken from youtube itself with the help of YouTube API .

• These Google API is Capable of delivering all necessary information regarding a video and video itself.

A STUDY ON BLOCK CHAIN IMPLEMENTATION IN HEALTHCARE SYSTEM

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ABSTRACT
Bitcoin was introduced as an application of block chain by Satoshi Nakamoto in 2008.Blockchain focused on recording the transactions thus maintaining the integrity of transactions without an intermediary. It is a decentralization process .As it can be seen patients are increasing day by day in today's world of modernization. Therefore health records are to be maintained efficiently so that both the doctors and patients will find it easy to access the data. Health care industry can have adverse effect if block chain technique is introduced in the same. The concept is new but growing day by day. This paper presents a systematic review of health care industry in terms of block chain. The process of systematic review process must contain the necessary protocol which is very important component. Before the review starts, the protocol ensures that the what is planned is well documented so that conduct team can promote consistent conduct and also maintain transparency. Four scientific databases, to identify, extract and analyze all relevant publications will be used. The method is based on Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. Different use cases such as identity management, financial and health care records, clinical research data, healthcares supplies are focused. However these protocols lack some implementations and also effectiveness of these proposed use cases. The state-of-the-art in the development of blockchain applications for healthcare, their limitations and the areas for future research are highlighted. To this end, therefore, there is still the necessity for more additional analysis to better understand, characterize the appraise the utility of block chain in health care.

Keywords: blockchain; healthcare; systematic review, bitcoin, decentralization

INTRODUCTION
The disconnected electronic systems and paperwork of health records are a cons in health care industry. Doctors are unable to provide proper care to their patients due to improper interoperability of health records of patients. Also incorrect information results in errors in the health care records. According to British medical association about 50000 women did not receive the information related to cervical cancer due to an error caused in the system. A majority of women did not receive the letters for further tests and majority missed letters which could include warnings of abnormal smear results that may need further investigation. Block chain could solve the problem faced by National Health Service in which there is a shortage of doctors and nurses. Though the NHS computerized all the records but the process delayed. Blockchain could solve the problem of interoperability by allowing doctors to gather information about a patient from multiple independent systems. A blockchain-based system would allow for data to be added and tracked through a ledger, thereby providing a live feed of multiple agencies' relief efforts. It can have the potential to save lives and money. As the underlying technology for Bitcoin, the main utility of blockchain is that it makes possible the exchange of electronic coins among participants in a distributed network without the need for a centralized, trusted third party. Some of the limitations can be overcome if block chain technology is used in healthcare industry. Some of the limitations addressed are transactions that take place between patients and third parties. Some times the trusted third party may malfunction or fail. A very good example is Punjab National Bank hit by another fraud, this time of Rs 3,800 crore. The third parties also charges fees for delay.So this can be overcome if block chain technology is used.

Block chain is a decentralized system in which the role of middleman does not exist. The third party signatories are replaced with a computational proof to validate transactions. The confirmation process is carried out by network of users who stick to rules which are agreed previously and these rules are implemented by software. The method saves the cost of mediation ,as no mediator is involved and the cost associated with reversing the transactions is also saved cause block chain transactions are irreversible. The transaction records are grouped into blocks and then every block is locked to next block takes an arbitrary amount of data input—a credential—and produces a fixed-size output of enciphered text called a hash value. Once recorded the data cannot be altered as data in each and every block has to be changed. Block chain is found now as an general purpose source of application as earlier it was only limited to finance. The system is also flexible enough to allow the addition of arbitrary logic to process, validate, and access the data. This is implemented via components of business logic known as smart contracts, which reside on the blockchain and are synchronized across all nodes. A smart contract is a string of computer code that executes whenever certain conditions are

A STUDY ON CARBON, CAPTURE & STORAGE IN CEMENT INDUSTRY

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ABSTRACT
Concrete is the third most used substance on earth after air, water and cement is the secret to its success. Sustainable cement production today takes place in the modern dry process facilities incorporating the best available technologies. CCS is an essential technology for most the only way to decarbonize the cement industry. The cement value chain is unique in its structure and could lend itself to a lower cost of implementation for CSS than any other sectors. Furthermore, when combined with bioenergy, CCS holds the potential for producing negative emissions, which is the only well developed technology to achieve negative emissions. This exploratory study focuses on an important case study of the complexity of implementing CCS in an industrial context.

INTRODUCTION
The special ingredient or glue which makes all this possible is a rather ordinary-looking grey powder called cement. Globally, cement production accounts for around 5% of man-made CO_2 emissions. The industry recognizes this responsibility and embraces its commitment to reduce this markedly, especially by contributing to the circular economy. In the roadmap, we focused on what can be done to reduce CO_2 in cement production using today's technology, and will speculate on what could be achieved by 2050. However, the cement production process is unique due to the fact that the 60% of the carbon dioxide produced is as a result of chemical reactions when processing the raw material, not just from the combustion of fuel. Out of the total emissions CO_2 emissions generated through the production of cement, 40% comes from the use of energy whilst the remaining 60% is produced as a by-product of the thermal decomposition of limestone. This means that even if energy efficiency and renewable energy measures were technically feasible and cement production was upgraded accordingly, the maximum CO_2 abatement that could be achieved is 40%. The CCS association believes that the challenges of delivering a modern energy system that is environmentally sustainable, affordable for consumers and guarantees secure energy supply requires CCS to be widely deployed alongside other low-carbon technologies such as renewable energy, nuclear energy, and energy efficiency measures.

OBJECTIVES OF STUDY
- Ensure that CCS is recognized and accepted as an essential technology that underpins energy security objectives and cost-competitively reduces CO_2 emissions from power, energy-intensive industry and other energy uses.

- Facilitate a supportive environment for the successful delivery of early commercial-scale CCS projects and maximize the lessons learned from those projects for subsequent projects.

- Focus on the development of a political, regulatory, technical and economic landscape that underpins sustainable CCS business models and supports the deployment of CCS at scale.

TECHNOLOGY
According to the Carbon Capture & Storage Association, CCS is "a technology that can capture up to 90% of the CO_2 emissions generated from the use of fossil fuels in electricity generation and industrial processes, preventing the CO_2 from entering the atmosphere." (The Carbon Capture & Storage Association, 2017).

There are two key concepts involved in CCS: separation of carbon dioxide (CO_2) from other gases, and its storage or confinement. CCS is a way of taking the CO_2 produced from energy-intensive processes, separating it from the rest of the exhaust gases, and transporting and storing it underground so that it cannot enter the atmosphere. CCS has the potential to capture a significant proportion of the CO_2 produced in a cement kiln from both the combustion of fossil fuels and the calcination of limestone.1 there are several basic approaches to the separation of CO_2, but only two of them—post-combustion and oxy-fuel combustion—have been identified as potentially feasible in the cement industry.

Separation: Post-combustion technology means the separation of the CO_2 from the exhaust gas after, or at the end of, the cement kiln; it would apply to existing cement plants without significant modifications to the production process. Oxy-fuel combustion technology means operating the cement kiln with a mixture of pure

A SURVEY ON HACKING METHODOLOGY

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ABSTRACT

Internet security is defined as a process to create procedures and whereabouts to take to protect against attacks over the Internet. Its objective is to establish rules and measures to use against attacks over the Internet. Internet security is getting worse day by day and it has become a foremost area of concern, as many types of hacking methods are experienced increasingly and new hacking techniques are being presented. Therefore cyber security is highlighted the most in many of the administrations. **Hacking is recognizing flaws in computer systems or networks to exploit its weaknesses to gain and achieve access** *also using computers to obligate fraudulent acts such as fraud, privacy incursion, stealing corporate/personal data, etc. In this study main objective is to cover core elements of security, security challenges, frequently occurring hacking techniques and its prevention for the improvement of the cyber security.*

Keywords: Ethical Hacking, Hacking, Hacker, Information Security, methods of hacking, security.

1. INTRODUCTION

Security is a state of wellbeing of data and organisations in which the possibility of successful yet hidden theft, tempering and disruption of information and services are kept to low tolerable. Network security refers to protecting a network and data, computer program, other computer system assets from unwanted intruders, and unauthorized user. [3] Whereas protecting information and information systems from unauthorized access, use, disclosure, interruption, alteration or damage.

Many organisations and associations are being targeted in cyber-attacks, and they must get to know their enemy if they are to safeguard vital networks. Computer hacking means someone alters computer hardware or software such that it can change the original content.[3] If someone hacks an organization, then he can steal sensitive data such as documentation of business and trade secret information for employees and customers. Hackers can also do mutilation of data by erasing or altering the data, or by damaging the real hardware. The impact of hacking can also include legal liability. A **Hacker** is an individual who catches and exploits the weakness in computer systems or networks to gain access. Hackers are usually skilled computer programmers with knowledge of computer security.

2. HACKING

Hacking involves activities that seek to compromise digital devices, such as computers, smartphones, tablets, and even entire networks. Hacking is an attempt to exploit a computer system or a private network inside a computer. Simply put, it is the unauthorised access to or control over computer network security systems for some illegitimate purpose.

Generally hackers gain access to a computer or to a similar device by exploiting a weakness in the computer's software or configuration, or by using stolen usernames and passwords. Once hackers have access, they can mimic legitimate users for accessing data, as well as alter the files and configurations, they can also manipulate other devices connected to the compromised computer. Consequences of hacking can be serious, depending on which machines hackers have accessed and what level of access they have achieved. [8] while hacking might not always be for malicious purposes, nowadays most references to hacking, and hackers, characterize them as unlawful activity by cybercriminals—motivated by financial gain, protest, information gathering , and even just for the "fun" of the challenge. [9]

Further proceeding with the market survey, I tried to find out what type of data is generally stolen. And result was payment card information stealth was at the top. To complete the queue, non-payment card information, intellectual information and sensitive information are after payment card information.

Fig 1: Types of Data Stolen [7]

APPLICATIONS OF CLOUD COMPUTING FOR LIBRARY MANAGEMENT SYSTEM

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ABSTRACT
Cloud computing present an advantage for libraries, it is providing several opportunities to link their services to the cloud. Cloud computing is the new type of service providing on the Internet, which has entirely changed the way computers are used regardless of geographical barriers. The paper focused on cloud computing and its probable applications that can be clubbed with library services on the web based era. This study may be useful in recognizing and producing cloud based services for libraries.

Keywords: Cloud Computing, Software as a Service, Platform as a Service, Infrastructure as a Service, Models of Cloud Computing, Applications of cloud Computing.

1. INTRODUCTION
In the current scenario, web based technologies developed on virtual platforms and created huge opportunities and virtual avenues for different users to use their services. Currently, cloud computing services appear as the trendiest virtual technology for libraries to serve effectively. Cloud computing features various technologies like grid computing, utility computing, unified computing, Web 2.0, service oriented architecture and more. Cloud computing technology is giving advantages for libraries an innovative way to connect their services not only instantly, but also in new formats with the flexibility to pay, access anywhere, as you use the model.

2. MEANING AND CONCEPT OF CLOUD COMPUTING
The word cloud refers to a network present at remote area. Cloud can provide services on public or private networks i.e. wide area network, local area network. Cloud computing refers to operating, accessing, and configuring the application online. It provides online data storage infra and function. Cloud computing denotes that rather than all the hardware and software you are utilizing sitting on your desktop or anywhere indoors your local network. It refers to the various types of services and results that can be presented in the Internet cloud and in many cases the tools used to access these services and applications do not require any special applications. With cloud computing you are able to employ the software conveying by the internet on the browser without any fitting, host applications on the Internet set up your individual database system and remote file storage and more.

The National Institute of Technology and Standards (NIST) provide the simplest definition of Cloud computing is a model for enabling, convenient, on-demand network access to a shared pool of configurable computing resources e.g. Server, Networks, services, Storage and Applications, that can be fastly maintained and associated with negligible management effort or service provider interface

According to Gartner cloud computing as: "A style of computing where massively scalable IT- related capabilities are provided 'as a service' using internet technologies to multiple external customers"

Buyya said that 'Cloud computing is a parallel and distributed computing system consisting of a collection of virtualized and interconnected computers that are energetically provisioned and presented as one or more unified computing resources based on service level agreements recognized throughout compromise between the service provider and costumers.

3. FEATURES OF CLOUD COMPUTING
Main attributes of clouds computing are given below
- ❖ Self-healing: A self diagnosis and self healing system must be created against various failures or downgrades.

- ❖ Self-service interface: With the self-service cloud, users retrieve a web based portal, where they can demand or construct a server and launch applications.

- ❖ Pay Per Usage: Cloud providers usually use the "pay-as-use" model, which can escort to unpredicted operating costs if administrators are not familiar with the cloud-pricing model.

- ❖ Service-oriented: It is a way is to modularize key business services and improve service interfaces designed to ensure that the service business operates in a variety of services.

AGMENTED REALITY IN MEDICAL SCIENCE - A NEW VISION

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ABSTRACT

The main purpose of this paper is to examine some (potential) applications of augmented reality in our day-to-day life. For the readers who are not familiar with or less known to the world of augmented reality. We hope that this paper will be a useful map for researchers who are going to explore further and deeper connections in augmented reality, although some parts of the map are very rough and other parts are empty, and waiting for the readers to fill in.

Keywords: Augmented Reality Tools, Sensorama, HoloLens, AR in operations.

INTRODUCTION

Augmented reality is an interactive experience of a real world environment by combining real world objects with computer generated perceptual information. This can be done sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory sensors. The information perceived can be constructive or destructive. Hence, augmented reality alters one's perception of real world environment where as virtual reality replaces the uses real world environment with a simulated one.

I. HISTORY

The idea of an electronic display / spectacles that overlay data or enhance the real-life perception was first put forth by L. Frank Baum, the author of 'character maker'. A cinematographer named Morton Heilig, was the first to create and patent a simulator called 'Sensorama' [6]. This device was created around 1957 to 1962. It gave the user the augmented experience of visuals, sound, vibration and smell. Though it was a revolutionary invention at that time, it did not get as much popularity as expected.
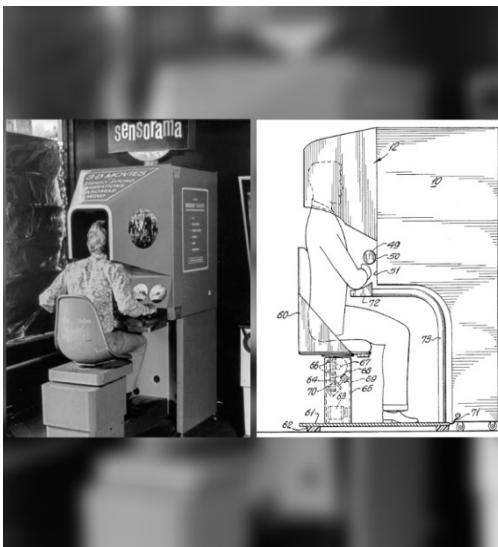
Figure-1: Sensorama. [5]

The first head-mounted display was developed by Ivan Sutherland in 1968[6]. This device was portrayed as a window into the virtual world. The next major invention the 'Videoplace' was developed by Myron Krueger in 1975[6]. It allowed users to interact with the virtual objects which was not implemented by Ivan Sutherland. Steve Mann was the first to create a wearable computer. This device was a computer vision system with text and graphical overlays over a photographically mediated scene.

The term augmented reality is attributed to Thomas P. Caudell, a former Boeing researcher[6]. An authentic example of augmented reality is Windows Holographic and the HoloLens announced by Microsoft in 2015.

Another example of this technology implemented in the gaming world was Pokémon Go, a game that made everyone go crazy.

CRIME DATA ANALYTICS USING HADOOP, SPARK AND ZEPPELIN

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ABSTRACT

With the emergence of internet and futuristic Internet of things, the data is enhancing every today. The huge amount of data produced from the various applications like internet, social media, bio-informatics, sensors data, web log data from different systems/ mobile devices connected to internet and weather forecasting from different agencies etc. The processing of this gigantic and huge amount of data using database system is unfeasible. The proposed framework is developed using big data Hadoop, Spark, Zeppelin for analytics on large amount of crime data taken from the open web source of USA from 2006-2016[19] & the results obtained, can be used to improve performances of police, police patrolling in the given area of occurrence to reduce the crime. Using Zeppelin visualization, the police can simply analyze the location where the probability of crime is high and can prevent it from happening. Zeppelin visualization acts as a medium between big data model and police personal. In this work we tries to address and find the different most number of crime occurring in the city, depending on the premises types such as commercial, residential, highways, secluded places and ensure the presence and deployment of additional police patrolling based on this. Also we let the police personal or the public in general to search in real time and know the status of their complaint or FIR lodge details from any part of the world and its action taken report for the given incidence number in very fast, effective and in an efficient manner, when done conventionally can come more time and resources. Our proposed worked also tries to address these issues to lets the decision making bodies to work and refine their strategies to control the crime rate based on these ratings.

Keywords: Big Data; Data Analysis; Data Visualization; Hadoop; Crime Data.

INTRODUCTION

Much of the police work is not proactive and strategic in nature, but reactive and incident-focused. Policing is on the road to a more realistic, reliable and sustainable approach to crime reduction. Even though the police do much more than fight crime, they respond to civil disturbances, maintain law and order, and even take up social work[1][21]. The role of big data is to offer a novel encounters and occasions in front of police and digital forensic investigators. It also stresses upon the prerequisite of novel tools that are well-trained to identify, collect, preserve and analyses big data evidences in a protected manner. Apart from this, the tools should be skillful of to avert the data from tempering to uphold the integrity of the evidence for future use. The new technique and training personnel are also required by the digital forensic investigators to deal with the challenges presented by the big data. The future prospects require new algorithmic approach for solving the complexity and challenges of forensic analyzer to investigate and report the evidence to the court[2].

Each company is facing ever-increasing challenges in recent times that need to be tackled quickly and efficiently. With an ever-increasing population, crime and crime rate analysis of related data is a huge issue for governments to make strategic decisions to maintain law and order, which is really necessary to keep the country's society safe from crime[21]. The best place to look for scope for improvement is the voluminous data that is raw in format created by applying Big Data Analytics (BDA) from different sources on a regular basis.

BDA refers to the tools and procedures that can be used to turn the raw data collected into relevant, useful and essential information that helps the judiciary and legislature to take steps to keep crimes in check in a Decision Support System (DSS). With the ever-increasing rates of population and crime, certain patterns need to be identified, studied and debated in order to make well-informed decisions in order to maintain a proper law and order and thus have a sense of security, security and well-being among the country's citizens. We used the US dataset available on the https:/www.data.gov/ website for this study[19].

- The objective of this work is to develop an application using big data Hadoop for doing analytics on large of amount data & give outputs and outputs can used to improve performances related to business, education, hospitals, governments departments like polices, defense etc.

DESIGN ANALYSIS AND TESTING OF CENTRIFUGAL PUMP IMPELLER

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ABSTRACT

Impeller is a rotating components of a centrifugal pump. In that the excessive vibration is a good indicator that indicates some damaging phenomenon occurring within a impeller. Mostly machinery problems result from the interaction between an exciting force, associated structural and hydraulic resonance frequencies. When exciting force is stronger at natural frequency the amplitude of vibration becomes maximum. Hence the main objective of this is to carryout vibration analysis and experimentation on various materials to find out alternate suitable material and to minimize the vibration and to improve the performance of pump impeller. To find out the natural frequency of a impeller modal analysis was carried out. Cad model generation was done in CATIA V5, meshing in HYPER MESH and ANSYS is for post processing. Re-analysis and experimentation was done using different material to check the vibration response on the impeller.

I INTRODUCTION

AN impeller is a rotating component of a centrifugal pump, which transfer energy from motor to the fluid being pumped by accelerating the fluid centrifugally from the center of rotation. It usually made of iron, steel, bronze, brass, aluminum or plastic. The fluid which flow outward from the center of rotation due to centrifugal phenomenon increases pressure by converting the velocity achieved from the impeller. Usually impellers are short cylinders with an open inlet for accepting fluid from suction pipe, vanes provided to push the fluid radially and keyed or threaded bore provided for a drive-shaft. The impeller may be called rotor also. A centrifugal pump contains the rotating and the stationary part. The rotating part includes a shaft and a pump impeller while the stationary part is composed of the casing, bearing, electric motor and an associated cooling fan. Mechanical vibration sources are carried out by vibration of unbalanced rotating masses and friction in bearing and seals. Vibration in any machine component is undesirable. Vibration may be dangerous in many ways i.e. it causes damage to the structure, loosening of bearing may occur etc.

A. Mechanical Vibrations Sources

1) Motor and shaft: When the motor in the hydraulic system is rotating at a high speed, the rotating part imbalance can result in periodic unbalanced force. The vibration occur due to the displacement of its shaft from its neutral position due to some external forces generated when the shaft rotates. The shaft vibration frequency is equal to motor rotation frequency.

2) Coupling: Alignment of motor shaft and prime mover driven shaft is very important to minimize the vibration.

3) Pipeline and Tank: Pipeline and tank are not the source of vibration. The vibration is influenced by other components, such as pressure and flow pulsation, mechanical vibration and so on. When natural frequencies and vibration frequency of pipeline and tank is same, then resonance occurs, resulting in strong vibration. Especially when the pipeline is too slender or meticulous and direction changes to a great extent, more easily to cause vibration.

II PROBLEM STATEMENT

Always some vibration produce in the operation of any mechanical system but when it crosses the desire limit, vibration is unavoidable. Vibration is an indicator of some problem with a mechanism, or it may be a cause of other problems. Vibration of impeller in centrifugal pump is responsible to reduce performance of pump. So most important is to find out and minimize the vibration by doing proper vibration analysis and experimental analysis of components.

III METHOD OF VIBRATION REDUCTION

Mainly two main group of vibration reduction methods, i) passive method and ii) active method.

Passive method uses materials and mechanical linkages that absorb and damp these mechanical waves. Active method involves sensors and actuators that produce destructive interference that cancels out incoming vibration.

IV VIBRATION ANALYSIS

A centrifugal pump impeller model designed by using CatiaV5R19 and then imported a solid model to Hype

DESIGN AND ANALYSIS OF ELECTROMAGNETIC DAMPER FOR VIBRATION SUPPRESSION OF STRUCTURES

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ABSTRACT
This Paper presents the use of eddy current due to electromagnet is sufficient to suppress the structure vibration. Electromagnetic principle is used normally in brake systems, transmission or for damping phenomena. For damping phenomena the advantage as compared to some other devices is no mechanical contact, no wear and is simple technique. In this article finite element analysis (FEA) software was used to develop the model. Start is done by plotting different mode shapes of structure and then by eddy current due to electromagnetic damping the vibration of structure. We can reduce the damping of varying mass by this damper and also reduce damping coefficient. Damper consists of neodymium iron grade N 50 magnet. By utilizing the damper it is observed that there is more difference in damping when experimental result is compared with analytical result.

INTRODUCTION
Damping due to eddy current is more efficient form of damping. Important parts of damping are permanent magnet, conducting disc of copper. When conductor moves through stationary magnetic field or vice versa electromagnetic forces are produced and these electromagnetic forces can be used to suppress the vibrations of a flexible structure. Drag force or damping force is generated which dissipates kinetic energy into ohmic heat. These dampers have found huge applications, as compared to viscous, viscoelastic or piezoelectric damper. Advantages of electromagnetic based eddy current damper are mechanical contact is eliminated, more reliable, high thermal stability and vacuum compatibility. Certain disadvantages are due to large mass and more packing size.

Normally in the design of transformers or electromagnetic motors laminated steel is used to reduce to reduce eddy current losses. By splitting the conductor, electrical resistance can be increased in the current loops. For electromagnetic damper we should reduce the loop resistance, hence the area of conductors is usually more than the area of magnetic field. By utilizing this approach of "split the magnets to increase eddy current via alternating the magnetic poles.

To illustrate this idea, consider two extreme cases as follows. Figure 1a) shows a moving conductor in a uniform magnetic field of the same width. In Fig. 1b) the magnetic field is split into two with alternative pole directions. When the conductor is moving at position as shown in the figure, instantaneous electric charges are induced in both cases, as indicated in Figs. 1a) and 1b). However eddy current loop and damping exist only in case b) but not in case a) .Case a) is similar to two identical batteries connected in parallel. If the conductor plate is wider than the magnetic field, or the B flux density is not uniform, eddy current and damping force exist in both cases in Fig. 1, but the damping force in case b) will be much larger than that in case a)
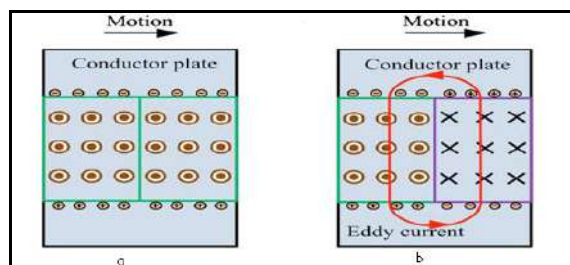

Fig-1: Illustration of Two Types of Arrangements of Magnetic Field for Eddy Current Dampers: (a) Uniform Magnetic Field & (b) Alternating Magnetic Field

A. Analysis of a Conducting plate in a Uniform Magnetic Field.
According to our intuitive illustration based on electrical current loops, we see that the damping Coefficient of a moving conductor plate in an Alternating magnetic field is larger than the plate in a Uniform magnetic field. In the following, we will describe the analytical model of the eddy current Damper in a uniform magnetic field, and then present the modeling of the eddy current damper in the alternating magnetic field. Fig. 2a) shows the eddy current damper composed of a conductor moving with a relative velocity v (m/s) in a rectangular magnetic field

DIGITAL IMAGE WATERMARKING USING DWT AND CHIRP-Z TRANSFORM

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ABSTRACT
Digital watermarking has been attracted growing courtesies as it has been current resolution to copyright security and content authentication that become a concern to be addressed in multimedia technology. This work presents a novel watermarking model based on discrete wavelet transform (DWT) in combination with chirp z-transform (CZT) and singular value decomposition (SVD). Initially, the input image is decomposed into its frequency sub-bands by using DWT. Then, the high-frequency sub-band is transformed into z-domain by employing CZT. Further by SVD, watermark is added to singular matrix of the transformed image. Finally, the watermarked image is obtained by taking inverse of CZT and inverse of DWT. This hybrid model combines benefits of all three algorithms. The experimental result shows that the algorithm is imperceptible and robust to several attacks and signal processing operations.

Keyword: Watermarking, Discrete Wavelet Transform (DWT), Chirp-Z Transform (CZT) and Singular Value Decomposition (SVD).

I. INTRODUCTION

With speedy growth of computer networks, and internet technologies, interactive program information is stored and transported as digital messages building communication easy and convenient. Though digital broadcasting of messages has made communication faster and easier, it has also been leads to various types of infringements on digital information that includes illegal copying, illegal reproduction of original contents, easy access, authorized manipulations, and malicious attacks. Digital watermarking is a well-known technology which helps to keep multimedia information from illegal copying, manipulation, and distribution problems by inserting ownership information into digital multimedia content without it been noticed by visual representation. Watermarking techniques are usually clustered into spatial and frequency domain algorithm. The spatial algorithm embeds watermark into digital content by pixel modification.

However frequency domain watermarking has higher computational cost, it has been confirmed to be more robust and imperceptible than spatial domain watermarking. Currently, discrete wavelet trans-form (DWT) [2] [6], discrete cosine transform (DCT) [3] [7], the discrete Fourier transform (DFT)[15] [6] and Zernike moments [16] are frequently used frequency domain watermarking; however, DWT is most widely used due to its frequency spread, multiresolution ability, and spatial localized nature of its wavelet.

Recently, singular value decomposition (SVD) has been adopted by most examiners to implant a watermark. SVD is a universal linear algebra method for a diversity of applications. It's usage in watermarking supports to get better transparency and robustness since minor disparities of singular value do not affect visual perception of cover image. Another transform algorithm that has been used by researcher for image reconstruction is chirp z-transform (CZT) [5] [10].CZT is a technique for evaluating z-transform of a signal. Z-domain transfer functions can be factored into polynomials with poles and zeros as its roots, where poles model peak energy concentration of frequency spectrum and zeros model troughs of the frequency spectrum.

Here, we have proposed a new watermarking technique based on DWT in combination with the CZT and SVD [8]. This algorithm combines advantages of these three transforms. The algorithm can help satisfy the robustness and imperceptibility characteristics of a good watermarking algorithm by greatly improving the visual quality of the watermarked image.

II. LITERATURE SURVEY

This section describes the literature survey of the proposed work based on research carried out by many researches related to various approaches for digital image watermarking.

Mehran Andalibiet.al [01] has presented a techniquefor invisible grayscale logo watermarking that works through adaptive texturization of logo. The strategic idea of thistactic isto reorganize watermarking task to a texture similarity task. They firstly isolate host image into suitably textured and poorly textured regions. Next,

DISASTER MANAGEMENT IN INDIA

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ABSTRACT

India is one of the most disaster prone countries in the world . disaster strike causing a devastating impact on human life, economy and environment? Various disasters like earthquake, landslides, volcanic eruptions, fires, flood and cyclones are natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year.. In India, as in the l. The GOI have a national emergency plan for disaster management, some of the state also has a disaster management plan, but there is a lack of awareness in the public. Many Indian States do not have disaster management plan due to limited resources. Considering these problems, this paper enlight more integrated disaster management system in India. This paper will provide important information in three mutually reinforcing areas viz. disaster preparedness, response and rehabilitation management. The various case studies for disaster management will be discussed.

Keywords: Disaster, Mitigation, Hazards, Risk, Safety Management, India, National Disaster Management Authority (NDMA)

1   INTRODUCTION
1.1 What is disaster?
Disaster is an event or series of events, which gives rise to casualties and damage or loss of properties, infrastructures, environment, essential services or means of livelihood on such a scale which is beyond the normal capacity of the affected community to cope with. Disaster is also sometimes described as a "catastrophic situation in which the normal pattern of life or eco-system has been disrupted and extra-ordinary emergency interventions are required to save and preserve lives and or the environment".

The whole cycle of Disaster Management can be depicted by following figure 1.1.

Figure-1.1: Etymology

1.2 Types of disaster
Disasters are mainly of two types –

1) Natural disaster

2) Man made disaster

These are further classified into major/minor natural disaster and major/minor manmade disasters. Some of the disasters are listed in Table 1 below.

EFFICIENCY IMPROVEMENT OF VORTEX TUBE, BY VARYING INSIDE SURFACE ROUGHNESS OF CYLINDRICAL HOT TUBES

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ABSTRACT

Refrigeration plays an important role in developing countries, mainly for the preservation of food, medicine and air conditioning. Conventional refrigeration systems use Freon as a refrigerant. As they are the main cause of ozone depletion, extensive research work is underway on alternative refrigeration systems. The Vortex tube is an unconventional cooling device, without moving parts that can produce cold air and hot air from the compressed air source without affecting the environment. When a high pressure air is injected tangentially into the vortex chamber, a strong vortex flow will be created which will be split into two air flows. It can be used for any type of spot cooling or heating application. In this document, the counter-flow vortex tube is compared with different performances of hot surface roughness tubes. It was found that the vortex tube with surface roughness of Ra = 6.264 µm exceeded the hot tubes with surface roughness of Ra = 4.510 µm and Ra = 3.133 µm respectively from 6% to 26% and from 16% to 52% in COP . The COP of the vortex tube increases as the roughness of the inner surface of the hot tube increases

A vortex tube contains the different main parts vortex chamber inlet and cold terminal orifice, hot control valve and orifice. It works in such a way that the fluid enters the tube circles around an axis that is called a vortex. And that rotation creates a vortex from the compressed air and separates that flow into two hot and cold air flows. From its center, the super-cooled air that is delivered through the cold end door is exceeded. The surface finish of the nozzle and tube, ie the hot end, plays an important role in the performance of the vortex tube. In this document it is observed that the vortex tube with main surface roughness values of cylindrical hot tubes is used to increase the efficiency of the tube vortex. It results in COP of the vortex tube.

Keywords: Vortex chamber, Roughness value of cylindrical hot tubes, COP of the system, Efficiency of tube.

INTRODUCTION

The vortex tube is a static thermal tube that separates the flow of compressed gas into two flows; a cooler flow than the inlet flow while the other flow is warmer than the inlet flow. The vortex tube has no moving parts and separation occurs due to vortex flow generation without requiring any external mechanical work or heat transfer. The vortex tube was first discovered by Ranque [1, 2] who was granted a French patent for the device in 1932 and a US patent in 1934. Ranque encountered the vortex tube phenomenon while he was working experimentally with the vortex tube pump in 1928 In 1945 Rudolf Hilsch [3] conducted a vortex tube experiment focused on thermal performance with different inlet pressure and geometric parameters. In recent years it has been known that the vortex tube is a low cost and an effective solution to many spot cooling problems. The separation mechanism inside the vortex tube remains until now not completely understood [4]. The ability to obtain hot or cold flow streams using compressed gas has allowed the use of the vortex tube in many engineering applications such as electronic cooling, food cooling, cooling of the fire suit and machinery cooling during operation. Despite its reduced capacity, the Ranque-Hilsch swirl tube (RHVT) is very useful for some thermal management applications due to its simplicity, high durability, compactness, lightness, sturdiness, reliability, low maintenance and safety costs [5] . RHVT can be classified into two types [6]: (1) counter-flow RHVT and (2) uni-flow RHVT. In the counter-current type RHVT the cold flow moves in the opposite direction to the hot flow, while in the uni-flow type, the hot and cold flows flow in the same direction. In general, counter-current RHVT is recommended over RHVT uni-flow due to its efficient energy separation [6]. The Vortex tube is widely treated in literature through experimental and numerical analyzes. The experimental work of Nimbalkar and Muller [7] indicated that there is an optimal diameter of the cold end orifice to obtain maximum energy separation. Furthermore, the results [7] showed that the maximum value of the energy separation was always reachable with a cold fraction of 60% regardless of the diameter of the orifice and the inlet pressure. The optimal ratio between diameter and length of the hot side was studied by Dincer et al. [8, 9]. The performance of the vortex tube was studied for three different working gases: air, oxygen and nitrogen and the results were reported using strip views in a vortex tube in Perspex [10]. Aydın and Baki [10] and Hamdan et al. [11] indicated that the inlet pressure and the cold mass fraction were the most important operating parameters. Hamdan et al. [11] in their experimental work investigated the effect of numerous operating and geometric parameters on the thermal performance of the vortex tube, in which the effect of position of the vortex plug, the pressure of the inlet gas, the number were covered. of vortex generator inlet nozzles and

FABRICATION OF CLOTH DRYING MACHINE USING A CONDENSATION UNIT

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ABSTRACT

The following paper discusses to study the clothes dryer machine by using heat. There are many cabinet dryers which are widely used today as an alternative to natural clothes drying, especially for those who are busy working from morning until evening, having limited time and for the residents in urban areas. Nowadays cabinet dryer are already offered in the market, but they are expensive to afford. A cloth dryer has to be made with the help of available materials. Its efficiency is investigated with respect to how fast it is able to dry up the clothes. Hence a set of experiments are performed to determine the worthiness of this dryer. The main advantage of this dryer is that it can work all round the year, with a built-in auxiliary heating system. Also, with no moving parts, it consumes less power than conventional dryers in washing machines. It can easily be built with commonly available materials such as plastic moulded body, aluminium motor, timer output etc. The comparison of two different materials such as iron and aluminium are done for best results. The cloth drying machine is designed on Solidworks and analysed on Ansys 2018.

Keywords: Design, Analysis, Cloth Dryer, Aluminium Motor, Solidworks, Ansys 2018.

INTRODUCTION

Now days drying clothes usually use natural way by using the energy from the Sunlight and the wind, but nowadays the technology is plentifully developed upward and the clothes dryers that use the electric energy or other energy come to use extensively, Especially in the urban area where limited sunlight (cloudy days) and restricted air flow of house types such as high rise condominiums and apartments, natural drying is prohibited in some housing areas for aesthetic reasons and conventional domestic electric dryers are too expensive and inefficient decreasing energy losses and heat recovery is important research topics, nowadays. Many cabinet dryers widely use, especially those who are busy working. Besides that, most of laundries today have their own dryer cabinet. It is not just because to run their operation at all the time, but they also can prevent the risk to the cloths that might lose or dirty. Cabinet dryer on the market nowadays is using electrical power as a source in generating heat.

The design available in markets are very bulky and uses lots of energy because it is not utilized properly half of energy get wasted to the surrounding. The size of the product made very compact so when it needs to be get used we can unfold it and extend it to its ultimate size where we can hang clothes and two heating sources. Because two heating sources are provided time required to dry cloths is less as compared to other expensive devices which also uses lots of energy to dry the cloths.

TYPES OF DRYERS

Spin Dryer: This machine simply spins their drums faster than a typical washer could in order to extract addition water from the load. They may remove more water in two minutes than a heated tumbler dryer can in twenty minutes, saving significant amounts of time and energy. Although spinning alone will not completely dry clothing, this additional step saves a worthwhile amount of time and energy for large laundry operations such as those of hospitals. **Condensation Dryer:** Just as in a normal dryer, condensation dryers pass heated air through the load. However, instead of exhausting this air the dryer uses a heat exchanger to cool the air and condense the water vapour into either a drain pipe or a collection tank. Afterwards, this air is run through the loop again. The heat exchanger typically uses ambient air as its coolant, therefore the heat produced by the dryer will go into the immediate surroundings instead of the outside, increasing the room temperature slightly. In some designs, cold water is used in the heat exchanger, eliminating this heating but requiring increased water usage.

Dehumidifier Dryers: By keeping a low humidity, dehumidifiers encourage fast evaporation without high heat. This type if dryer is suitable for clothes that can withstand tumbling but not high heat.

Heat Pump Dryers: A closed-cycle heat pump clothes dryer uses a heat pump to dehumidify the processing air. Such dryers typically use under half the energy per load of a condenser dryer. Whereas condensation dryers use a passive heat exchanger cooled by ambient air, these dryers use a heat pump. The hot humid air from the tumbler is passed through a heat pump where the cold side condenses the water vapor into either a drain pipe or a collection tank and the hot side reheats the air. In this way not only does the dryer avoids the need for ducting,

FACE DETECTION ATTENDANCE SYSTEM- FACE DETECTION TECHNOLOGY

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ABSTRACT

The face is one of the easiest ways to distinguish the individual identity of each other. Face recognition is a personal identification system that uses personal characteristics of a person to identify the person's identity. Human face recognition procedure basically consists of two phases, namely face detection, where this process takes place very rapidly in humans, except under conditions where the object is located at a short distance away, the next is the introduction, which recognize a face as individuals.

Keywords: Face Detection, Eigen Face, PCA, Matlab.

INTRODUCTION

Face recognition is an important application of Image processing owing to its use in many fields. Identification of individuals in an organization for the purpose of attendance is one such application of face recognition. Maintenance and monitoring of attendance records plays a vital role in the analysis of performance of any organization. The purpose of developing attendance management system is to computerize the traditional way of taking attendance. Automated Attendance Management System performs the daily activities of attendance marking and analysis with reduced human intervention. The prevalent techniques and methodologies for detecting and recognizing face fail to overcome issues such as scaling, pose, illumination, variations, rotation, and occlusions. The proposed system aims to overcome the pitfalls of the existing systems and provides features such as detection of faces, extraction of the features, detection of extracted features, and analysis of students' attendance. The system integrates techniques such as image contrasts, integral images, color features and cascading classifier for feature detection. The system provides an increased accuracy due to use of a large number of features (Shape, Colour, LBP, wavelet, Auto-Correlation) of the face. Faces are recognized using Euclidean distance and k-nearest neighbor algorithms. Better accuracy is attained in results as the system takes into account the changes that occur in the face over the period of time and employs suitable learning algorithms.
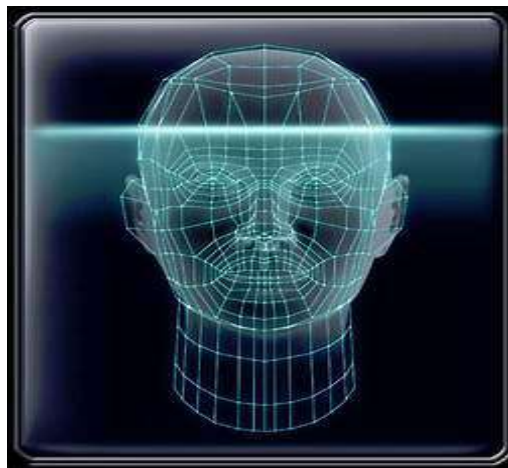
HISTORY

During 1964 and 1965, Bledsoe, along with Helen Chan and Charles Bisson, worked on using the computer to recognize human faces (Bledsoe 1966a, 1966b; Bledsoe and Chan 1965). He was proud of this work, but because the funding was provided by an unnamed intelligence agency that did not allow much publicity, little of the work was published. Based on the available references, it was revealed that the Bledsoe's initial approach involved the manual marking of various landmarks on the face such as the eye centers, mouth, etc., and these were mathematically rotated by computer to compensate for pose variation.

The distances between landmarks were also automatically computed and compared between images to determine identity.

Given a large database of images (in effect, a book of mug shots) and a photograph, the problem was to select from the database a small set of records such that one of the image records matched the photograph. The success of the method could be measured in terms of the ratio of the answer list to the number of records in the database. Bledsoe (1966a) described the following difficulties.

IDENTIFICATION OF FRUITS USING HSV FILTER

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ABSTRACT
In this paper we developed an algorithm to find specific fruit within pictures containing mixed fruit on relatively simple backgrounds. This algorithm characterizes the pixels based on hue, saturation, and value thresholds set through quantitative analysis and adjustment. Then, the algorithm rejects some clusters of pixels that are too small to be fruit, and performs morphological operations to smooth the fruit shapes. The algorithm performs very well on images with a clear background and fruit that do not overlap. It achieves 98.3% accuracy for identifying fruit across three test images. However, the algorithm degrades when there is excessive overlap of fruit; it cannot distinguish neighboring fruit.

Keywords: Thresholds, Morphologicaloperations, Clusters, Pixels, Algorithm.

1. INTRODUCTION
We have written an algorithm to find and count different types of fruit within color images. Specifically, the fruit we focused on are apples (only red), oranges, and bananas. This may seem trivial – a simple color filter to separate red, orange, and yellow should suffice. However, this is not nearly so simple. The fruits vary in color and shading enough that there is significant overlap in the colors. For example, an orange with an under-ripe portion may look quite yellow, like a banana. On the other hand, an apple that is too dark and in the shade may not even look like a fruit to that algorithm. We have created an algorithm that can find most fruits accurately under various circumstances. For our algorithm to function as intended the image must have a background that does not match the fruit color. Our algorithm can accommodate a wide array of lighting conditions, but it struggles to identify multiple fruit of the same type that are touching. .

2. PREPROCESSING
The first step of our fruit finder is to filter based on the pixel color characteristics. To establish metrics to for the filter, we needed to do quantitative analysis of the colors of the fruit. We started by examining the RGB color values of each of the fruitusingphotos taken under daylight and fluorescent lighting conditions. We found that RGB would be very difficult to come up with reliable metrics. For example, to define a color range for apples, there would need to be a range of red values, a different range of green values, and yet another range of blue values. These ranges would define a 3D "cube" of color that encompasses many colors, not all of which would be red. Coming up with RGB ranges in this way would yield too wide of a range of colors and would not be appropriate for separating fruit.

Instead of using the RGB color space, we chose to use HSV for our color filtering. This would give us a single range for the hue, then separate ranges for saturation and value. This would be much easier to specify the colors of our fruit. We started by converting the images to HSV using MATLAB's built-in rgb2hsv function. We plotted hue, saturation, and value histograms of daylight and fluorescent images for each fruit.
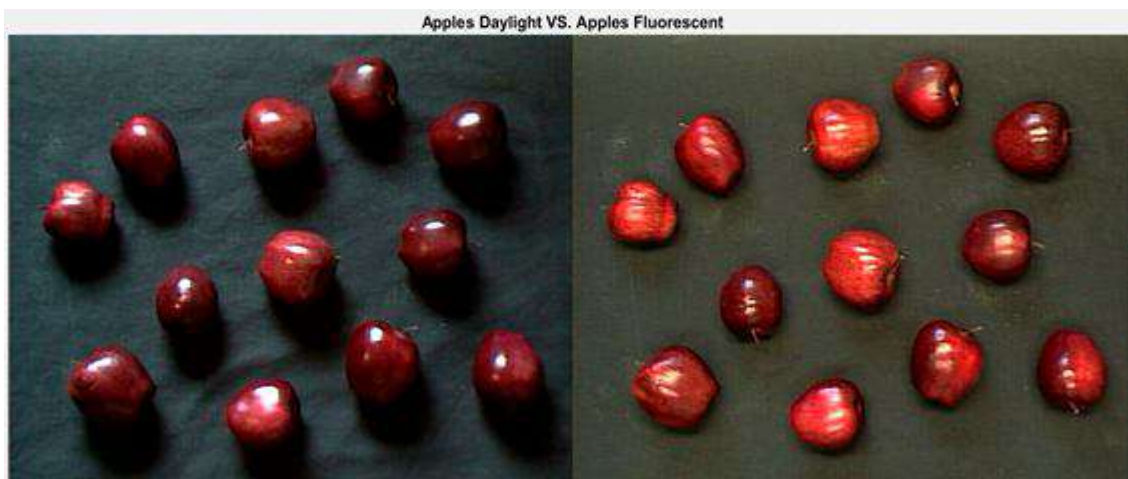
2.1 Apples

Figure-1: This compares the images for apples in the daylight (left plot) and in fluorescent light (right plot)

INFLUENCE OF BEARINGS ON THE TORSIONAL VIBRATIONS OF GEAR BOX

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ABSTRACT

This paper contains the influence of bearings on the torsional vibrations of gear drives. This paper shows that the lateral deflection of shafts also contributes to the shaft torsional stiffness. An expression is derived now to determine the torsional flexibility of the shaft due to bearing elasticity and shaft lateral bending. The analysis is carried out by using ANSYS software. This analysis is to find out the frequency and total flexibility of the gear box to prevent the resonance. From the result, this analysis can show the range of frequency that is suitable for the gear box casing which can reduce resonance.

I. INTRODUCTION

Gear drives exist in several industrial machines like for instance in machine tools, automotive power transmission, air craft controls etc. A gear drive is powered by a Drive motor at the input end and it drives a load at a desired RPM. The power is transmitted through a series of gears and shafts mounted in bearings. The number of shafts and gears depends upon the number of speeds at the output. Various shafts in the gear drive rotate at different speeds. It is required that no shaft in the drive should resonate either in the lateral or torsional directions. In other words, the working frequencies and the natural frequencies should never coincide. The torsional natural frequencies depend on the torsional stiffness of the shafts and the inertias of the rotating masses like gears in the gear box. The natural frequency is given by the formula $\omega_n = (K/M)^{1/2}/(2\pi)$ Where K is the gear drive stiffness and M is the inertia of the gear drive. K can be computed from the stiffness of individual gear shafts.

A gearbox is a mechanical method of transferring energy from one device to another and is used to increase torque while reducing speed. Torque is the power generated through the bending or twisting of a solid material. This term is often used interchangeably with transmission. Gear box is located at the junction point of a power shaft, it is often used to create a right-angle change in direction, as is seen in a rotary mower or a helicopter. Each unit is made with a specific purpose in mind, and the gear ratio used is designed to provide the level of force required. This ratio is fixed and cannot be changed once the box is constructed. The only possible modification after the fact is an adjustment that allows the shaft speed to increase, along with a corresponding reduction in torque.

In a situation where multiple speeds are needed, a transmission with multiple gears can be used to increase torque while slowing down the output speed. This design is commonly found in automobile transmissions. The same principle can be used to create an overdrive gear that increases output speed while decreasing torque.

II. SCOPE AND OBJECTIVE

The problem is faced in a machine tool gear box is resonance due to torsional vibrations. An attempt is made to avoid the resonance by improving the shaft diameters. But it did not work. Now it is proved that even the lateral deflection of shafts also contributes to the shaft torsional stiffness. An expression is derived now to determine the torsional flexibility of the shaft due to bearing elasticity and shaft lateral bending and there by compute the total torsional flexibility.

The method that is developed now is used for predicting the influence of bearing elasticity on the shaft torsional vibrations. The torsional stiffness is increased and there by the torsional resonance is avoided in the gear box. This is achieved not by just increasing the shaft diameter but by modifying the mounting shaft bearings also.

III. LITERATURE REVIEW

Miloš PROKOP, (1) Each unit of mechanical equipment has a different signature in the frequency spectrum. The vibration spectrum shows the areas of stress and undue energy. Vibration measurements trend changes at different locations along the units to predict problems. The key benefits include: monitoring equipment life, increasing equipment uptime, managing and scheduling maintenance work. Vibration analysis can determine misalignment unbalance, mechanical looseness, eccentric shafts, gear wear, broken teeth, and bearing wear. Using Laser Vibrometer is possible to get the data that are processed in different methods like FFT, Spectrogram, Cepstrum, Wavelet transform and Cyclostationary analysis.

Michal Hajˇzman, (2) The paper deals with the modelling of a real gearbox used in cement mill applications and with the sensitivity analysis of its eigen frequencies with respect to design parameters. The torsional model

INTELLIGENT TRANSPORT SYSTEM USING GLOBAL INFORMATION SYSTEM

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ABSTRACT

Intelligent transport system refers to efforts to add information and communication technology to transport infra structured vehicles in an effort to manage factors that typically are at odds with each other like vehicles, loads and routes to improve safety and reduce vehicle wear transportation times and fuel consumption. Global information system is a computer based system which is used to digitally reproduce the features, present on the surface of earth and events that take place. Advanced Traveler Information Systems (ATIS) is one of the user services provided by ITS. With ATIS information, drivers make informed decisions and are better equipped to plan their route and estimate their travel time. Route planning is an essential component of ATIS, aiding travelers in choosing the optimal path to their destinations in terms of travel distance, travel time.

Nature has gifted man and animals the ability to move. With his intelligence man has developed transportation system leading to economic well-being. However we have to pay for this in the form of its undesirable effects as environmental impacts, energy consumption, congestion, casualties and money required to build infrastructure. This has led us to a more balanced and sustainable transportation system. Here Intelligent Transportation system comes into picture – the application of computer and communication technologies to transport problems. The old adage, 'knowledge is power' is the obvious solution to this.

In this paper, how an advanced traveler information system for a developed in GIS environment can be useful is shown. This user friendly system provides complete information of a city such as road network, tourist places within the city limits, hospitals, government and private offices, stadiums, bus and railway stations. This system provides shortest path and path to closest facility based on distance and drive time. The GIS can be used in bus stands, railway stations, airports, tourist information centers, in personal computers to give information to the travelers.

INTRODUCTION

Nature has gifted man and animals the ability to move. With his intelligence man has developed transportation system leading to economic well-being. However we have to pay for this in the form of its undesirable effects as environmental impacts, energy consumption, congestion, casualties and money required to build infrastructure. This has led us to a more balanced and sustainable transportation system. Here *Intelligent Transportation system* comes into picture – the application of computer and communication technologies to transport problems. Here *Intelligent Transportation system* comes into picture – the application of computer and communication technologies to transport problems.

Japanese seems to have initiated the whole modern day notion of ITS with work carried out in the 1980s. The United States was also addressing the application of ITS at an early stage in the course of the Electronic Route Guidance project (ERGS) in the 1970's. The European Union picked up the theme, and referred to it as Road Transport Informatics. In the course of time the name of this technology subjected to many changes until USA had given a name called ITS to it.

ATIS provides both preterit and en route information to the users, both of which offer distinctive advantages. The availability of preterit information drivers enhances their self-belief to use freeways and allows commuters to make better-informed transit choices. En route information and guidance saves travel time, helps a traveler avoid congestion, can improve traffic network performance, and is more efficient than paper maps or written instructions.

The old adage, 'knowledge is power' is the obvious solution to this. Customers want real-time information to help them select the best route to take at any given time. They need to know traffic speeds, incidents (accidents or lane closures), and road conditions. With Advanced Traveler Information Systems (ATIS) information, drivers make informed decisions and are better equipped to plan their route and estimate their travel time. The ultimate solution has a big mandate. Critical features include accuracy, timeliness, and reliability. The ideal solution is an up-to-the minute traffic information system that enables drivers to make more intelligent travel decisions at any time of the day and any day of the week. There is wide scenario of problems, which are specific to India, and indigenous solutions are required to suit its requirement of a cost effective, efficient, reliable and at the same time compatible with the present level of development in the country in the related areas.

LITERATURE REVIEW ON DESIGN A RECUE RAFT FOR FLOODED FLOATING CAR

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ABSTRACT

The raft has a geometry such that it can be positioned around the driven wheels of the vehicle so that the driven wheels can be used to propel the flood rescue raft and vehicle which increases the safety. The flood floating raft can also include inflatable side panel members at the sides of the top and bottom panel members, front and rear inflatable flap members secured to the bottom panel members, and a discrete floatation ballast can be attached to the vehicle floatation raft at the engine end thereof.

The bottom panel member and top panel member hermetically joined to the bottom panel member to form a hermetically sealed air chamber and an air valve is used for filling the air chamber with air. With the help of air compressor, the air is filled in the air chamber. The raft would be multilayer flexible material, with the outer most and inner most layer being rubber plastic based, and a middle layer being a canvas type material.

There is provided an inflatable raft inflated through a single inflation valve. A pair of inflated panels held in place by at least one tie strap connecting the panels rest beneath each end of the bottom of a car to be protected. The cushion has a pair of inflatable end chambers, which when inflated protect the end and side of the car. This is facilitated by internal openings which allow the inflated panel to easily bend underneath the ends of the car and around the corners.

Keywords: Raft, Air Valve, Air Compressor.

INTRODUCTION

The rainy season is one of the worst enemies of the car owner due to flooding we don't want our car to get soaks in flooded water while its running or parked. Flood water causes a lot of car problem that down up long after the vehicle has been submerged. In order to prevent the car from being submerged in this flooded condition we are working on the designing the rescue raft for car under flood condition. Flood effect on different car body styles like, sedan, hatchback, notchback, SUV's etc. but we are making a rescue raft for prototype car.

According to the present invention, a vehicle flotation raft has an inflatable bag which is preferably provided with one or more inflatable Side and end flaps, and a flotation chamber or a ballast for securement to the engine end of the vehicle. The bag is unfolded (except for the end flaps) and slid into position under the car Stationary on the ground or in the water.

A rope attached to the frontend grommets on the bag (and possibly the rear end in moving water) is used to facilitate positioning of the bag under the car or vehicle.

EFFECTS OF FLOOD ON CAR
1. Malfunction in the Electronics and Electrical system.
A vehicle's electronics and electrical parts always sustain most serious damage after flooding. Moisture can cause the short circuit in the electrical system, resulting in malfunction of its critical components, including the following:

- Electrical Control Unit (ECU)
- Headlight, brake lights and other Automotive lights.
- Air conditioning system.
- Power windows, power locks and power seats.
- Fuses
- Anti-lock braking system.

2. Mechanical damage to the engine.
The engine is another critical part of your car that needs atmost attention after its flooded. When flood water reaches engine part like, air intake and cylinder, the piston will try to compress it. Since water doesn't compress it can break the piston rod and lead to engine stalling.

LITERATURE REVIEW ON MEDICAL IMAGING USING MACHINE AND DEEP LEARNING ALGORITHMS

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ABSTRACT

Machine and deep learning algorithms are apace growing in dynamic research of medical imaging. Recently, substantial measures are developed for the enrichment of medical imaging applications to diagnose the errors in disease diagnostic systems which can lead to extraordinarily ambiguous medical treatments. Machine and deep learning algorithms are vital ways in medical imaging for detection of the symptoms in early stages. Deep learning techniques, in specific convolutional networks, have promptly developed a methodology of special for investigating medical images. The supervised or unsupervised algorithms using optimal standard dataset being used to indicate the predictions. We review object detection, image classification, pattern recognition, reasoning etc. concepts in medical imaging. These are used to improve the accuracy through extracting the important features or patterns for the specific disease in medical imaging. These ways also indorse the decision- making procedure. The main aim of this paper is to spotlight the machine learning and deep learning techniques used in medical images. My intention is to provide an outline for researchers to know the existing techniques carried out for medical imaging, spotlight the advantages and disadvantages of these algorithms, and to discuss the future scope. Machine and deep learning are commendable technique for creation of classification and automatic decision making in the study of multi-dimensional medical data. This paper present review of medical imaging in the machine and deep learning methods to analyze distinctive diseases. It carries concern over the suite of these algorithms which can be used for the investigation of diseases and automatic decision- making.

Keywords: Medical imaging; Machine learning; Deep learning; Image enhancement; Information retrieval;

I. INTRODUCTION

Machine and deep learning algorithms play a very important role to train the computer system as a skilled which might be used further for prediction and higher cognitive process. Machine learning is the field of study that provides computers the ability to learn without being explicitly programmed [1]. Deep learning is a kind of machine learning that empowers systems to realize for a fact and comprehend the globe concerning of ideas [2]. These fields bring intelligence into a computer that may extract the patterns according to the particular data and process it for automatic reasoning [3]. Medical imaging is the emerging research area that is used to diagnose any disease for early treatment. The task of image processing in the health domain is relative to the growing position of medical imaging. The digital image processing presents significant effect on decision-making procedure depending on some predictions. It provides better features extraction and accuracy. The procedure of functioning assessment is complex and contains numerous diverse properties [4]. The digital image processing techniques are associated in many different computer systems. The authentication of image processing approaches is very important that gives an implementation of particular procedures which provides influence on the performance of these systems. Therefore, it brings actions and decision based on approaches in medical imaging. It delivers a numerous rudimentary, refined image analysis and visualization tools [5]. The machine learning and deep learning are the integral part of Artificial Intelligence (AI) as shown in *Fig. 1*. The AI is the major field to showcase human intelligence in a machine, machine learning being used to achieve artificial intelligence, while deep learning is a tool used to implement machine learning [6].
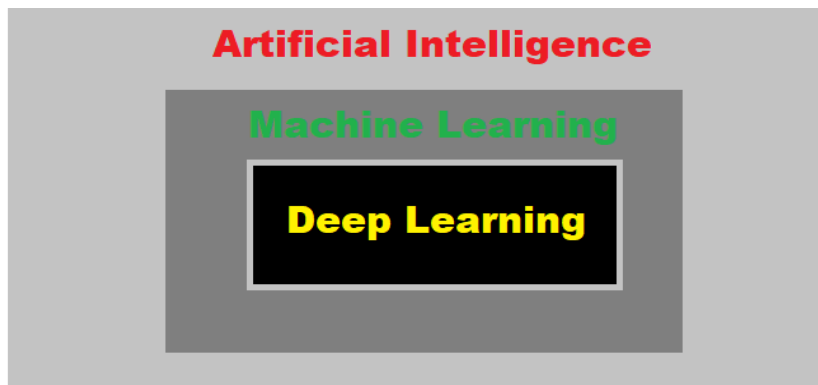

Figure-21*:* Artificial Intelligence, Machine learning and Deep Learning Domain

COMPARSION AND PERFORMANCE OF ROOTED AND SUBMERGED PLANTS FOR MINIMIZATION OF ARSENIC BY PHYTOREMEDIATION TECHNIQUE

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ABSTRACT
Phytoremediation, a green plant-based technology, is a favorable technology for heavy metals pollution caused by inescapable limitations of predictable technologies. The use of some rooted plants and submerged plants in the process of Phytoremediation is more normally known as phyto filtration. The minimization of arsenic (As) by rooted plants, such asColocasia, Cannaindica, and submerged plants such as Pistia stratiotes, Water hyacinths (Eichhorniacrassipes), etc. Thus a hugequantity of water having arsenic can be minimizing of arsenic by this technology by economically. The ornamental plants collect high concentration of arsenic in their roots, trunks and tissues. This work is intended to examine the arsenic based water and to develop the operative and economically low cost method for minimization of arsenic from water. Here the suitability of plants to minimization of arsenic and compared by two types of plants such as rooted plants and submerged plants. In which arsenic contained water is passed through the rooted plants as well as submerged aquatic weeds. The suitability of plants to minimize the arsenic depends upon holding time and velocity of water flow which passes from one end to other end of the container. In India some determinations has been focused to regulate the water pollution and to make minimization of arsenic and free from chronic disease.

INTRODUCTION
The water is a basic necessity of human and animal life. These are the main consumption of human beings well as animals. The water is one which plays important role in metabolism of living body. Water is required for the variation of functions like regulation a body temperature, solvent and vehicle for transportation of nutrients and salts required for body through the vascular system and through the inter and intracellular space and to carry away in the form removal out of body. The nontoxic and drinkable water for the public is major problem all over the world .The U.N had declared the 1980 as the year of international drinking water supply and sanitation decade (IDWSSD) during the U.N. Conference in Mar del Plata, Argentina in1977.Water indented for human consuming should safe and good for human health. W.H.O defined ―health is a state of complete physical, mental and social well-being and not purely an absence of diseases or illness. The nontoxic water is one which cannot harm users when it used for long period. In this trial effort it is to find out that the minimization or eliminate concentration of arsenic by the phytoremediation technique monitoring the performance of rooted as well as submerged plants.

Phytoremediation is a technology, has expected growing helpfulness after the find of hyper accumulating plants which are able to accumulate, translocation, and concentrate high amount of certain toxic contaminants in rooted plants. Phytoremediation includes several processes namely, phytoextraction, phytodegradation, rhizofiltration, phytostabilisation and phytovolatilization. Both rooted and submerged plants have been tried to remediate arsenic based soils and waters, respectively. A number of submerged plant species have been examined for the remediation of toxic heavy metals such as As, Zn, Cd, Cu, Pb, Cr, Hg, etc. Arsenic, is the poisonous toxic element, is commonly spread in the aquatic systems which is produce from earth crushed displacement, volcanic or sedimentary rocks as well as from the dilution of geothermal waters. Some aquatic plants have been reported to accumulate high level of arsenic from contaminated water [1].Water hyacinth (Eichhorniacrassipes), Pistiastratiotes, Colocasia esculenta Canna Indica, have been studied to examine their arsenic uptake ability and mechanisms, and to evaluate their potential in phytoremediation technology [1]. It has been suggested that the aquatic weeds would be possible for arsenic phytoremediation, and this study reviews the knowledge on arsenic phytoremediation by common aquatic weeds.

OBJECTIVES OF WORK
1. To Minimization of arsenic from water by phytoremediation technique.

2. To Comparison between rooted and submerged plants for elimination of arsenic.

3. To understanding of potential of aquatic weeds.

4. To remove the arsenic by economically.

RECOVERY OF WASTE HEAT USING HEAT EXCHANGER

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ABSTRACT
The paper considered a review for the design of a shell and tube heat exchanger. Therein, popular analytical techniques such as log mean temperature difference (LMTD) and effectiveness-number of transfer units (ε-NTU) were considered in the analysis. In the design, analysis, performance charts and tables describing the performance of the shell and tube heat exchanger in terms of crucial dimensionless parameters were developed. These fundamental dimensionless parameters account for the thermal & the physical properties of the fluids and the heat exchanger (HX) material. Using the information from the performance charts and tables, a basic design for the shell and tube heat exchanger can be readily formulated. The basic design involves choosing an appropriate number of transfer units (NTU) and capacity rate ratio for a given application. The NTU and capacity rate ratio can then be extrapolated to develop a detailed design for the shell and tube heat exchanger. Since NTU and capacity rate ratio accounts for all the significant physical and thermal properties of the heat exchanger, performance tables and charts would certainly help in maximizing the performance and minimizing the cost of the shell and tube heat exchanger. In the case considered here in, both LMTD and ε- NTU techniques yield the same exact results.

I. INTRODUCTION
Heat exchangers are widely used in manufacturing and process industries for several applications. The choice of heat exchanger for a given application is dependent on several factors such as the application, available floor area, available resources, connections in the field, cost, and many more. In a highly competitive environment, it is essential that the heat exchanger must deliver the required heat transfer, occupy less space, weigh less, and yet be priced competitively. In this project, a shell and tube heat exchanger is designed for and steam is the heating medium. The heat exchanger shall be designed such that the hot oil flows through the tubes and steam through the shell side of the heat exchanger. It is assumed that large steam flow rate is available to provide the required heating for the hot oil in the shell and tube heat exchanger. A conventional ε-NTU approach and LMTD approach shall be used to design the shell and tube heat exchanger. Performance tables and charts describing the variation of shell heating hot oil. Hot oil is used for a certain process heating application and tube heat exchanger's performance with respect to capacity rate ratio and NTU were developed. Dimensionless parameters such as capacity rate ratio and NTU provide concise information on the heat exchanger as they account for material characteristics, flow characteristics, physical and thermal properties, construction and fouling. Likewise, the developed tables and charts can also be employed during the regular working phase of the shell and tube heat exchanger to understand its performance and There are numerous references available in the literature pertaining to heat exchanger performance modelling, and only the most pertinent studies are discussed. There are numerous references available in the literature pertaining to heat exchanger performance modelling, and only the most pertinent studies are discussed in this manuscript.

II. LITERATURE SURVEY
Dawit Bogale-2014 [1] : Dawit Bogale conducted a experiment on shell and tube heat exchangers showing optimization and redesign of the machine is done for both mechanical and thermal designs and the simulation for the heat transfer between the two fluid is analyzed using the concept of CFD (Computational Fluid Dynamics) using Gambit and Fluent software's. The final result of the STHEx in HBSC which is the redesigned STHEX can achieve or efficiently work to achieve the required outlet temperature 340℃ the temp at which the beer is ready for customer for use.

Vindhya Vasiny Prasad Dubey, Raj Rajat Verma-2014 [2]: Dubey and Verma conducted a Performance Analysis of Shell & Tube Type Heat Exchanger under the Effect of Varied Operating Conditions and concluded that It may be said that the insulation is a good tool to increase the rate of heat transfer if used properly well below the level of critical thickness. Amongst the used materials the cotton wool and the tape have given the best values of effectiveness. Moreover the effectiveness of the heat exchanger also depends upon the value of turbulence provided. However it is also seen that there does not exists direct relation between the turbulence and effectiveness and effectiveness attains its peak at some intermediate value. The ambient conditions for which the heat exchanger was tested do not show any significant effect over the heat exchanger's performance.

JAY J. BHAVSAR, V K. MATAWALA-2013 [3]: The previous works carried out by different authors were limited to helical coil heat exchanger and spiral plate heat exchanger. The spiral tube heat exchanger is compact

NATURAL LANGUAGE PROCESSING A NEW ACHIEVEMENT IN TECHNOLOGY

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ABSTRACT

The main purpose of this paper is to examine some (potential) applications of Natural Language Processing in our day-to-day life. For the readers who are not familiar with or less known to the world of Natural Language Processing. We hope that this paper will be a useful map for researchers who are going to explore further and deeper connections in Natural Language Processing, although some parts of the map are very rough and other parts are empty, and waiting for the readers to fill in.

Keywords: - Quantum Entanglement, Superposition Principle, Bells Measurement, Bells State

INTRODUCTION

Natural Language Process is understanding the human language. Natural Language Process also shorthand as NLP is a subfield of Artificial Intelligence. As its name implies it is all about processing the natural language that humans use. NLP makes the machine communicate with humans as the way humans communicate with each other using Natural Language. NLP is a way for the device to analyze, understand, and extract meaning from human language. By utilizing NLP, developers can organize and structure knowledge to perform tasks such as automatic summarization, translation, named entity recognition, relationship extraction, sentiment analysis, speech recognition, and topic segmentation. Natural language processing (NLP). NLP draws from many disciplines, including computer science and computational linguistics, in its pursuit to fill the gap between human communication and computer understanding.
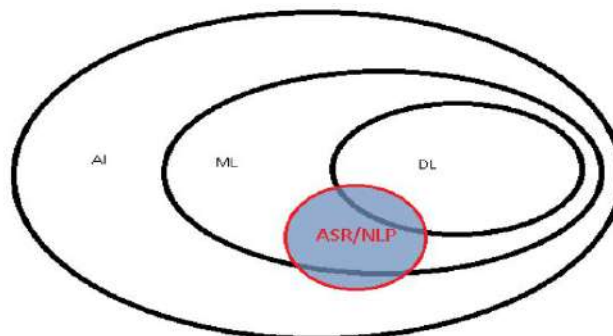
HISTORY

The founding idea was to model highly successful psychotherapists. Richard Bandler and John Grinder started this as the basis of NLP around 1972 with modeling Fritz Perls (Gestalt Therapy), Virginia Satir (Systemic Family Therapy) and Milton Erickson (Hypnotherapy). Abraham Maslow already had this founding idea around 1943 when studying "Self-Actualization" and modeling about 60 "Self-Realized" people. The history of natural language processing (NLP) generally started in the 1950s, although work can be found from earlier periods. In 1950, Alan Turing published an article titled "Computing Machinery and Intelligence" which proposed what is now called the Turing test as a criterion of intelligence

During the 1970s, many programmers began to write "conceptual ontologies", which structured real-world information into computer-understandable data. Up to the 1980s, most natural language processing systems were based on complex sets of hand-written rules. Starting in the late 1980s, however, there was a revolution in natural language processing with the introduction of machine learning algorithms for language processing.

In the 2010s, representation learning and deep neural network-style machine learning methods became widespread in natural language processing, due in part to a flurry of results showing that such techniques can achieve state-of-the-art results in many natural language tasks, for example in language modeling, parsing, and many others.

WORKING

NLP has two components one is understanding the natural language and another is to respond using natural language. Formerly called NLU (Natural Language Understanding) and NLG (Natural Language Generation) respectively. NLU takes input and processes the data and generates meaning. After getting meaning machine

NEED OF HUMAN VALUES FOR THE EMPLOYEES IN THE WORKPLACE

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ABSTRACT

The present paper focuses on the employment ability skills among the students of Engineering and Management.To stay with this present scenario one has to cope with the business abilities. One has to depend on one or the other earnings as it has become hectic to get his or her bread and butter.It is not an easy task to earn bread and butter.For these only being physically strong is not enough, one should have any kind of profession in hand so that the life can be easily led forward.To fit in today's world one has to follow some skills in their workplaces which are very much required.Some abilities are must to have in business field. The abilities and skills that are to be followed in the work premises are called Employability skills.In this paper, we will discuss on the communicative english,one of the employment skills for the students of Engineering and Management.Communicative english plays a vital role in every field of life.These skills are to be taught to the students in their academics, so that it helps to get them good jobs and to retain the job that is already in their hands.The confidence level how they carry themselves along the status should become habitual. To make it habitual one has to practice in their academic learning process.

INTRODUCTION

In this contemporary global arena communication skills plays a key role.There is a lot of demand in work places.There are four important skills which can lead to achieve the key of success.They are-Listening, Speaking , Reading, and Writing. Most of the companies prefer candidates who are good in these skills.The managers of the companies always look for employees who have a manner of appealing in english. The employees should have good written communication.they have to maintain documentation without any grammatical mistakes.They also prefer a person one who has an ability to cope with his colleagues.There are so many other skills that are to be acquired by the employers to generate a positive environment.Let us see one by one the essentials is communication skills in the workplace,which is nothing but employability skills.

ENGLISH COMMUNICATION SKILLS

Every living being tends to communicate using verbal or non verbal cues.Most of the people make mistakes while communicating eachother.Now a days people communicate to explore innovative things implementing new ideas.Still the importance of this skill is not clear in the minds of the illiterate parents what their wards need in future.English language is a borrower, it never stands on its own.Everyday new words are getting added to the dictionary. The person specialized in this field also should upgrade to reach to the particular level.Even in workplace we should follow some concepts.Some highlighted concepts are as follows:

OPEN MINDEDNESS

One should always think positive.The culture of positive communication leads to resolve some misunderstandings among the employees.It also helps to resolve some conflicts by positive approach.One should be ready to accept the feedback and move forward.The open mindedness leads to bring forth the productivity. It also builds a creative mind to think divergently.It strengthens the bondage among each other.Team work always leads to implement innovative ideas to progress.The project work assigned will be completed in the stipulated time given.

CLARITY

While communicating with each other, one should be more conscious about the words they use.Poor communication may lead to misunderstanding.Do not swallow or express the words in low voice.The words used should be simple, so that the person communicating with you should easily grab the message that you want to transmit.Be clear in expressing your thoughts and ideas.Analyse your words whether the word used is proper according to that particular situation.Always pay attention to the words that you choose.Sometimes you have repeat the messages to make your communication clear.

SELF ESTEEM

Give respect to the co-workers and obviously you gain respect.One should know how to handle his/her qualities.The behaviour of a person carries their own personality.Mutual respect leads to good working environment. Today's generation people are highly aggressive and adopt negative way of approach.Being calm makes the work to go on in a very smooth manner.One should lead as a leader,and make others to follow him/her.For that the qualities that we possess should be admired.One should be a role model.Respect comes

EXPERIMENTAL INVESTIGATION OF RADIATOR SYSTEM FOR A STATIONARY C. I. ENGINE

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ABSTRACT

The radiator is an essential adornment of vehicle motor. Typically, it is utilized as a cooling arrangement of the motor and by and large water is the warmth exchange medium. For this fluid cooled framework, the waste warmth is evacuated by means of the circling coolant encompassing the gadgets or entering the cooling diverts in gadgets. In this paper different techniques for radiator execution assessment and testing of the radiator are considered in light of the fact that all inner ignition motors produce heat as a by result of burning and rubbing. This warmth can achieve temperatures up to 1925°C (3500°F) and can have disastrous effects on motor parts. Inner burning motors are fitted with a cooling framework which is in charge of expelling certain warmth from the motor and keeps the motor from overheating. This cooling framework requires an extensive space to address cooling issue furthermore have constrained warmth dispersal. Car radiator is key segment of motor cooling framework. Radiator warm investigation comprise measuring and rating of warmth exchanger. Radiator estimate for the most part relies on upon warmth dismissal prerequisite. Heat exchange estimations are imperative essentials to enhance radiator size. In this study, Ethylene glycol (EG) and Ethanediol with aliphatic added substances blended with refined water in different proportions as traditional coolant have been utilized as a part of car auto radiator. These warmth exchange liquid have low warm conductivity. In this Experimental study introduced the blend Ethylene glycol + water utilized as a part of auto radiator. General warmth exchange rate have been spoken to in the present work.

Keywords: Car radiator, Engine Cooling, Efficiency, Coolants etc.

I. INTRODUCTION

Today, the interest of car vehicles is on top. There is a considerable measure of rivalry existing between car commercial ventures. In this way, it is an incredible test for car commercial enterprises to give a proficient and prudent motor. There are different elements influencing the productivity of motor specifically, fuel supply frameworks, Lubrication framework, Transmission framework, Cooling framework, Climatic conditions, Size of chamber head, Ignition timing. Here cooling parameter is taken into thought and investigates are finished. The warmth produced amid burning in IC motor ought to be kept up at more elevated amount to expand warm effectiveness, however to keep the warm harm some warmth ought to expel from the motor. In air-cooled motor, augmented surfaces called balances are given at the fringe of motor chamber to build heat exchange rate. However, these days because of different enhancements in car field, enhanced cooling frameworks are utilized as a part of vehicles to expand the warmth exchange rate .They are examine bellows.

II. LITERATURE SURVEY

Yiding Cao and KhokiatKengskool [1], had gave utilization of the warmth channel in a car motor was presented. In this application, heat funnels were fused into the radiator of the car motor for more productive warmth exchange. The cooling heap of the radiator can be expanded for overwhelming obligation motors, while the force utilization of the cooling fan can be diminished for higher vitality productivity. Heat channels including two-stage shut thermo siphon were two-stage heat exchange gadgets with a viable warm conductance many times higher than that of copper. For the physical applications, gravity was regularly used to right hand the arrival of the fluid condensate and no wick structure was required inside the warmth channel. A little measure of working fluid was filled in a tube.

Hwa-Ming Nieh, Tun-Ping Teng, Chao-Chieh Yu [2], This study receives an alumina (Al2O3) and titanium (TiO2) Nano-coolant to upgrade the warmth scattering execution of an air-cooled radiator. The two-stage combination strategy is utilized to deliver diverse convergences of Al2O3 and TiO2/water (W) Nano liquid by utilizing a 0.2 wt. % chitosan dispersant, and the Nano liquid is blended with ethylene glycol (EG) at a 1:1 volume proportion to frame NC1 to NC6(Nano Coolant). The investigations were led to gauge the warm conductivity, thickness, and particular warmth of the NC with various convergences of nanoparticles and test temperatures, and after that the NC was utilized as a part of an air-cooled radiator to assess its warmth scattering limit, weight drop, and pumping power under various volumetric stream rates and warming temperatures. The test results demonstrate that the warmth dissemination limit and the EF of NC are higher than EG/W, and that the TiO2 NC are higher than Al2O3 NC in the vast majority of the trial information. The upgraded rate of the normal EF increments as the fixation and volumetric stream rate of the TiO2 NC increments. sort of compartment. Air was emptied from the compartment and the holder was fixed. Warmth was connected to the

OBSTACLE DETECTION AND RECOGNITION WITH MACHINE LEARNING FOR BLIND USING SMART SHOES

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ABSTRACT
The paper presents an Intelligent Shoes for the visually impaired or the blind one which detects the obstacles as well as identifies it with the use of machine learning and will help the blind to exactly know what obstacles are present in front. The shoes are designed in such a way that it can be charged automatically as you move on. The shoes consist of different sensors embedded in it which will detect the obstacles, identify it and calculate the distance between the user and the obstacle. An Android application is developed which connects to the shoes using Bluetooth will specify the shortest route using maps. As soon as the obstacles are detected the shoes vibrates and send signals which is then converted into speech and voice commands are generated.

Keywords: Blind; Shoes; Navigation; User; Camcorder; Machine Learning; Obstacles; Sensors; Pico; Route.

I. INTRODUCTION

The world consists of more than 1.3 billion people which are visually impaired among which around 36 million are totally blind. 80% of all vision impairment is considered avoidable globally. Vision impairment is majorly caused after the age of 50 years and above. Most of these worlds visually impaired lives in the developing countries. Still people use the traditional white and red color cane for navigation.

Since blind ones are the part of world they are been treated with sympathy and pity are shown upon them but still they can't be helped out but with increase in the technology in day to day life some of the technology can be used for the blind one. The technologies will help them for making the impossible to possible. Communication with the environment for the blind can be the greatest advantage. Thus entertainment and comfort increases with the decrease in the stress, inferiority, grief, and distress. In order to communicate to the environment such people can stand up with the latest technologies. For people living in Developing countries it is quite possible to adapt such technologies. Adaptation of such technologies will enhance the life of the visually impaired one.

So, it is high time to replace such traditional equipment's with the latest technologies which may lead to great innovation in the life of the people. It can avoid unfortunate deaths caused due to accidents which may vary according to different situations and save their precious lives.

These intelligent shoes will drive the user to its relevant paths and will carry you to the destination without major challenges that blind people actually faces. It will not completely change or clear out all the difficulties, but it can change the way of living of blind person up to a great extent.

II. INTELLIGENT SHOES

A. Detection of obstacles

Obstacles may vary according to the environment and situations. It might consist of Stones, Speed breaker, Vehicles, walls, trees and many much more. The Obstacle may be a person coming towards the user. There are various Sensors to detect obstacles coming in front such as Ultrasonic sensor, Infrared Sensor etc. The sensor used in our project is a high range Ultrasonic sensor

The Ultrasonic sensor is placed in front of the shoes where it can detect the Obstacles coming or stable (constant) and can Measure the distance between the obstacle and the shoes. As obstacles are detected the data is sent to the Android app where it converts the Data from Text to speech by speech recognition libraries in Python. The user can communicate to its shoes as well as android app via a Bluetooth so voice commands are sent to the user which may allow him/her to get aside or change its route

As the shoes moves through its way Ultrasonic sensor CH-101 is assembled in the shoes. Non-intrusive property of Ultrasonic sensors allows them where physical contact with their target is not at all required. The properties of acoustic waves with frequencies above often at roughly 40 kHz i.e. the human audible range is measured by Ultrasonic sensors. High-frequency pulses of sound are generated on which these sensors operate then receiving and evaluating the properties of the echo pulse.

LITERATURE REVIEW ON DESIGN AND FABRICATION OF PATH FOLLOWING CART

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ABSTRACT

In every field, industrial automation is increasing day by day. The labor cost and the processing time taken by the human is being reduced by industries. Hence, the proposed project is useful for carrying and transporting the materials efficiently with less consumption of time.

The following path following cart is a small wheeled robot which will follow the user and will have a surface on which to conventionally place heavy objects. The present condition in the industries is that they are using the crane system to carry the transportation of goods from one place to another. Sometimes the lifting of big weights may cause the breakage of lifting materials and will also cause damage to the goods too. A line follower cart is an electronic system that can trace and follow the line of the desired path. Generally, the line is specified a predefined path that can be either visible like a black line on a white surface with a high contrasted color.

This technology is focused on the delivery of safe, timely, efficient and easier transportation in the industries. However, this cart could be adapted towards other purposes, such as carrying suitcases on airports for those who have a lot of luggage and also used in malls for carrying goods and other products for the costumers.

Keywords: cart, design and fabrication, path follower, sensor.

INTRODUCTION

In the automotive production carts accomplish the more are the castoff in small, regularly self-contained, segments of the construction lines. Humans are still mandatory to draw mechanisms from granaries and, in some circumstances, shift incompletely accumulated products segments amongst the stations on the production line. Line follower carts are used in semi to fully automated plants. In this environment the cart functions as carrier to deliver products from one manufacturing point to another, where rail, conveyor and gantry systems are not a suitable option. There are many rooms such as store house or warehouse, different workshops, and also some inventories for holding o carrying the finished or partly finished goods. A lot of workers cause the high labor cost for the owner. Some workers have to work there for machining this raw material that are inevitable. The line follower is a self- operating cart that detects and follows the line that is drawn on the floor.

DESIGN AND FABRICATION

Main Components of Line Follower Cart:

1. Sensors
2. Analog to Digital convertor
3. Comparator
4. Motor Drive
5. Actuators [Motor and wheels]
6. Arduino Uno
7. Chassis and Body structure
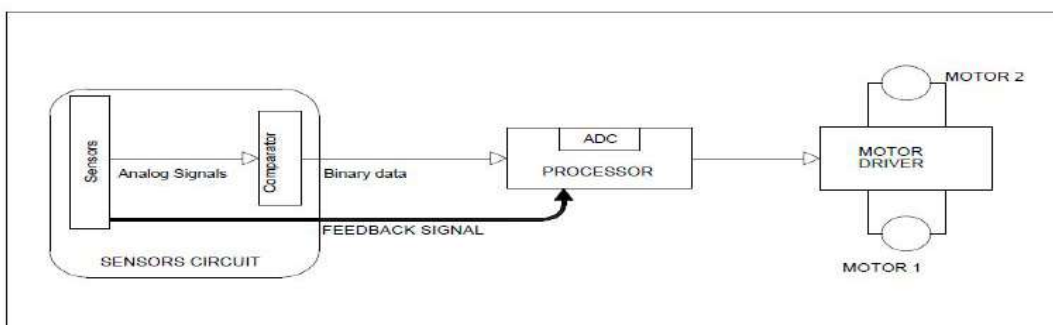8. Power supply

BLOCK DIAGRAM

Figure-1.1: Block Diagram

QUANTUM COMMUNICATION - HACK PROOF COMMUNICATION TECHNOLOGY

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ABSTRACT

The main purpose of this paper is to examine some (potential) applications of quantum computing in quantum based secure communication. For the readers who are not familiar with quantum communication. We hope that this paper will be a useful map for researchers who are going to explore further and deeper connections in quantum computation as well as quantum theory although some parts of the map are very rough and other parts are empty, and waiting for the readers to fill in.

Keywords: Quantum Entanglement, Superposition Principle, Bells Measurement, Bells State

INTRODUCTION
Quantum communication is the art of transferring a quantum state from one place to another in other words we can say it quantum teleportation, With the help of Quantum communication we can teleport a photon from one place to another. Quantum communication is the most secured way of communication. Quantum communication doesn't makes faster than light communication successful & does not break any rules of Einstein's Theory of Relativity but it appears that's way so Einstein termed it's 'spooky action at a distance'.

HISTORY
Traditionally peoples use to transmit a secured message with stenography technique were they use to make a man blad and write a message on his head and wait until the hair grew up and then send him to the receiver and then receiver removes his head which was quite lengthy process.

Then we developed the communication medium

In October 29, 1969 the first message was sent over the internet. So let us explain just how difficult it in the evening researchers had gathered down in Los Angeles at Stanford research institute to send the first test message and they had agreed to send the message "login" looking into a remote computer because this was challenging they called each other on the phone make sure message arrived they type the first letter "L" and they asked on the phone did you see the L and excited message comes back "yes, yes, we see the L and they typed the second letter "O" and asked again did you see the O and he said "yes we also see the O" and they typed the letter G and the system crashed but any how they recover it and again sent the full message, and now we send a lot. Now we had to revolutionize the world by quantum Internet which is the most secured, fastest & perfect way of communication.

HANDS-ON QUANTUM PHYSICS
Quantum physics is a branch of science which deals sub atomic particles like electrons protons & neutrons and study there properties.

Quantum physics is the weird because it tells how a basic elementary particles like electrons change their nature when they had been observed that is wave to particle double slit experiment is a proof of it.
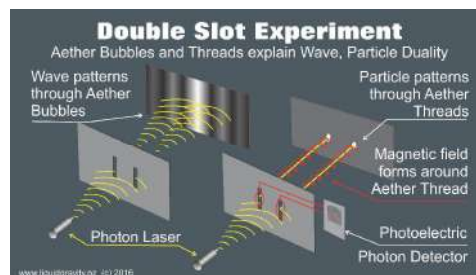

Figure-1: Double Slit Experiment [1]

In double slit experiment the electrons are fired from an electron gun in a slit which have to vertical holes. If the process has been observed or monitored then we get a single interference pattern as indicate a particles behavior, but if the experiment doesn't monitored then we get multiple interference pattern on the wall which shows the wave behavior.

This Experiment put the whole world in shock how that when we doesn't observe anything the actually.

RECENT TRENDS IN MILD HYBRID VEHICLES (AN OVERVIEW)

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ABSTRACT

Introduction of electric vehicles (EVs) signals the beginning of the end for traditional engine vehicles. The major motivators for shifting to EVs are the need for reducing polluting engine emissions and reducing dependence on costly oil fuels. The growing acceptance of EVs is the outcome of several factors: technological advancements, rising storage capacity of traction batteries coupled with their falling costs, increased public charging facilities and Govt. incentives.

The impact of automobiles on the environment is increasing day by day such that its becoming one of the social issue day by day. In to protect the future from Air pollution, alternate Technologies like Electric Vehicles, Hybrid Vehicles, are required and introduced. Many studies have been done on hybrid vehicles in recent years. The hybrid vehicles need a large number of batteries creating up to 300V to meet the required voltage of electric motor. The size and weight of the batteries cause some problems. This research investigates the mild hybrid vehicle. A small electric motor, which can operate as engine starter, generator is located between the engines energy is generated using regenerative braking. The present study evaluates the properties of the mild hybrid vehicle, its structure and performance and proposes an energy control model for its optimum operation.

Keywords: Mild Hybrid Electric Vehicles, Air Quality, Development of MHEV, Challenges and Advantages of Mild Hybrid.

INTRODUCTION

The first hybrid vehicle reported was shown at the Paris Salon of 1899. These were built by Pieper establishments of Liege, Belgium and by the Vendovelli and Priestly Electric Carriage Company, France. In addition to being one of the two hybrid vehicle, and being the first parallel hybrid vehicle, the Pieper was undoubtedly the first electric starter.

However, the greatest problem that early designs had to cope with was the difficulty of controlling the electric machine. Power electronics did not become available until the mid-1960s and early electric motors were controlled by mechanical switches and resistors.

Toyota released the Prius sedan in Japan. Honda also released its insight and Civic Hybrid. They achieved excellent figures of fuel consumptions. Toyota Prius and Honda Insight vehicles have ahistorical value in that they are the first hybrid vehicles commercialized in the modern era to respond to the problem of personal vehicle fuel consumption.

The first electric vehicle powered by non-rechargeable batteries was built in 1834, much before the development of IC Engines. Electric vehicles were very popular during the 1890 to 1920 period despite their very high cost. In 1912, EVs have reached their prime, making up nearly 28% of the cars on the road. [22]

Compared with conventional vehicle, hybrid electric vehicle (HEV) is more complex because of their multi-power source. HEV has the advantages of low emission and fuel consumption. Mild Hybrid Vehicle is one of HEV which equips with low power traction motor.

In 2011, five German car makers announced that they will introduce 48V system into their cars. The powertrain of the next decade is being defined through 48V. The 48V system bridges the gap which allows Start/Stop performance that far outstrips existing pure 12V architecture system which enables the blending of electrical motors to be used to alleviate the transient response problems of larger turbochargers while enabling their optimization. All of these solutions and many more potential applications both improved CO2 performance and eventually reduce cost though making unnecessary the inherent complexity of today's 12V solutions. Managing the development and introduction of 48V systems is not without some significant engineering challenges, but it is the gateway to the kind of energy efficiency needed by OEMs to meet forthcoming emissions challenges and the aspirations of customers. [4]

Mild hybrid vehicle does not have major differences with full hybrid vehicles in terms of hardware but, it can be different in terms of control algorithm. In other words, mild hybrid vehicle is in fact a hybrid vehicle with a lower degree of hybridization (about 15%). In this vehicle, the scale size of the electric driving force component

SELF-CHARGING CAR

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ABSTRACT

The natural resource (crude oil) is getting vanished slowly and also in future it is possible that it will be completely finished. We know that crude oil is the main source of petrol and as crude oil is being vanished, petrol will not be produced in future. So, the alternate solution for this problem is the E-Vehicle. But E-Vehicle needs batteries to run the vehicle. Due to that reason, everybody is not able to afford this type of vehicle. So we have over come from a problem of battery discharging. But E-Vehicle contains more weight other than the self-charging system and the passenger's weight. The concept of self-charging car is that it will charge your car's battery with the help of dynamo. As the dynamo will start rotating, it will produce electric charge. Due to direct connection of dynamo with the car battery, it will start charging the battery.

Keywords: Crude Oil, Vanished, Petrol, E-Vehicle

I. INTRODUCTION

The natural resource to generate the petrol which is the fuel used in vehicle is crude oil and we all know that crude oil is being running out slowly. Due to running out of crude oil, it is not possible to generate petrol for vehicle. So, we have an alternate solution for this problem which is E-Vehicle. But the negative point of this E-Vehicle is that it requires charging for the vehicle and it takes hours-and-hours to charge the vehicle from empty-to-full. So, for that problem we came here with an alternate solution which is self-charging car. The reason to use this system is that we can cover more distance we want.

We can travel as much distance we want and there will be no problem for battery drainage. This was the main reason that everybody was not able to afford the E-Vehicle. After using this self-charging system the cost of the E-Vehicle will reduce to some extent. The car will also help to reduce the pollution and also will help to reduce and control the pollution.

With the help of E-Vehicle we are able to reduce the noise pollution generated from the petrol fuelled vehicles.

Fig-1: Prototype of Self-charging Car.

According to our concept the wind energy will be converted into electrical energy and then electrical energy will be converted into mechanical energy. The component required to convert wind energy into electrical energy is the dynamo. The dynamo will be placed or kept at the front side of the car. The dynamo will rotate with the help of air which will be generated when the car will start moving.

II. WORKING OF COMPONENTS

We are going to use the dynamo or the alternator to charge the battery. The alternator is the device that is used to convert wind energy into electrical energy. Due to this quality of alternator it becomes the second main component of the car because the first main component is the motor. The alternator can generate upto 24V which is more than enough to keep the battery fully charged. We are also using a battery for movement of the vehicle. A battery is the component which will provide the required power to the motor. A battery is a device which will produce electrons and will also supply them to the motor and the motor will start rotating. The battery of an electric car runs out within 100,000 miles but after installing the self-charging system the battery will last more than 100,000 miles which will help to reduce the electricity cost.

SMART AUTOMATED IRRIGATION SYSTEM WITH DISEASE PREDICTION

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ABSTRACT

The advancement in Internet of Things (IOT) through which we can connect real world objects to obtain the information such as physical phenomenon through sensors in the field of agriculture. This paper reports on the smart automated irrigation system with disease detection. The system design includes soil moisture sensors, temperature sensors, leaf wetness sensors deployed in agriculture field, the sensed data from sensors will be compared with pre-determined threshold values of various soil and specific crops. The deployed sensors data are fed to the Arduino Uno processor which is linked to the data center wirelessly via GSM module. The data received by the data center is stored to perform data analysis using data mining technique such as Markov model to detect the possible disease for that condition. Finally, the results and observed physical parameters are transmitted to Android smart phone and displayed on user interface. The user interface in smart phone allows remote user to control irrigation system by switching, on and off, the motor pump by the Arduino based on the commands from the Android smart phone.

Keywords: Disease detection, precision agriculture, IOT, Hidden Markov model, Sensors.

INTRODUCTION

India is an agriculture focused on country with more than 60 percent of population depends directly or indirectly on agriculture. 80% of our country's GDP is added by agriculture. As per the recent approximation India would require more than 450 million tons of food grains to feed 1.65 billion people by the end of 2050 which will be a huge task. Although no exact estimates on total crop loss due to insect, disease and weeds could be found and it approximately ranges from 10-30% loss on farm field [1]. In terms of monitory values, $12 billion accounts due to stress on biotic factors. As a result of diversified agro-echo system, a huge number of crops grown in India often serves as host to many different kinds of insects, pests and pathogens. In India, most of the regions are subtropical to tropical, the agro climate is more conducive for the development of insect pests. Lepidopteran, coleopteran and dipteran insect pests cause severe yield losses in many of the commercial crops grown all over India.

Along with biotic there are some abiotic conditions like temperature, moisture, light etc., which leads to loss in agriculture. Although, India stands at second place in largest irrigated country of the world after China, only one third of the agricultural area is irrigated. Irrigation plays a major role in tropical monsoon country like India where rain is uncertain, unreliable and erratic [1]. However, care must be taken to safeguard against effects caused by over irrigation. To overcome all the above problem, IOT technology can be implemented. IOT is an emerging trend which has its application in all the fields. It can be referred to as "connected devices".
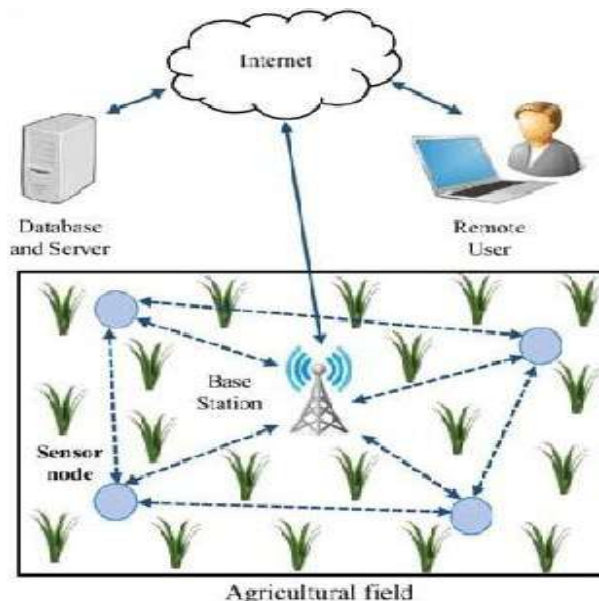

Fig-1: Architecture of Precision Agriculture

SMART ENERGY METERING SYSTEM

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ABSTRACT

An automatic remote meter-reading system based on GSM is presented in this paper. The paper is useful to obtain meter reading when desired so meter readers don't need to visit each customer for the consumed energy data collection and to distribute the bill slips. Microcontroller can be used to monitor and record the meter readings. In case of a customer defaulter, no need to end a person of utility to cut-off the customer connection. Utility can cut off and reconnect the customer connection by short message service (SMS). Furthermore, the customer can check the status of electricity (load) from anywhere. In this system energy meter readings are being transferred by making use of GSM.

INTRODUCTION

In the present billing system the distribution companies are unable to keep track of the changing maximum demand of consumers. The consumer is facing problems like receiving due bills for bills that have already been paid as well as poor reliability of electricity supply and quality even if bills are paid regularly. The remedy for all these problems is to keep track of the consumers load on timely basis, which will held to assure accurate billing, track maximum demand and to detect threshold value. These are all the features to be taken into account for designing an efficient energy billing system.

The present project "IoT Based Smart Energy Meter" addresses the problems faced by both the consumers and the distribution companies. The paper mainly deals with smart energy meter, which utilizes the features of embedded systems i.e. combination of hardware and software in order to implement desired functionality. The paper discusses comparison of Arduino and other controllers, and the application of GSM and Wi-Fi modems to introduce 'Smart' concept. With the use of GSM modem the consumer as well as service provider will get the used energy reading with the respective amount, Consumers will even get notification in the form text through GSM when they are about to reach their threshold value, that they have set. Also with the help of Wi-Fi modem the consumer can monitor his consumed reading and can set the threshold value through webpage.

This system enables the electricity department to read the meter readings monthly without a person visiting each house. This can be achieved by the use of Arduino unit that continuously monitor and records the energy meter reading in its permanent (non-volatile) memory location. This system continuously records the reading and the live meter reading can be displayed on webpage to the consumer on request. This system also can be used to disconnect the power supply of the house when needed.

1.1 MOTIVATION

Utility billing is yet unavoidable in the World as for concern post-paid energy meter. In Pakistan, utilities are using a conventional way of billing. A meter reader goes Home to home takes the meter reading and note down it, manually. These readings are brought to utility administration office. The criterion of utility billing is applied according to the utility service rules and regulations. The employee of the utility goes door to door again and gave the bill slips of the utility to the respective consumer.

Smart energy meter are used for Automatic Meter Reading (AMR) to increase the accuracy of meter reading. For instance, a utility person might not read the correct value of the total energy consumed that is displayed on energy meter or may intentionally give lower value than the exactly read one.

1.2 PROBLEM STATEMENT

Energy meter reading is a tedious and an expensive affair. The meter reader has to go and take the reading manually to issue the bill, which will later be entered in the software to automate the billing and payment system. It would have reduced the laborious task and financial wastage if can automate the manual meter reading process and bill data entry process.

1.3 OBJECTIVE

Smart meters provide data that enable customers to make choices about how much energy they use by allowing them to access accurate real-time information about their electricity consumption.

Unlike the old meters they replace, smart meters are up to date two-way, digital communication systems that record electricity usage every 30 minutes and automatically send this data to a customer's electricity distributor, virtually bringing an end to estimated bills and manual meter readings.

SQL DATABASE AND NOSQL DATABASE COMPARISON

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ABSTRACT

SQL Database is a Relational Database and Structured Database.SQL is the standard language for Relational Database and it also used to perform various operations such as Insertion, updation and manipulation of data from Relational Database.SQL has properties like Atomicity, Consistency, Isolation, Durability to maintain data integrity and data consistency.SQL is essentially declarative language, it also include procedural elements. NoSQL, which is stands for not only SQL, it is used for working with large sets of distributed data.It is not a Relational Database as it is not built in tables. Relational Database Model may not be best solution for all the situations then we can use NoSQL to get best solutions for that situation. It also may not provide Atomicity, Consistency, Isolation and Durability [ACID] properties to the database. NoSQL gives high performance with high availability and high scalability. NoSQL also offers rich query language than SQL. It is simple to implement and does not requires high performance server. NoSQL can handle structured, semi-structured and unstructured data with same effect.

Keywords: SQL Database, NoSQL Database.

INTRODUCTION

Database is the collection of data. Database supports manipulation and storage of data. Database Management system (DBMS) is used for management of database. It is the collection of programs which provides users to do various operations on database, like retrieval of data, manipulation of data and representation of data. The database management system was first implemented in 1960s.

Charles Bachmen's Integrated Data Store (IDS) is said to be first DBMS in history. DBMS makes it is possible for end user to create, read, delete and update data in database. The database manages three important things like the data, schema and the database engine. Schema is used to represent logical structure of database and database engine allow users to access, modify and lock the data from database. This element provides concurrency, data integrity and uniform data administration procedures. The DBMS can offer both logical and physical data independence.

A relational database system is common type of database whose data is stored in tables. Most relational database systems use SQL language to access the database.SQL stands for structured query language which is used to communicate with data stored in relational database management system. It is designed for retrieval and management of data in relational database. Some common relational database management systems that use SQL are Oracle, SQL server, Access etc.

The standard SQL commands are Create, Select, Insert, Update, Drop and Delete used to perform various operations on relational database.SQL consists of four type of languages such as Data definition language(DDL), Data manipulation language(DML), Data query language(DQL) and Data control language(DCL).

The upcoming category of Database Management System is NoSQL. It does not adhere with Relational Database Concepts. The concept of NoSQL database is associated with internet giants. Internet giants like Google, Facebook, etc. deals with large amount of data. When relational database is used for such huge data, the system started giving slow response. To overcome this, two methods are followed. One is, scale up the system by improving the existing hardware and second one is, distributes database load on hosts when loads are increasing. NoSQL databases are called as horizontal scalable databases. Various database technologies are enclosed in NoSQL database system which can store structured, semi-structured, unstructured and polymorphic data. The main property of NoSQL is BASE (Basically Available and Eventually Consistent).

In 1998, Carlo Strozzi first uses the term NoSQL for his open source relational database. In 2000, the Graph database is launched which is named as Neo4j. The performance of graph database is better than the SQL database. In 2004, Google BigTable and in 2005, CouchDB are launched. In 2009, the NoSQL term was again introduced.

There are four different types of NoSQL databases. These are used as per their requirement. The names of the databases are: Key-Value, Document, Wide-Column and Graph. 1) Key-Value databases: The technique called hash table is used in key-value databases. To find the particular item in hash table, key number and pointer are

STRATEGIES FOR IMPROVING INTERVIEW SKILLS IN STUDENTS

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ABSTRACT

Interview is one of the essential steps in the selection process of job, and admission for the higher education. This research paper focuses on the importance of interview skills with the suggested strategies to develop the skills of students and it also tries to bring the awareness for building the confidence in them. There is fear in the mind of students about the interview so student can not prepare properly for the interview. Instead of considering the word interview we should keep in mind, it is nothing but the test of personality. Employers try to surprise interviewees to get a sense of how they think and react in unfamiliar situations. It is a part of your challenge is to stay open-minded and relaxed so you can build confidence, even in unfamiliar situations.

Keywords: Interview, Strategy, Skill, Improvement, students

INTRODUCTION

Interview is a social process, which involves interaction between two persons. One is the interviewer and other is the interviewee. It gives chance to the interviewer to have a glimpse of the inner traits and qualities of the interviewee. Interviews usually take place face-to-face and in person, although modern communication technologies such as internet, videoconferencing and telephonic interviews. Interviews almost always involve spoken conversation between two or more parties, although in some instances a conversation can happen between two persons who type questions and answers back and forth.

OBJECTIVES OF THE STUDY

The research paper aims at the following objectives.

1) To map the current position of job interview skills of the students.

2) To analyze critically the problems of the interview skills of students.

3) To suggest some of the strategies that can be implemented to improve the status of interview skills of students.

RESEARCH METHODOLOGY

The present study is based on secondary data and information collected from a various source like reference books, published articles, and websites etc. A sincere attempt has been made to interpret and analyze the data at the backdrop of the current position of the interview skills of students. The paper limits itself to deal with some of the problems as well as strategies which will be brought in practice if one needs to improve interview skills.

TYPES OF INTERVIEW?

Let's understand the various types of interview as per the nature of the role and the industry.

1. **Behavioral interview:** The focus of this interview is on candidate's experience and its relevance to the position.

2. **Situational interview:** In this type of interview the questions are based on the skills and personality traits that are required for the role.

3. **Structured interview**: This type of interview is conducted with a proper setting and format.

4. **Unstructured interview:** This interview is free-flowing discussion to gain the information of the candidate.

5. **Stress interview:** This type of interview is conducted to test the ability to cope with stress.

6. **Walk-in-interview:** This interview is conducted at the job fair.

What types of skills are required for the interview?

Interviewee should know the required skills for the interview which is as follows-

- Subject knowledge

- Work skills

- Finer skills

VERBAL PROPENSITY FOR EMPLOYMENT – A PRACTICAL APPROACH

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ABSTRACT

The main intention of teaching English language is to provide the students with adequate communicative skills. The communication procedure is a fundamental part of creative living. Every individual needs to be well equipped with the tool called communication in order to accomplish his goals in life. Communication has become the means to success in every business. A person can reach the height of success if he possesses excellent communication skills. On the other hand, a person cannot endure without the expertise of these skills. The foremost idea of communication is to convey clearly. It is not possible to visualize a world without communication. English being an international language, communicating effortlessly in English has become obligatory for those who wish to communicate well in the professional and academic areas. Modern education system leaves no stone unturned to make the students employable. But, unfortunately various studies reveal that only a meagre percentage of students are being placed. Rest struggle hard for employment, because of their poor communication skills. It is a fact that vocabulary plays a pivotal role in effectual communication. Mastery of verbal dexterity can help develop expertise in language skills. The students, who hail from vernacular medium background, have a fear and notion that they cannot develop vocabulary. In the present scenario, it has become a great challenge for language teachers to make the students proficient in communication skills which comprises of all the four skills – reading, writing, listening and speaking. A strong vocabulary improves all these four domains. Words are the currency of communiqué. Since vocabulary is an integral part of language learning, it becomes all the more important to make the students pick up vocabulary. This article focuses on various practical approaches which can be implemented in the classroom to enhance vocabulary.

Keywords: Accomplish, Adequate, Communiqué, Dexterity, Implemented

INTRODUCTION

Communication is an elementary factor of our life. A person is unsuccessful and cannot achieve his goals, if he does not possess unmatched communication skills. The chief idea of communiqué is to transfer ideas unequivocally and clearly. Communication becomes effective and blooming only when the recipient gets the similar message as favoured by the sender. Communiqué includes all the four skills – reading, writing, listening and speaking. English being a universal language, interacting fluently in English has become obligatory for everyone who aspires to shine professionally. One of the foremost fields of education is Engineering and Engineers the pride of humanity. Unfortunately, it is a fact that engineers who come from a vernacular medium background during their schooling lack proficiency in communication skills, though very strong technically. Insufficient communication skills hinder their performance as well as job openings in MNCs.

Osterman (1997) says, "Engineering is a very wide profession that encircles many other sciences and specialisms. Engineers cannot spend a lot of time behind the closed office door. They have to communicate and share ideas and thoughts with other collaborators and authorities". Formerly, the engineers were anticipated to do technical things only. The requirement for proficiency in English was not in demand. The engineering curriculum did not give any importance to communication skills in English. But as time passed, India became a constituent of the worldwide market and English being the most accepted tongue of the international business, the Indian corporations are concentrating and absorbing persons who excel in English.

"Good English Communication Skills are a vital element of an engineer's profession and the lack of such skills only undermines the image of an engineer." Shikha, Seetha (2012) In the present scenario, a person should be technically strong and also proficient in English. Communication is the elementary dogma of human communiqué. One has to write in English, read in English, listen and speak in English with people of divergent nationalities, different backgrounds and dissimilar cultures because of globalization. Thus, proficiency in English is the need of the hour.

DEPTH IN VERBAL PROPENSITY

Nathaniel Hawthorne says, "Words, so innocent and powerless as they are, standing in a dictionary; how potent for good and evil they become in the hands of one who knows how to choose and combine them." Vocabulary is an inseparable part of any language learning process. It would be impossible to learn a language without vocabulary. The important role of vocabulary has been emphasized in all different methods in language teaching. Maryam EslahcarKomachali (2012) According to Rivers (1981), "Vocabulary cannot be accomplished. It can be accessible, explained, encompassed in all types of events, but it must be learned by the

DEVELOPING COOLING SYSTEM FOR INJECTION MOULDING DIES

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ABSTRACT

This paper focus on determining the appropriate method to designed and fabricated the cooling system using the wire drawing method in which the wire tube is placed from inside the die, the gap should be maintained of 3mm between the die hole and the tube inserted or else it will get wore out. Cooling tower is used for cooling the water.

Keywords: Cooling Systems, Wire Drawing, Injection Moulding,Pkastic Products, Warpage and Heating

INTRODUCTION

Riya enterprises located in vicinity of Palghar is manufacturer of precision plastic components and engineering components. They have equipped injection moulding machines with various types of dies giving a wide range in variety of products. Injection moulding is a technology that has been used since the late 1800's. Injection moulding machines incorporate a huge screw to force molten plastic into the mould at high pressure. This screw drive method was invented in 1946 and is still the method used today. Injection moulding machines definitely do not have the modern, high-tech feel of 3D printing technology. There is really nothing cool about injection moulding but nonetheless it is a requirement for most hardware products. An injection mould consists of two halves that are forced together to form a cavity in the shape of the part to be produced. Hot, liquid plastic is then injected at high pressure into this cavity. The high pressure is needed to ensure that the plastic resin fills in every crook and cranny of the mould cavity. Once the plastic has had time to cool, the two halves of the mould are pulled apart, and the part is ejected.Although designing for injection moulding can be quite complicated, and the cost of the moulds themselves are incredibly expensive, there is one huge reason why injection moulding is still used today. No technology can beat injection moulding when it comes to producing millions of identical copies of a part at an incredibly low price.
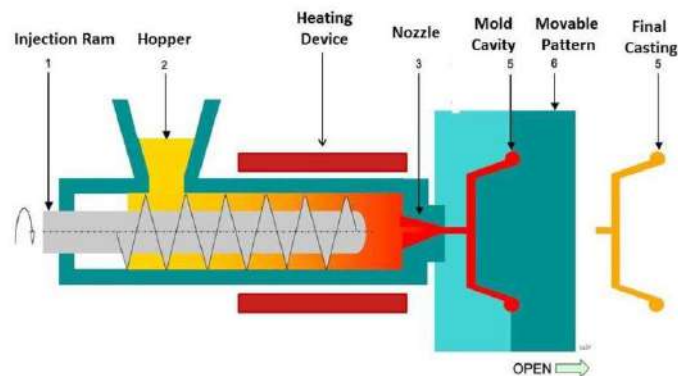

Fig-1: Injection Moulding Construction

OBJECTIVES OF STUDY
1. **Problem Definition**

2. **Proposed Methodology**

3. **Process Parameters**

LITERATURE REVIEW

[1] Shaileshbhai P Patel, et.al [2017], presents a simulation study of different types of cooling channels in an injection moulded plastic part and compares the performance in terms of cooling time, temperature profile and part warpage to determine which configuration is more appropriate to provide uniform cooling with minimum cycle time. [2] Parag Chinchkhede, et.al [2016], compared various cooling systems namely; parallel cooling system, series cooling system, robust cooling system and conformal cooling system and presented results in terms of cooling time, average mould cavity and part temperature, and average cycle time to decide suitable cooling channel system. [3] Ekadewi A Handoyo, et.al [2018], designed and fabricated the cooling system using the wire drawing method in which the wire tube is placed from inside the die, the gap should be maintained of 3mm between the die hole and the tube inserted or else it will get wore out. Cooling tower is used for cooling the water. [4] Hong S Park, et.al [2017], presented the conformal cooling system with the help of the spiral form

DEVELOPMENT OF QC TOOLS TO IMPROVE THE QUALITY OF MANUFACTURING PROCESS

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ABSTRACT

The purpose of this paper is to apply quality tools to ascertain the root causes of quality complexities related to manufacturing. Methods of faults on the production line are investigated through direct observation on the production line and enhance the process by continuous monitoring through the inspection of samples using statistical tools such as check sheets, histograms, Pareto analysis, cause and effect diagrams, etc. Is done in the effort demonstrates the utility of quality tools to discover and eradicate the root causes of problems. Seven outdated quality control tools are a set of QC tools that can be used to enhance the performance of production processes from the first phase of production or the final stage of production of a product.

Keywords: flow chart, pareto chart, scatter diagram, histogram, cause and effect diagram, control chart, check list PDCA List.

INTRODUCTION TO QUALITY CONTROL

Quality improvement is a primary requirement in any production system that sends products or service as its output. Thus, it is a major target in any manufacturing industry. The manufacturing industry puts a lot of effort into maintaining and improving the quality of its products using a variety of control devices and techniques. Quality concerns affect the entire organization in every competitive environment. This is necessary not only to reduce wastage, but also to meet customer expectations, continuous cost reduction and continuous improvements to survive in a highly competitive environment.

Seven Quality Control Tools Various tools are used to check product quality to define the weather whether the product is a quality or not and to take further necessary action to bring the process under control.

1) Flow Chart

2) Check Sheets

3) Pareto Chart

4) Histogram

5) Cause and effect diagram

6) Scatter diagram

7) Control Chart

FLOW CHART

The flow chart is one of the basic tools used to study the entire process. It shows the entire process in a phased manner. Flow charts of the entire process from material to product are studied. The graphical representation of data makes it simple and easy to understand.

CHECK SHEETS

Since measurement and collection of data form the basis for any analysis, this activity needs to be planned in such a way that the information collected is both relevant and comprehensive. Check sheets are tools for collecting data. They are designed specific to the type of data to be collected. The check sheet helps in the systematic collection of data. Some examples of check sheets are daily maintenance check sheets, attendance records, production log books etc. There is a need to meaningfully classify the data collected using check sheets. Such classification helps to gain an early-feminine understanding of the relevance and dispersion of data so that further analysis can be planned to obtain a meaningful output. The meaningful classification of data is called stratification. Stratification can occur by group, location, type, origin, characteristics, etc.

PARETO CHART

A Pareto diagram, named Wilfredo Pareto, an Italian economist, is a special type of bar graph used to describe the relative frequency of another entity in various events such as faults, repairs, claims, failures, or any other entity, in the descending order. This helps to focus on the major defect rather than many small defects to improve quality.

DOMAINS OF CRACKING JOB INTERVIEWS

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ABSTRACT

Everyone is familiar to the word 'Interview'. This paper briefs about 'Job Interview' which is the most common process in companies or organizations recruitment. Generally, after hearing the word 'Interview', what comes in every candidate's mind is 'fear of getting rejected' in the interview process and hence they fail in it. To overcome this issue, this paper provides domains for cracking a job interview with some required skills related to the interview process. It also presents the importance of communication skills and methodologies in a simple and precise way through which a candidate can explore his/her dream job by cracking an interview.

Keywords: interview process, candidates, fear of getting rejected, communication skills, methodology

I. INTRODUCTION

This paper aims to help students how to crack a job interview by using some interview techniques and by presenting their subject or technical knowledge with communication skills. Customarily, the interview is conducted between two persons or a group of individuals in conversational discussion. The person who conducts an interview is known as **Interviewer** while the candidate appearing for the interview is known as **Interviewee**. The job recruitment process involves various stages such as *aptitude test, group discussion* and *personal interview*, etc. in which **the personal interview** is the most important process that usually conducted to observe the ability and personality of the candidate and to justify his/her suitability for the job.

II. ESSENTIAL SKILLS AND COMPETENCIES

Why do students fail in interview?

Students fail in interview due to the following reasons:

➤ Lack of Interview Skills (Work Ethics, Positive Attitude, Time management, Self-confidence, Dress and grooming, Interpersonal Skills)

➤ Lack of successful tips on job interview (Conduct research on the employer, hiring manager and job opportunity; Review common interview questions and preparation;; Arrive on time, relaxed; Prepared for the interview and Make your first impression)

➤ Lack of English Language (LSRW - Listening, Speaking, Reading and Writing skills)

➤ Lack of Proper Body-language (Knowledge about non-verbal communication)

➤ Lack of Technical Knowledge (Core Skills)

Employers place a lot of emphasis on finding candidates with very specific skills, abilities and knowledge for their organizations. To get a job after graduation, you need to have the core skills and key employability skills which is known as transferable skills that will make you effective at work and career development. Therefore, you must have the following competencies which are keys to crack a job interview:

1. **Commercial Awareness:** You must know that how a business or industry works and what makes a company drive. It means the understanding of the organization's goals and method of achieving through its products and services and its marketplace strives.

2. **Communication:** Good communication is a two-way process that makes the effective exchange of information in business through listening and speaking out and good writing skills. Communication is really more of a package such as leadership and management, teamwork, influencing skills, etc. than an individual skill. To impress recruiters, you need to be able to express yourself concisely, phrase the right questions, understanding your audience and tailoring the essential information, good listening and speaking skills.

3. **Leadership:** Leadership proves you more than an entry-level to hire. Traditionally, in business and management academics, leadership and management roles are distinctively defined as the "**Leaders set vision**" by motivating and conveying of what can be achieved; "**Managers get things done**" by defining the individual tasks that need to be completed within the timeframes and by monitoring performance and

EXPERIMENTAL INVESTIGATION ON BEHAVIOR OF BAMBOO REINFORCED CONCRETE BEAM

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ABSTRACT
The use of bamboo which is fast growing and ecological friendly material for structural applications is being considered as quite appropriate. The tensile strength of bamboo is quite high and can reach up to 125 MPa. This makes bamboo a pretty alternative material to steel in tensile loading applications. The bamboo concrete composite elements can be used as alternate for concrete, steel and wood used in housing and other products required in the day today applications. In this study it has been attempted to develop engineered bamboo structural elements for use in low cost housing. The tension and compression tests are conducted on the bamboo specimen and flexure test is conducted on the bamboo reinforced concrete prism beam of size 150×150×750mm. The flexure test consists of 3 numbers of plain concrete beams,3 numbers of untreated prism beams and 9 numbers of treated bamboo reinforced prism beams. The treatment of bamboo avoids the swelling action and the fungi attack of bamboo and also increases the bond strength and durability of concrete. The study revealed that the tensile strength of bamboo is about 33% that of the steel, this is sufficient for masonry structure and the load carrying capacity increased about 3 times that of plain concrete beam having same dimensions. This study also revealed that the comparative study of modulus of elasticity for both plain concrete beams and bamboo reinforced concrete beam and concludes that 27% of increase in modulus of elasticity by using bamboo as a reinforcement member.

INTRODUCTION
Problems encountered with the commonly used construction material like steel are rise in cost, degradation of the non-renewable material, the pollution of the environment due to industrial process are common in the globe. However, with sustainability as a key issue in the last decades the environmental load of building materials has also become a more important criterion. The building industry, directly or indirectly causing a considerable part of the annual environmental damage, can take up the responsibility to contribute to sustainable development by finding more environmentally benign ways of construction and building. One of the directions for solutions is to look for new material applications: recycling and reuse, sustainable production of products, or use of renewable resources. Attention has to be given to materials such as vegetable fibers including bamboo, jute, and glass, wastes from industry, mining and agricultural products for engineering applications to control environmental degradation and to minimize cost. Due to the above advantageous characteristics of bamboo, in the last few years studies have been made on bamboo as structural material and reinforcement in concrete. The water absorption in the Bamboo is high so the water proofing to the Bamboo is required. Khosrow Ghavami in his study has focused about the summary of the information about the bamboo as a structural member.

His study also reflects about the design of the flexure and axially loaded elements. The concluded part of the study throws light on satisfactorily substitution of Bamboo against steel.

OBJECTIVES OF STUDY
The goal of this paper is to determine the practicability of bamboo reinforcement for concrete beams. Whereas the mechanical properties and behavior of steel reinforced concrete have been thoroughly studied and well documented, there exists no comprehensive data describing bamboo reinforced concrete. Therefore, the aim of this study is to provide a preliminary contribution toward the collection of the mechanical properties and behaviors of bamboo reinforced beams.

4. To study the suitability of bamboo for replacement of steel in reinforcement for low cost construction

5. To study the compression, tension and flexural behavior of bamboo as a reinforcement

6. To study the strength of treated and un treated bamboo reinforced beam prism

7. To study the plain and bamboo reinforced beam pris

LITERATURE REVIEW
• The International Standard Organization (1999) came up with lab manual for determining the physical and mechanical properties of Bamboo. This document gives a practical step by step explanation of how to perform each test of moisture content, density, shrinkage, compression, bending, shear, tension and specifically

FANET USING HONEYPOT SCHEME

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ABSTRACT
FANET introduces the ad hoc networking of flying UAVs to allow real time communication between them and control stations. Flying drones can also form FANET to establish real time communication to achieve their mission. FANET will help in handling of the circumstances like crisis, natural disaster, military combat zones, and package delivery. Efficient real-time routing is a major challenge in FANET because of the very high mobility which results in unpredictable dynamic topology. In FANET, each UAV behaves independently and as a result, some UAVs might behave selfishly to save their resources. This issue can induce network latency, network break down, security breach, and other issues. In this paper, we address this issue by proposing a honeypot detection approach which endeavors to mitigate selfish UAVs from the network. For experimental results, proposed scheme is incorporated with AODV protocol. We present the behavior of selfish UAVs based on energy constraints. Simulation results under various network parameters depict that the proposed approach provides more robust and secured routing among the UAVs in FANET.

Keywords: Flying ad hoc networks · Selfishness · Bait mechanism · AODV

INTRODUCTION
FANETs (Flying Ad-hoc Networks) is a group of Unmanned Air UAV (UAVs) communicating with each other with no need to access point, but at least one of UAV must be connected to a ground base or satellite. UAV can be small aircraft, drone and balloon. These are remotely controlled and pre-programmed networks. The applications of UAV networks are they are used in emergency situations such as flooding military and civil application (search and rescue operations, data mining, and forest fire detection). Security is the biggest challenge in FANET. There are several numbers of attacks occurring in the FANET. These attacks occur due to malicious nodes that enters in the network. However, dealing with these malicious nodes in FANET is the biggest challenging task in the network. There are many terms which effect network such as energy efficiency, number of UAVs, resources, and security of the data transmission over network. In FANET, each UAVs behave independently, from that some UAVs behave selfishly by dropping packets during routing or transmission to fulfill their malicious purpose. The selfish UAVs use the network without pay back for the usage of network. So, the result of these malicious activities impacts on network QoS become low in terms of network breakage, latency occurred, low transmission rate, less security, energy constraints, etc. To address the selfishness problem in the network, many researchers develop the different techniques and mechanisms. There are various techniques developed to solve different types of selfish UAVs such as energy based, speed based, memory based, and so on. Here in our work we proposed a solution for the energy-based selfish UAV. Here, we developed the selfish UAVs which aim to save its energy. We designed the selfish UAV which drop the packets when it's remaining energy is less than 50% of total energy. For prevention of the network from the selfish environment, numerous strategies were produced in past years by numerous researchers. They are as follows: Trust-based approach, watchdog model based, Reputation-based approach, and many more. These mechanisms provide security but, in some scenario, some of the techniques increase overhead, and in trust-based approach more memory is required. So here we proposed honeypot mechanism-based selfish UAV detection scheme named as honeypot selfishness detection scheme (HPSD). This HPSD uses honeypot mechanism to detect selfish UAVs when UAV noticed as suspicious UAVs by its activities. After that, it adds into the suspicious list, bait RREQ unicast to that suspicious UAV if it drops the bait packet then it's mentioned as selfish UAV and discard it from the network.

Selfish UAVs in AODV-Based FANET
FANET scenario is assumed, in which X UAV acts as a source UAV and G UAV acts as a destination UAV. Now, A UAV wants to communicate with UAV G. For that, X UAV broadcast RREQ packet to its all neighbour UAV to know whether G UAV is its neighbour node or not. Now in cooperative environment all UAVs check the RREQ packet and compare destination id with its own. If destination id matches, then it forwards RREP packet to source node and communicate with it directly. But if destination UAV id does not match with its own id, then it further broadcast RREQ packet to its neighbour UAV until it meets a destination. Now, if selfish UAV is present in network, it simply drop the packet and do not further broadcast RREQ packets to its neighbour. Now assume that UAV B behaves selfishly and drops the RREQ packet during routing from source UAV A to destination UAV G.

DESIGN AND FABRICATION OF FARMBOT

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ABSTRACT

Agriculture plays an important role in the life of an economy. It is the backbone of our Nation. For survival, humans need food which mainly depends upon farming, so farming plays an important role. The farmers have to Implement new techniques which will not affect the soil texture but will increase the overall crop production. The aim of this project is to design and develop a set of few mechanisms with some additional attachments which would ease the effort of the farmer and help them in increasing their crop production. Most of the conventional and traditional ways of farming can fasten up with a minimum amount of modification and by introducing smart mechanism techniques which are most importantly affordable to the farmers. Fertilizer, natural or artificial substances are used in farming so productiveness of plants can be improved. By using more amount of fertilizers in crops, crops reduce its natural fertility by which it gives proteins and nutrients given to the plant while growing. Without crop protection, including pesticides, more than half of the world's crops would be lost to insects, diseases, and weeds. Pesticides are important. By spraying more amount of pesticides it helps reducing pets and diseases growing in plants which would destroy the crops, so spraying would result in more growth of plants with proper nutrients and an increase in production per hectare.

INTRODUCTION

About 40 per cent (approximate) of the agricultural area in India is irrigated, accounting for 69 per cent (approximate) of total fertilizer consumption. Six crops (rice, wheat, cotton, sugar cane, rapeseed, and mustard) are estimated to consume more amount of fertilizer in the country.

Fertilizers are compounds that are added to plants for increasing growth. The two types of fertilizers used in India are - organic and inorganic. Organic fertilizers are carbon-based and are mixtures of organic matter like leaves, cow dung and parts of plants. Inorganic fertilizers contain simple inorganic chemicals. Some of the common nutrients present in fertilizers are nitrogen, phosphorus, and potassium (NKP). They also contain plant nutrients such as calcium, sulphur, and magnesium. Some special fertilizers contain elements or micronutrients for the nutrition of plants like boron, chlorine, manganese, iron, zinc, copper and molybdenum. Farmers know the exact combination of fertilizers to be used for a specified crop and amount of each chemical elements to be mixed to avoid damage through excessive or improper use.

While fertilizers help in plant growth, pesticides save the crops against pests. A pesticide is a substance or mixture of substances designed for preventing the crops been destroyed by pests, insects, etc.

Pesticides mostly include chemical substances such as phosphamidon, lindane, chlorpyrifos, heptachlor and malathion. Many pesticides are known to be poisonous to humans.

Pesticides are substances that are meant to control pests, including weeds The term pesticide includes all of the following herbicides, insecticides (which may include insect growth regulator, termiticides, etc.) nematicide, molluscicide, piscicide, avicide, rodenticide, bactericide, insect repellent, animal repellent, antimicrobial and fungicide. The most commonly used pesticide among all the pesticides is herbicides which are almost 80%. Most pesticides are intended to serve as crop protection product, which in general, protect plants from weeds, fungi, or insects.

In general, a pesticide is a chemical or biological agent which contains such as a virus, and bacterium that destroys, or kills, pests. Target pests can include insects, plant pathogens, weeds, molluscs, birds, mammals, fish, nematodes (roundworms), and microbes that destroy property, cause nuisance, or spread disease, or are disease vectors. Along with these benefits, pesticides also have drawbacks, such as potential toxicity to humans and other sections.

LITERATURE REVIEW

[1].HUGH SAVOY,et.al,(1914), discussed about the different elements which is been required in crop production and the main amendments lime and fertilizer materials. Also the tools required for measuring the chemical proportion of fertilizer and for measuring soil fertility.[2].OENE OENEMA,et.al,(2002)proposed an information regarding the pros and cons of balanced fertilization as a policy tool and suggests operational measures. Essential steps are book keeping of nutrients of farm and fields levels, and evaluation of soil fertility level and nitrogen and phosphate surpluses relative to vulnerability of the environment.[3]. Hillel MAGEN

FINGERPRINT BASED ATTENDANCE SYSTEM

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ABSTRACT
Fingerprint attendance system aims to automate the attendance procedure of an educational institution using biometric technology. This will save time wasted on calling out names and it gives a fool-proof method of attendance marking. A hand-held device is used to mark the attendance without the intervention of teacher. The device can be passed and students can mark attendance during the lecture time. Students would be made to place their finger over the sensor so as to mark their presence in the class. It can communicate with a host computer using its USB interface. This device operates from a rechargeable battery and mobile phone. GUI application in host computer helps the teacher to manage the device and attendance. The fingerprint-based attendance management system was implemented with Microsoft's C# on the .NET framework and Microsoft's Structured Query Language (SQL) as the backend. The experimental result shows that the developed system is highly efficient in the verification of users fingerprint with an accuracy level of 97.4%. It consists of two processes namely, enrollment and authentication. During enrollment, the fingerprint of the user is captured and its unique features extracted and stored in a database along with the users identity as a template for the subject.

Keywords: Fingerprints, Attendance

INTRODUCTION
Fingerprints are a form of biometric identification which is unique and does not change in one's entire lifetime. This paper presents the attendance management system using fingerprint technology in university. Attendance is a concept that exists in different places like institutions, organizations, hospitals, etc. during the start and end of the day to mark a person's presence. In early days and even now in many places attendance is recorded manually in attendance registers by calling out the names. This results in waste of time and human effort. Also there are many fraudulent issues that happen when we use a register. For example, in educational institution, the teacher calls out the names of the student's one after the other and marks their presence after they answer. The other way that is followed is the teacher passes the attendance sheet around the class for the students to sign besides their names. But these methods have a major drawback where the students tend to answer or sign for their friends who are not present for that day. These fraudulent issues may become more frequent if the class strength is high. A solution to overcome these problems is by using a system that will record the attendance automatically. In this direction, this paper presents a fingerprint based biometric system that records the attendance automatically.

This Application consists of a fingerprint sensor which is used to detect the person's identification. For example, in educational institutions, the student needs to place their finger on the fingerprint sensor to obtain their attendance. The fingerprint captured is recorded in a flash memory and then each time it is checked whether the obtained fingerprint matches with the record in the database after which the student gets the attendance. By making use of this system, we overcome the issues such as proxy so no student can give attendance for their friends who are absent. This causes time wastage during lecture time. This becomes more and more important where number of students in a class is very large. Fingerprint based technique use computer and also mobile application to store and verify fingerprint.

OBJECTIVES OF STUDY
1. To understand the concept of fingerprint scanner

2. To understand the concept of image acquisition

3. To develop mobile application for fingerprint based attendance system

CONCEPT
A. Fingerprint Scanner
A Fingerprint scanner is types of electronic security system that uses fingerprint for biometric authentication to grant a user access to information. A direct fingerprint reader (DFR) also called a fingerprint scanner or fingerprint reader, is a biometric device that uses automated methods of recognizing a person based on unique physical characteristics of a person's fingerprint.

E. Current Date & Time
The present date and time of the framework is likewise shown on the GUI for simplicity of the client and a similar date and time is utilized in booking highlight as referenced by segment: 4.1 of IEEE Std. 1621.

F. Mode Toggle
The robot can be used in two different modes i.e., automatic mode & manual mode. An icon is placed on the main GUI to toggle between automatic mode and manual mode. When the robot is in manual mode, icon shows A, showing that the user can click to convert it to automatic mode. When the robot is in automatic mode, the icon shows M, showing that the user can click on it to convert the robot to manual mode. Whenever mode is toggled, it is notified to user by a buzzer sound owing to section: 4.6 of IEEE Std. 1621.

G. Help Options
Another symbol of help to facilitate the clients is additionally accessible on the GUI which opens another GUI which contains various Frequently Asked Questions (FAQs). It additionally contains essential manuals for open and administration the gadget whenever required and the client manual is likewise accessible to edify them with fundamental images, control alternatives and wordings alongside definitions as referenced by section:1 and section:3 of IEEE Std. 1621.

VI. DISCUSSION ABOUT ROBOT OPERATION
The target of this venture is to make a vacuum cleaning robot that is completely independent and manual highlighted with an easy to use interface. The vacuum cleaner can clean, get over and auto arrange. The robot named CLEAR (cleaning entresol self-sufficient robot), it has variable speed and power productive.

The testing of the robot indicated that it can accomplish practically every one of the functionalities which were intended to execute initially. CLEAR can be utilized in self-ruling and manual modes according to the client's will. During its self-governing mode, this robot can be planned with legitimate date and time. At the point when that opportunity arrives this item consequently starts and tidies up the entire room and counter check design. At the point when this robot finishes the entire way it naturally cleans itself in the station from where it began cleaning. Also, manual mode is to spare the vitality of the robot and to clean the specific spot. Clients are given an easy to use interface to work the robot with no trouble. CLEAR above all expends incredibly low vitality which is 90W and take lead from the contenders. The vacuum cleaner has dependable hardware

furthermore, it has the wellbeing circuit which redresses various shafts and confines high voltage to influence the circuitry. However, the shortcoming of the robot is that it just cleans the little particles, it additionally doesn't see which molecule as cleaned and which isn't to be cleaned. This robot additionally can't do wet cleaning. These two capacities can be remembered for future upgrades of this robot.

The assessment shows that our item is solid and savvy. It works with less vitality utilization. The outcomes demonstrated that clients from the college found no trouble in utilizing the item. Its outcomes likewise demonstrated that this item is client-friendly the two modes.

VII. CONCLUSIONS
This paper shows the usage of the IEEE Standard 1621 IEEE Standard for User Interface Elements in Power Control of Electronic Devices Employed in Office/Consumer Environments as far as a brilliant floor cleaning robot. The paper demonstrates a superior and basic way to deal with give an outline of the structure of a straightforward mechanical cleaners control configuration utilizing contraptions and instruments effectively accessible in the Pakistani market. This robot (CLEAR) is uncommonly made based on current innovation. CLEAR has every one of the highlights which are required for a vacuum cleaner. It can work consequently and physically. It has the component of the booking and it would auto be able to deplete itself. CLEAR has numerous contenders who are selling the same item insignificant expenses. This is first privately produced shrewd vacuum cleaner with every one of the highlights up to the benchmarks of IEEE. Highlights of this robot can be improved with the expansion of mapping and high suction. As it has a planning highlight which can be worked with PC just, android and windows applications can be made to make it minimal more easy to understand. The intended interest group with every one of the highlights is the center and privileged of a Pakistani people group. It can likewise be utilized for the businesses where cleaning with the assistance of human is poisonous, the vacuum cleaner can without much of a stretch be utilized

HIGH Tc SUPERCONDUCTIVITY: AN OVERVIEW

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ABSTRACT

High T_c Superconductivity is one of the interesting phenomena in modern science. In this review article, the subject has been discussed in simple manner, so that a reader can have the primary idea of superconductivity, especially at high temperature region. Mathematical expressions and complicated theories are intentionally avoided to give only an overview.

INTRODUCTION

In 1911, Kamerlingh Onnes first discovered the phenomenon of superconductivity in mercury at 4.2K, the temperature of liquid Helium. The discovery of vanishing resistance led to a promising field in science. The discovery of superconductivity in several other elements like tin and lead was soon found. Meissner and Ochsenfeld discovered in 1933 the expulsion of magnetic flux from the superconducting state, known as Meissner effect, proving superconductors to be perfect diamagnets. The much celebrated microscopic theory of the phenomenon was put forth by Bardeen, Cooper, and Schrieffer (BCS) in 1957. They presented the quantum mechanical theory of superconductivity due to an attractive interaction between two electrons, known as Cooper pairs, through electron–phonon interaction leading to BCS theory of superconductivity. The discovery of high temperature superconductivity by Bedrnoz and Müller on 1986 introduced a new horizon. Since then scientists are trying to find a material that will exhibit zero resistance in room temperature, and the energy problem of the world will be solved!
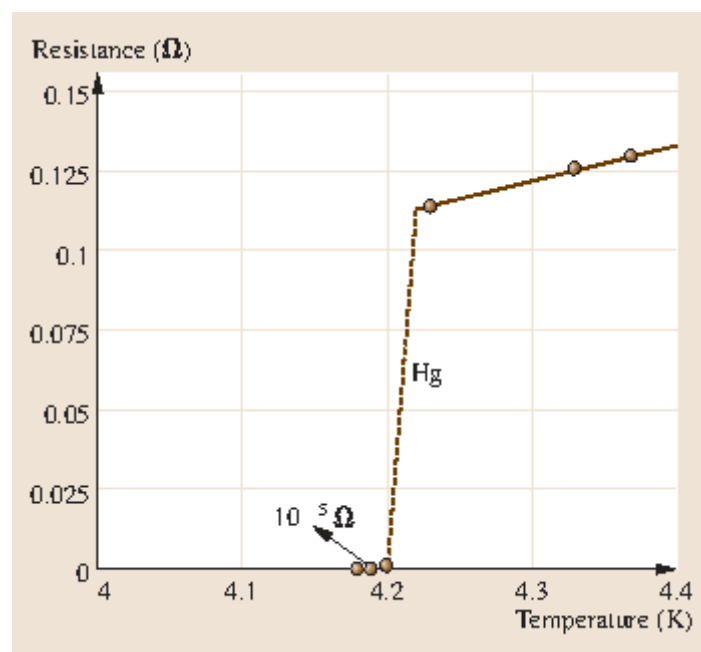

Figure 1

FIG. 1: Resistance–temperature plot for mercury obtained by Heike Kammerlingh Onnes

CONVENTIONAL SUPERCONDUCTORS

A superconductor is generally considered as a conventional superconductor if it can be explained by BCS theory. Most elemental superconductors are conventional. Between 1911 and 1974, the critical temperatures T_c of metallic superconductors steadily increased from 4.2 K in mercury up to 23.2 K in sputtered Nb_3Ge films. The first superconducting oxide $SrTiO_3$ with a transition temperature as low as 0.25 K was discovered in 1964. A remarkably higher critical temperature of 13 K was found for the perovskite $BaPb_{1-x}Bi_xO_3$ in 1975. Nb_3Ge had the highest critical temperature in metallic superconductors until the discovery of superconductivity at 39 K in MgB_2 in 2001.

Bardeen–Cooper–Schrieffer (BCS) Theory

J. Bardeen et al. proposed a microscopic theory of superconductivity introducing the concept of Cooper pairs. When an electron passes through the lattice it interacts with the stationary atoms and hence distorts the crystal

HIGH VOLTAGE MARX GENERATOR USING MOSFET

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ABSTRACT
The main aim of the project proposes high voltage DC generation using Marx generator precept that uses MOSFET alongside capacitor stacks. The Marx precept turned into brought with the aid of Erwin Otto Marx. The system includes 10 stages such that everyone is made up from resistors , MOSFET in conjunction with capacitor. Resistor are used in capacitor charging at every stage and MOSFET is used as switches between capacitor. It is used to generate a high voltage pulse at the output with the smaller DC voltage. It uses cascading of charged capacitors in series to generate the output voltage ideally equal to the sum of voltages of all the capacitors connected in series. To charge the capacitors a DC voltage is applied with a series charging resistor and a diode to prevent discharge.

Keywords: Capacitor, MOSFET, Resistor.

INTRODUCTION
Marx Generator is an outlandish voltage generator. The imperative rule of Marx Generator is that the capacitors are charged in parallel as much as its data DC voltage compose. Those capacitors are then associated nonparallel the utilization of changes to give AN over the top voltage beat all through the weight innovation. With the development of solid state natural philosophy, solid-state devices became more and additional acceptable for periodical power application. they could supply the periodical energy systems with compactness, responsibleness, excessive repetition fee, and extended existence time. The rising of periodical electricity generators the usage of solid-state gadgets gets eliminate barriers of ancient additives, and guarantees periodical strength to be extensively used in business packages .However, strong-state switch devices inclusive of MOSFET to be had now are best rated up to three kg volts. most of periodical power systems demand of a lot of higher voltage rating. switch devices are important additives in periodical power systems. typical Marx Generator use spark gas switches. These switches possess barriers like short lifestyles time in terms of range of operation cycles, low switching frequency, immense length, additional maintenance and lots of others. In current strong country switches like MOSFET or IGBT is used in situ of spark gaps. The benefits of solid country switches are compact, reliable, bendy, more efficient, long lifestyles time, low charges and reduced losses. The output pulse breadth and amplitude every could also be varied by dominant the gate management pulses to the switches. Rapid discharge of keep energy in brief interval as electrical pulses into a load produces huge amount of instant power. The traits of pulse as rise time, fall time, pulsewidth, repetition charge, a voltage and strength tier varies with distinctive applications. High voltage periodical electricity have intensive kind of programs in exclusive fields like industrial, environment.

OBJECTIVE OF STUDY
1. The principle goals of Marx generator will be to create high motivation voltage with great productivity in high voltage research facility.

2.To provide an environment friendly power source.

3.Producing a big amount of energy and storing it to use later when the electricity shut down.

4.To make cheap and easy maintainable power source.

5.To produce low Cost high voltage DC generator.

Concept
Problem Definition:- In this mode of operation of the capacitor discharges from the impulse generator. The shape of the pulse is controlled by external impedances at the output of the pulse generator. When the voltage gets higher it's difficult to get practical resistors with low parasitic inductance that will also stand the full impulse voltage. The usualremedy for this is to include the wave shaping resistors in the Marx generator. Physical size of the circuit components are huge. The six of the circle is bigger. This requires a high DC charging voltage.

Block Diagram :-

PLANT DISEASE DETECTION USING DEEP LEARNING (KRUSHIMITRA)

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ABSTRACT

Crop cultivation plays an essential role in the agricultural field. So, if plant leaf are affected by the diseases, it may affect the production as well as the economy of the country. To identify the plant leaf diseases at an ultimate phase is not yet explored. In order to find out which disease affect the leaf, the farmer need to contact the expert for the detection of disease. The expert provides the suggestions which is based on its knowledge and information whereas sometimes searching the expert suggestion is time consuming, expensive and may be not precise. Therefore, to resolve this problem, Image processing techniques can be used which provides the accurate and fast solution. In this project we have made a mobile application which uses MobileNet and Inception Model, enhanced convolutional neural network algorithms to predict the infected area of the leaves. A colour based segmentation model is defined to segment the infected region and placing it to its relevant classes. Our project is used to detect the leaf diseases of Potato and strawberry.

Keywords: plant disease, deep learning, neural networks

I. INTRODUCTION

In early days, the monitoring and analysis of plant diseases were done manually by the expertise person in that field. This requires tremendous amount of work and also requires excessive processing time. Also identifying plant disease incorrectly leads to huge loss of yield, time, money and quality of product.

Plant disease diagnosis through optical observation of the symptoms on plant leaves, incorporates a significantly high degree of complexity. Due to this complexity and to the large number of cultivated plants and their existing phytopathological problems, even experienced agronomists and plant pathologists often fail to successfully diagnose specific diseases, and are consequently led to mistaken conclusions and treatments.

To overcome this, we have proposed an mobile application ' Farmitra ' through which we can detect the plant leaf diseases and offer a corresponding treatment measures as well as the farmers can post a comment or issues in the forum. The Plant leaf disease detection is done by using image processing .Image recognition of plant diseases is to extract the characteristic feature information from the diseased regions in the obtained images by using image processing techniques, and then to achieve disease recognition by using pattern recognition methods such as neural networks.

Deep learning can be thought as a learning method on neural networks. Due to image recognition, the Farmitra app is able to identify the plant type-as well as the appearance of a possible disease. The Deep Learning Model we have proposed is the MobileNet and Inception Model, which are widely used Image Recognition models and with a greater accuracy rate of around 99.7% as compared with the other Deep Learning Models such as Vgg(95%) and Resnet(97%).

React native, an upcoming cross platform app development which provides optimal performance, simple user interface and support third party plugins makes a very efficient front-end. In our product we have built our front-end on react native so that the farmers find it easy to use.

India is an agricultural country and about 70% of the population depends on agriculture. Farmers have large range of diversity for selecting various suitable crops and finding the suitable pesticides for plant. Diseases on plant leads to the significant reduction in both the quality and quantity of agricultural products. Monitoring of health and disease on plant plays an important role in successful cultivation of crops and plant growth in the farm.

The image processing techniques can be used in the plant disease detection. A neural network learns how to extract features while training. CNN being a multi-layer feed-forward neural network, is the popular deep learning model. Image recognition of plant diseases is to extract the characteristic feature information from the diseased regions in the obtained images by using image processing techniques, and then to achieve disease recognition by using pattern recognition methods. Generally, the extracted features from the images of plant diseases include color features, shape features, texture features, and so on. It is very important to extract the effective characteristic features for the image recognition of plant diseases

IMPLEMENTATION OF VANET

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ABSTRACT

In VANETs, the vehicles and the environment communicate with each other using wireless sensors and On-Board Units (OBUs). This is useful as packet senders, receivers and routers that helps the vehicles to send, receive and forward packets to Road Side Units (RSUs). This kind of apparatus and devices cause wireless communication over small distances and can transfer kinematic data of vehicles to each other. VANET vehicles contain special dedicated hardware for this system which also includes Global Positioning Systems (GPS). Effective, reliable and timely communication is possible due to the fixed devices i.e. RSUs which is installed in specific locations so as to optimize the motive. RSUs uses IEEE 802.11p wireless communication to communicate over short ranges. The possible vehicular communication configurations in intelligent transportation system (ITS) include vehicle-to-vehicle (or inter-vehicle), vehicle-to-infrastructure and routing-based (RB) communication. Vehicles can directly establish communication wirelessly with one another forming V2V communication or with fixed RSUs forming V2I communications. These communications heavily rely on the real time data of kinematic states of vehicles and time message sharing between vehicles and Road Side Units (RSUs). To achieve this aid of GPS and other intelligent systems is required. Also, to achieve efficient and reliable communication, we need cross network protocols which are secure and can safely deliver packets, as its very important for the system to be safe from attacks or else the safety of people and property is on serious risk.

Keywords: VANET, V2V, V2I, Road Side Unit, AdHoc Networks, MANET.

I. INTRODUCTION

Rapid development of wireless communication has paved the way for transport and many other fields for mankind. Due to reckless driving and many other non-foreseen circumstances, the world now observes death of approximately 1.2 million people per year and more than 50 million people get injured and moreover the count is still increasing! According to stats it is estimated that these figures will increase by 60% in coming time if not taken proper action now. In VANET, vehicles can connect to each other and to internet wirelessly. VANETs can be considered a subset of MANETs (Mobile Ad Hoc Networks) wherein each node moves freely, that is there is no space constraints for the nodes. Whenever the nodes change their locations, they get connected and remain connected to VANET till they are in that region, this makes VANET a very dynamic topology. There are two methods by which the nodes can connect, these are single hop and multi hop. Each node in VANET is either vehicle or Road Side Unit (RSU). Communications in VANET are divided into two categories: Vehicle to Vehicle (V2V) communication, and Vehicle to Infrastructure (V2I) communication. In V2V, vehicle can communicate with other vehicles and it involves sending and receiving messages to or from other vehicles. V2I takes place when vehicles communicate with RSU. These helps in different applications to improve road safety and efficient transportation.

II. How VANETS Work?

As we know, VANET is formed by nodes and today these nodes are very large in number. In todays world, there are approximately 800 million vehicles. The nodes can communicate using radio signal and the range of communication is 1 km. Vehicles farther than the mentioned range need to use hop method to send or receive signals. Routing job is done by an RSU, it plays as a router between vehicles. However, the following figure shows the VANET structure. In order to connect vehicles with RSU using radio signals, each vehicle must be equipped with an On-Board Unit (OBN). Tamper Proof Device (TPD) is a device that holds all vehicle secrets such as driver identity, speed, and position.
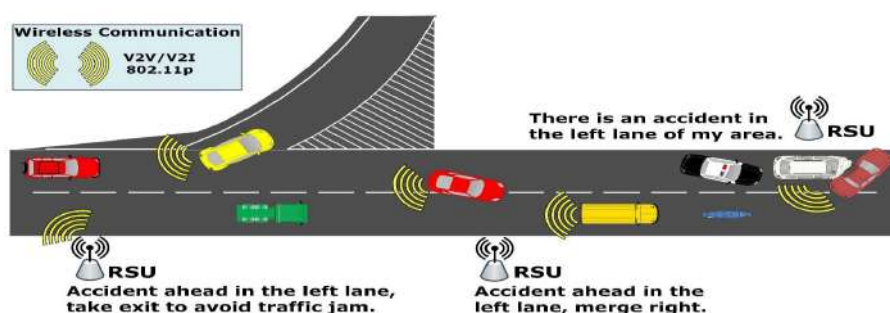
INDOOR POSITIONING SYSTEM WITH NAVIGATION

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ABSTRACT

Every year, new technologies are introduced and improved where positioning service is one of the widely growing technology in the modern world. Positioning services are used in mobile applications for navigation and advertising. The outdoor navigation is based on GPS, whereas for indoor navigation devices are used to pass a signal through an interface which is much tougher challenge. Devices used for passing signals are Bluetooth, Wi-Fi and other sensors. The IPS helps the people to reach the destination on its own. The application gets the input from the user about its starting point as well as the destination. Then the application provides the shortest path to reach the destination. As the user walks on the path the user pointer starts moving i.e. its shows the remaining path to the destination. This pointer moves as the user device gets connected to the beacons or sensors. When the user pointer and the destination pointer meets then the application shows that the user is reached to its desired destination. This application is also helpful to the people with speaking and hearing disability. The application is less time consuming as it provides the shortest path to its destination and gives the real time navigation with positioning accuracy.

Keywords: Positioning Services, Sensors, Less time consuming, Accuracy, Real time navigation.

INTRODUCTION

Complex layout of buildings are difficult to understand some time new visitors find their way quickly, in malls, airports, university campuses etc. When new visitors entered in such complex layout, visitors are not able to find their path easily. So that's why we need of Indoor Positioning and Navigation application for finding the paths in complex layout buildings. Simple floor maps are not understood by most of people, and it is difficult to change when some information is changes on them. Indoor positioning and navigation application database are easily maintained when changes are introduced. Indoor positioning and navigation application helps to locate and guide the visitor to navigate through campus using their mobile devices. Now-a-days everyone uses smartphones for high accessibility; these devices thought to use sensors that are now found in present day in advanced cell phones. Sensors like Wi- Fi, Bluetooth, Gyro sensors, Accelerometer, Wi-Fi, Bluetooth, and compass.

In this research, we have focus on Bluetooth particularly Bluetooth low energy beacons. Bluetooth uses low energy and gives perfect accuracy for the distance measures compare to the other devices like Wi-Fi and Bluetooth. At present in every mobile phone these days we can easily use Bluetooth for Indoor positioning and navigation application. GPS is not useful for indoor positioning system because GPS is the satellite based positioning system. The building structure distorts and absorbs the signals. That's why we use new technology and techniques that had to be developing for indoor environment. For example Wi-Fi, Bluetooth, ultrasound, infrared based positioning. GPS uses the triangulation method for determine the location using radio signals GPS receiver measures the distances to satellites. The signal received from two or three different points. Triangulation is sometimes used in cellular communications to determine a user's geographical.

OBJECTIVE OF STUDY

1. To decide the position of a person in an Indoor Environment.

2. To guide a person, inside an unfamiliar building, from place to another.

For tracking any person or finding path to reach our destination we use GPS in outdoor environments but it is not possible in indoor environments because GPS signal are weak to penetrate the walls and roofs of buildings.

That's why we use new techniques to find the path and position of any person in indoor environment using Bluetooth technology with the help of Indoor positioning and navigation application.

When new visitor enter in new indoor environments that visitor nothings knows about the environment so it is difficult to find destination and also its own position in that indoor environment so With the help of this application visitor can easily find their destination and its own position in indoor environment.

RESEARCH METHODOLOGY

Navigation systems can be distinguished by their field of application and the technologies used. Indoor navigation systems provide a route for the user inside buildings. You have to take individual levels into account

LITERATURE REVIEW ON: THE ELECTRIC BIKE

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ABSTRACT

An electric bicycle also known as an e-bike is a bicycle which use an electric motor for propulsion. there are various kinds of e-bikes are available through the world, from e-bikes that only having a small motor to assist the rider's pedal-power (i.e. pedelecs) to more powerful e-bikes which are as same as a moped-type functionality. All retain the ability to be pedaled by the rider and are therefore not electric motorcycles. E-bikes uses a lighter weight battery which can be recharged easily and help to travel up to 25 to 32 km/h (16 to 20 mph),which is to be depended on local laws, while the more high-powered varieties can often touch the speed limit of 45 km/h (28 mph). In some markets, such as in Germany as of 2013, they are gaining in popularity and taking some market share away from conventional bicycles, while in others, such as China as of 2010, they are replacing fossil fuel-powered mopeds and small motorcycles. Depending on local laws, many e-bikes such as pedelecs are legally classified as bicycles rather than mopeds or motorcycles. This frees them from the more stringent laws regarding the operation of more powerful two-wheelers which are often classified as electric motorcycles. E-bikes can also be defined separately and treated under distinct electric bikes laws. E-bikes are the electric motor -powered versions of motorized bicycles, which have been in use since the late 19th century.

Keywords: BLDC motor, controller, batteries.

I.) INTRODUCTION

An e-bicycle is one with an electric motor (attached to the bottom bracket or front wheel) that assists the rider with their pedalling. This means that while you're still getting a workout – and enjoying the scenery – you don't need to pedal nearly as hard, especially up hills. The electric vehicles industry is continuously evolving. One type of such electric vehicle is the electric bicycle (e-bike). E-bikes typically incorporate a battery, which can be charged at an ordinary domestic power socket, linked to an electric motor in the bicycle transmission system. The rider have the power to controls the output power from motor i.e speed using a handlebar mounted computer display panel and controller. The term 'e-bike' is generic and includes a combination of different electrically powered two-wheelers some of which function by simply turning a throttle. Electric bicycles, like other electric vehicles, use a BLDC motor. Main reason to identify the need of finding and modifying E-Bike is to overcome the issue of the pollution because of vehicles in metro towns & urban zones is swelling uninterruptedly. Considering the all class of society it is not reasonable for all to purchase (scooters, mopeds or motorcycles). So, combining both issues, environmental progress supporting and economical affordable alternative would be the best solution. In the modern days, the primary concern of government is to find out a way by which we can minimize consumption of fossil fuel and promote the use of electric vehicle our daily life. However, there are certain barriers while adopting these latest technology in our daily life.
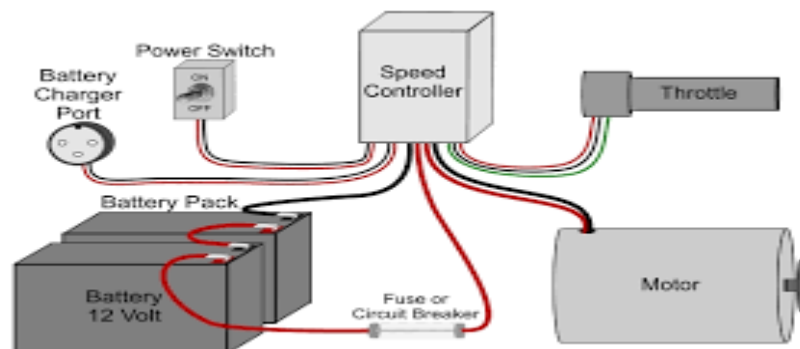

FIG.1 Major components of e-bicycle

INSTRUMENT SPECS

Some important parts required for propulsion of e-bikes are: a.)Motor, b) Battery, c) PIC Controller

a.)Motor

In e-bicycles brush less DC (BLDC) motors are to be used which consists of armature windings on the stator permanent and magnets on the rotor. The stator of this BLDC motor consists of stacked steel laminations with

MANHOLE DETECTION SYSTEM

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ABSTRACT

Good and Smart man-hole management may be a image of an honest town. today man-holes area unit the most drawback within the cities. All the man-holes don't seem to be insecure position. Most of the man-holes area unit in broken condition. thanks to the broken man-holes, there area unit possibilities of prevalence of accidents within the road. These broken man-holes are a threat to private safety. This project work is to style an efficient accident avoid system by preventing open man-hole in major cities. The devices just like the tilt device and weight sensor wont to observe the crack and therefore the harm within the man-hole cowl then the knowledge are sent to the authority of the corporation department and therefore the councillor of the realm wherever the hole is gift. The management and maintenance area unit created through the Internet of Things(IoT). The implementation of this project are terribly helpful to society. several sensors established within the cover to time period monitor its scenario, this technique might monitor the town cover in time period and provides AN alarm mechanically and therefore the Live Location the hole on the automaton Android App. there's no doubt that it might improve the management ability of the cover and greatly enhance the security of people's travel.

Keywords: Android App, Crack, Tilt, IoT, Sensors, Smart man-hole.

INTRODUCTION

Nowadays manhole management is more important. Because damages in manhole cover lead to many accidents. It's very important to have a secure manhole management System in smart cities. Because the rate of accidents due to Insecure manhole coverage is high. There is a chance of a Leakage of dangerous gases which causes an explosion and even Death to the persons. If any change in the angle of the manhole Cover, it causes accidents. Also if any crack in it, it may break. So manhole management is very important. Previously the Person of the corporate office has to go directly and check The man-holes or the people of that area have to inform to the Corporation office But in this 21 st century it is difficult to go Directly and check the man-holes manually. Because Everything is automated nowadays. So a smart hole manhole Cover management is required. So in this paper, we use various Sensors to sense the damages. Then if there is any problem, The message can be sent to the corporation office using IoT And it can be viewed from any place of the world. With its great quantity and wide distribution, the manhole cover is an important part of the city drainage system. But owing to the complex structure and imperfect function of manhole cover, hundreds of people suffer from all kinds of losses because the manhole cover is broken or missing every year.

PROPOSED ARCHITECTURE

In the proposed method, the development of IoT based drainage and manhole monitoring system is designed. This system monitors atmospheric temperature, the release of toxic gases, blockages, overflow in drains and manhole lid position. Maximum levels are set and sensors keep monitoring the changing conditions. As the levels reach a maximum set point the sensors detect and send the signal to the controller, where it commands the IoT network to generate alerts to the municipal corporation. most of the cities adopted the manhole system to avoid the accidents and spreading of disease in the city. The manholes during the rainy season are left open and there is a chance to people fall in it. If the manhole lid is not closed properly there is a chance of occurrence of accidents and can lead to death. This problem is solved, suppose imagine if we should have an alerting system for the things that happen to a manhole and are notified on the android device application.

AUTOMATIC FLOOR CLEANER

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ABSTRACT

Households of today are becoming smarter and more automated. Home automation delivers convenience and creates more time for people. With the advancement of technology, robots are getting more attention of researchers to make life of mankind comfortable. Several robotic vacuum cleaners are available in the market but none of them implement wet and dry cleaning of floors simultaneously. The purpose of this project is to design and implement an automatic floor cleaner that can do sweeping and Mopping simultaneously. Automatic floor cleaner is designed to make cleaning process become easier rather than by using manual vacuum. The main objective of this project is to design and implement an automatic floor cleaner by using a microcontroller, ultrasonic sensor, proximity sensor, position sensor, set of swapping motor, and vacuum motor and to achieve the goal of this project. Automatic floor cleaner will several criteria that are user friendly.

Keywords: Automatic floor cleaner, cleaning, household.

INTRODUCTION
Household cleaning is the most common and tiresome job done every day. The most basic of it is cleaning the floors. For years we've been using the traditional ways of cleaning the floors i.e. sweeping and mopping using broom and a piece of cloth. Well this being the simplest method of cleaning they are very tiring as they cause body pain to some extent. To tackle this problem vacuum cleaners had been introduced few years ago. But they are inefficient as they provide only dry cleaning action.

New era is starting to develop robots among both professionals and non-professional electronics users. With the increased use of open source software and more recently open source hardware, as well as the downfall in prices in the world of electronic tools, engineers find themselves in a situation where they can think of and carry out a vast range of projects. With the use of these open source tools we developed this project. The focus of this project is to design and implement an intelligent robot. It can operate all its operations automatically by using its own intelligence. Artificial intelligence is implemented using sensors and programmed accordingly. The main highlight of this project is that it aims to build and implement a robot that is capable of doing the dry and wet cleaning i.e. sweeping and mopping of floor simultaneously. It is the first of its kind that can do this job with a vacuum cleaner and mop pad both fitted in the same body.

LITERATURE SURVEY
Edward Finch, US November 28, 2001
An automatic floor cleaner uses a body part that has a changes of direction driving mechanism such that when body fined that it is in front of an obstacles, the direction of the body is changed. An extension extends outwardly from the body members and has cleaning implemented while moving along the ground.

Mohsin Raza, Shahbaz Munir, 2003
This thesis present the design, development and fabrications of prototype floor cleaning robot. All hardware and software operation are controlled by AUDINO MEGA. This robot can do moping action. Robot operates automatically and find its way skillfully in a way that it can clean all the room without human assistance. Ultrasonic sensor is used to detect the hurdles. The whole circuit is connected with 12V battery. This may be proven helpful in lifestyle of mankind.

Vatsal shah, 2015
The objective of this project is to design and implement a vacuum robot automatically and via phone application. Vacuum cleaner robot is design to make cleaning become easier rather than by using manual vacuum. The main objective of this project is to design and implement a vacuum prototype by using Arduino Mega, Arduino Shield , LDR sensors, Real time clocks and IR sensors to achieve the goal of the this project. Vacuum robot will have several criteria we are user-friendly.

Yi Song Park, Young Pung (North Korea)
Purpose of the invention is to provide a remote controllable automatic moving vacuum cleaner having a body that is movable in the forward, backward, leftward, rightward direction by remote control using power source, According to the invention, a remote controllable automatic moving vacuum cleaner comprises of a body

MULTIPURPOSE AGRICULTURE MACHINE

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ABSTRACT

Energy demand is one the major thread for our country. Finding solutions, to meet the Energy – demand is the great challenge for social scientist, engineers, entrepreneurs and industrialist of our country according to them, applications of non-conventional energy is the only alternate solution for conventional energy demand. Now a day the concept and technology employing this non-conventional energy becomes very popular for all kinds of development activities. One of the major area, which finds number applications are in agriculture sectors. Solar energy plays an important role in drying agriculture products and for irrigation purpose for pumping the well water in remote villages without electricity. Here we are fabricating the agriculture multipurpose machine is a new innovative model which is mainly used to water spraying, weeding and the seed sowing. Our main aim of this concept is to reduce the man power and also avoid time consumption and to utilize solar energy.

Keywords; 3 Way Agriculture M/C, Multiprupose, Effortless Machine

1. INTRODUCTION

For the proper growth of plants like tomato, cotton, graphs etc. there is need of keeping away this plants from different disease and also the unwanted grass should be removed from the farm field after the specific interval of time. For this lot of effort are require and also the different agriculture equipment's which needed lot of money. The agriculture equipment like spraying machine, dusting machine, cutting machine are used to spray the pesticides solid liquid or mist and the cutting machine is used to harvest or used as a grass cutter in the farm field. Also the pesticides are spreads for improving the quality of the crop therefore the pesticides should be sprayed uniformly all over the plant. For spraying the pesticides uniformly the spraying machine and dusting machine is required. Agriculture is the backbone of India. Paddy and Wheat is one of the new targets in agriculture where still, not many researchers and manufacturers participate. This field faces some problems such as how to maximize the profit, how to increase productivity and how to reduce the cost. In India, two types of agricultural equipment are used, manual method (conventional method) and mechanized type.

Mechanization involves the use of a hybrid device between the power source and the work. This hybrid device usually transfers motion, such as rotary to linear, or provides ample of mechanical advantages such as increase or decrease or leverage of velocity. Agricultural machinery is machinery used in farming or other agriculture. Mechanized agriculture is a process of using agricultural machinery to mechanize the work of agriculture, greatly increasing farm worker productivity.In modern times, powered machinery has replaced many farm jobs formerly carried out by manual labour or by working animals such as oxen, horses, and mules. The entire history of agriculture contains many examples of the use of tools, such as the hoe and the plough. But the ongoing integration of machines since the Industrial Revolution has allowed farming to become much less labour-intensive. The biggest profit of automation is that it saves the labour. However, it also saves energy and materials and to improve the quality, accuracy, and precision. The seed feeding, pesticides sprinkling and crop cutting are the important stages in the agriculture field.

LITERATURE SURVEY

International Journal of Innovative Research in Science, Engineering and Technology.(February,2018) Power conversion efficiency has certainly been a very popular topic in solar industry. PV inverter manufacturers have invested significant amount of effort to achieve even a 0.1% higher efficiency year over year. But just how important is efficiency to a solar system? The U.S. installed more than 7 GW of solar in 2014. Every single installation required some type of power conversion from DC (solar panel) to AC (grid). To simplify the discussion, if we assume 97% efficiency for the inverter loss, that equals about 6.86 GW of AC power generated. If all the inverters performed at 98% power conversion efficiency, and all else being equal, that number would be 6.93 GW. That is a 70-MW difference and equivalent to a large utility-scale PV plant! Higher efficiency equates to more energy harvest and is therefore critically attributed to the total revenue stream of the PV system. The PV inverter is a complex piece of equipment made up of thousands of components. Roughly 80% of losses come from a switching device and AC inductors. One of the most critical components within PV inverter is this "switching device" or semiconductor device being used to perform DC to AC conversion.

International Journal of Recent Development in Engineering and Technology (April,2015).

NEW ECO-FRIENDLY GYPSUM MATERIALS FOR CIVIL CONSTRUCTION

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ABSTRACT

The sustainable world's economic growth and people's life improvement greatly depend on the use of alternative products in the architecture and construction, such as industrial wastes conventionally called "green materials". This paper concerns the main results of an experimental work carried out with the objective of developing new composite materials based on gypsum and incorporating waste material as granulated cork, a by-product of cork industry, and cellulose fibres, a waste of paper industry. Such materials are intended to be used as composite boards for non structural elements of construction, such as dry walls and ceiling. Cork (bark of the plant Quercus Suber L), a substance largely produced in Portugal, is a material whose characteristics are of considerable interest for the construction industry. It is regarded as a strategic material with enormous potential by its reduced density, elasticity, compressibility, waterproof, vibration absorption, thermal and acoustic insulation efficiency. During the first stage of this research work the gypsum binder and its properties were studied. Then, composites with mineral additions (added to increase the waterproofing and resistance) were also developed and submitted to tests to determine their physical and mechanical properties. In last stage, reinforced composites using different industrial by- products have been developed. This paper will present the properties and the manufacture methods used to produce the above mentioned eco-friendly composites that can ease ways for using industrial wastes as new construction materials, with excellent inherent thermal and acoustic properties.

INTRODUCTION

The gypsum is a large used material in building construction by its diverse applications. However it is up till now a material with a lack of know-how, mainly at research level. The European production of extracted gypsum attained 21milions in 1996. The European industry has 220 factories that produce gypsum products and employ, direct or indirectly, more than 400 000 people. In Portugal it have been produced about 500 000 ton of gypsum for ear since 2000. The building sector consumes about 95% of total gypsum produced. It is calculated that about 80 to 90% of finishing interior work and partition walls in buildings are made of gypsum products, such as plaster and card gypsum. According to those thermal and acoustical properties, these products contribute significantly for the comfort of millions of persons. Having an extraordinary resistance to fire, the gypsum products contribute for the buildings security, particularly in public buildings such as cinemas.

One of biggest deficiencies of gypsum as construction material is the low resistance to water presence. Although, actually, this aspect can be partially solved by adding to the gypsum some compounds based on silicones or other polymers, namely in gypsum card boards. This way, gypsum can be submitted to humid conditions, but even so do not permit utilization in external environments because of its low resistance to long direct contact with water.

The main purpose of this research work was the developing of gypsum boards with enhanced mechanical and water resistance. To these boards were also incorporated wastes to turn them more lightweight and sustainable. It was intended to show that the manufactory of these boards for not structural construction elements is possible, for example, for internal and external coverings, dry walls and ceiling. For this, it was carried out the characterization and improvement of gypsum as construction material, turning it more resistant to water action. After, applications of this enhanced gypsum based material were studied focused on the mixture preparation, methods of casting and its corresponding physical performance. The results obtained shows that the water resistance improvement can be achieved, above all, through the reduction of water content in paste, by the addiction of a mineral admixture, that act also as a retarder, and by replacing the traditional casting procedure by pressure curing. To improve the flexural behaviour and to achieve more lightweight boards with better thermal and acoustical properties, it was studied the incorporation of wastes or by-products (granulated cork and waste paper at pulp state).

MATERIALS

For this study four commercial available types of gypsum were selected: one plaster gypsum, recommended for manual application, one for projection, one for finishing and one escayola gypsum. According to the developed chemical analysis of these gypsums it was verified that the manual plaster and escayola gypsum presented a bigger purity than the finishing plaster one by the higher calcium sulphate content ($CaSO_4$). For this reason, these plasters were selected as the main materials for this research work. In terms of particle dimensions

CHABOT USING PYTHON

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ABSTRACT
In today's world computers play an important role in our society. Computers gives us lots of information also helps us in many manner. Chatbots, or conversational interfaces as they are also known, present a new way for individuals to interact with computer system. A chatbot allows a user to simply ask questions in the same manner that they would address a human. The most well-known chatbots are voice chatbots: Alexa and Siri. However, chatbots are currently being adopted at a high rate on computer chat platforms. Chatbot recognize the user input as well as by using pattern matching, access information to provide a predefine acknowledgment.

1. INTRODUCTION
1.1 Motivation
Before the invention of the computers if any person want's the information they refer the books or ask any other person for that information. Later on when computer were invented the person try to fetch the information from the web pages. But the disadvantage of the web pages is that if any person asks the question then it does not get the satisfactory answer. So there is the new technology called as a Chabot.

1.2 Problem Definition
There are many websites which takes time to provide information related college. Any college websites if we want some information regarding college the college website will provide the information but user needs to navigate many links. This navigation process is time consuming there is no guarantee that user name find the information he/she is looking for.

If user has queries regarding college activity e/she needs to personally visit corresponding staff to clear his/her doubt. Staff f has to take some time from their busy schedule to clear the doubts of students. In this process both students (question) and corresponding college staff has to sacrifice some of their time from their busy schedule.

1.3 Objective of Project
The main objective of this project is that, to fetch the exact information from the chatbot. By using the chatbot, the user can get the exact required information or satisfactory answer without getting unwanted information.

2. LITERATURE SURVEY
In today's world computers play an important role in our society? Computers give us information; they entertain us and help us in lots of manners. A chatbot is a program designed to counterfeit a smart communication on a text or spoken ground. But this paper is based on the text only chatbot. Chatbot recognize the user input as well as by using pattern matching, access information to provide a predefined acknowledgment. For example, if the user is providing the bot a sentence like "What is your name?" The chatbot is most likely to reply something like "My name is Chatbot." Or the chatbot replies as "You can call me Chatbot." based on the sentence given by the user. When the input is bringing into being in the database, a response from a predefined pattern is given to the user. A Chatbot is implemented using pattern comparing, in which the order of the sentence is recognized and a saved response pattern is acclimatize to the exclusive variables of the sentence. They cannot register and respond to complex questions, and are unable to perform compound activities. Chatbot is relatively a new technology. The application of a Chatbot can be seen in various fields in the future. This paper covers the techniques used to design and implement a Chatbot. Comparisons are made, findings are discussed and conclusion is drawn at the end.

3. METHODOLOGY
College Enquiry Chat Bot project will be built using artificial intelligence algorithms that will analyse user's queries and understand user's message. This system will be a web application which will provide answers to the queries of the students. Students will just have to register and then login to the system and then ask the query to the bot that will be used for chatting. Artificial intelligence is used to answer the student's queries. The student will get the appropriate answers to their queries. The answers will be give using the built in artificial intelligence algorithms. Students won't have to go to the college to make the enquiry. The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user. The user just has to register himself to the system and has to login to the system.

EFFICIENT SPEED CONTROL OF THREE PHASE INDUCTION MOTOR USING VECTOR CONTROL METHOD

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ABSTRACT

This paper deals with design and analysis of a 3-phase induction motor drive using Vector control Method on an integrated DSC (digital signal controller) system manufactured by Microchip. The system integrates into a single board the computational power of dsPIC30f2010 DSC with extra peripherals needed in vector control application, and therefore require minimal hardware development. The vector control system consists of a power circuit having a three –phase IGBT based bridge inverter feeding a three phase squirrel cage induction motor and the control circuits, which comprise of sensors(for sensing speed and current signals), interfacing circuits and control software (processed in DSC). The sensed speed and the sensed winding currents of the three phase are used as feedback signals for the closed loop control structure. Test results are presented for different load, various speeds with stator winding currents. On the developed vector control drive system.

Keywords: Digital Signal Controller, vector control, Induction Motor

I. INTRODUCTION

The motor control industry is a aggressive sector.Each industry to remain competitive must reduce costs but also has to answer to power consumption reduction and EMI radiation reduction issues imposed by governments and power lobbies. To preserve the environment and to reduce green house effect gas emission, governments around worldwide are introducing regulation requiring white good manufactures and industrial factories to produce more energy efficient appliances. This is reason why appliances designers and semiconductor suppliers are now interested by the design of low cost and energy efficient variable speed drives. DC motors are simple in control and offer fast dynamic response, High initial and maintenance costs of dc motors needs a substitute having all these advantage as well as capable of eliminating these problems. Three-phase squirrel cage induction motor is a good option due to its brushless robust structure and free from regular maintenance. Vector control mode of operation is defined as a control technique in which two equivalent control signals are produced to control torque and flux in decoupled manner. When three- phase squirrel cage induction motor is operated in vector control mode, its response improves considerably and it acts as a better substitute for the separately excited dc motor. In addition it can improve the motor's dynamic and steady state characteristics.[4]

In this investigation, an indirect vector control method is implemented. Three-phase squirrel cage induction motor is fed from a current controlled voltage source inverter. The current and speed signals are fed back to the closed loop control structure. The control algorithm is processed in real time using digital signal controller (DSC), namely dsPIC30f2010,This DSC has built in features like 16/32 bit timers, 6channels of 10 bit analog to digital converters, digital input and output units, 4 input capture ,1UART, 1 SPI, 1 I2C,6 PWM outputs along with central processing unit. Therefore, using such signal processors the hardware required for realizing a real time controller is reduced leading to improvement in reliability, yields enhanced operations, fewer system components, lower system cost and increased efficiency. The various graphs/waveforms are analyzed and studied on storage oscilloscope. The closed loop hardware control of the motor is developed and the results are studied and analyzed.

II. ANALYSIS OF CONTROL SCHEME

The purpose of the vector control scheme is to maintain the air-gap flux of AC Induction motor constant in order to achieve higher run-time efficiency.[10] The magnitude of stator flux is proportional to stator currents and finally controls the rotor currents. If stator current is kept constant the stator flux remains constant & motor torque will only depends upon slip frequency. However, when fast dynamic response and greater speed accuracy are needed, Thus closed-loop speed control methods are essential, but a precise feedback system must be used to sense the rotor speed and adjust the inverter frequency accordingly.[6][8]

The vector control method controls the frequency, amplitude and phase of motor drive voltage. The Key to Vector control is to generate a 3-phase stator voltage to control 3-phase stator currents. These 3-phase stator currents control the rotor flux linkage vector and finally control the rotor currents. The rotor current cannot be measured directly because the rotor is a steel cage and there are no direct electrical connections. Hence The measured parameters are Instantaneous stator phase currents, i_a, i_b, i_c, Rotor mechanical velocity and rotor

HEXAPOD-3D RECONSTRUCTION

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ABSTRACT
Over the last two decades the research and development of legged locomotion robots has grown steadily. Legged systems present major advantages when compared with 'traditional' vehicles, because they allow locomotion in inaccessible terrain to vehicles with wheels and tracks. However, the robustness of legged robots, and especially their energy consumption, among other aspects, still lag behind mechanisms that use wheels and tracks. Therefore, in the present state of development, there are several aspects that need to be improved and optimized. Keeping these ideas in mind, this paper presents the review of using legged robots for research in the field of archeology and military purpose, in addition with ultrasound tools and techniques for mapping of various inaccessible areas.

Keywords: Inaccessible terrain, 3D mapping, ultrasound tools, compact.

I. INTRODUCTION

Robots independently can also operate under the control of a computer program such as can be directly operated by operator. Six-legged robots can be used as search and rescue robots, space robots and discover robots. In these fields, hexapod robots present opportunities as having small size and practical mobility. When viewed from this perspective, six legged walking robot can be easily scroll by produced algorithms in all types of terrain is an advantage. The acceptable number of legs and the ability to move provide more controlled balance to the robot when compared to the majority of multi-legged robots. While wheeled robots are faster on level ground than legged robots, hexapods are the fastest of the legged robots, as they have the optimum number of legs for walking speed - studies have shown that a larger number of legs do not increase walking speed. Hexapods are also superior to wheeled robots because wheeler robots need a continuous, even and most often a pre-constructed path.

Hexapod robots however can traverse uneven ground, step over obstacles and choose footholds to maximize stability and traction. Having maneuverable legs allows hexapods to turn around on the spot. In comparison to other multi-legged robots, hexapods have a higher degree of stability as there can be up to 5 legs in contact with the ground during walking. Also, the robots center of mass stays consistently within the tripod created by the leg movements, which also gives great stability. Hexapods also show robustness, because leg faults or loss can be managed by changing the walking mechanism. This redundancy of legs also makes it possible to use one or more legs as hands to perform dexterous tasks. Because of all of these benefits, hexapod robots are becoming more and more common, and it will be interesting to see what modifications robot cists come up with to further improve and develop their form and function. There are many terrain where the wheeled robot cannot go further, and cannot overcome the obstacle. However legged structure overcomes that hurdle and get away from

DOOR LOCK SYSTEM USING RFID

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ABSTRACT

The RFID Door Lock is a lock that is simple to install and allows the user to easily lock and unlock doors. It will contain a RFID reader/writer and a magnetic door lock for simple use. All the user will need is an RFID tag to be able to unlock and lock the door. A LED will be used to let the user know when the door is in fact locked. The components included in the module are small and compact. Additionally, the door lock is simple and easy to install. It does not require the consumer to disassemble the door or doorframe as the door lock are merely attachments. This is also leaves the consumer with the option of using their original lock and key if they so choose. All in all, this RFID door lock should be a simple and cost effective upgrade to the average consumer's security and convenience.

Keywords: RFID tags and sensor; door lock system; stepper motor; LED; arduino

I. INTRODUCTION

The project that we will be working on is an RFID door lock that will be available to the general public at an affordable price. The goal of this project is to create a more convenient way to unlock your door than the traditional key. In the key's place is an RFID tag that will unlock the door by proximity. However, the improvements of this RFID door lock must outweigh the complications of implementation. The list of customer needs (in the Requirements and Specifications section) was constructed with that fundamental goal in mind. The design consists of two components. The first component is the actual door lock that must be installed in the doorframe. This will be controlled by a magnetic lock and will need to be powered. The second component is a relatively small module that you can install anywhere near the door. This module is responsible for the RFID sensing. It goes over the requirements and specifications determined for the RFID door lock. The requirements are inspired by surveys of various groups as well as personal interest. The specifications are designed in order to meet these requirements. These are created before the actual design of the RFID door lock had been created so the requirements and specifications may not exactly meet the final product. However, the final product is still designed with these ideas in mind. In the Functional Decomposition, the design of the final product is shown and explained. This also documents the tests and complications confronted throughout the design. The design is split into 5 modules which were tackled individually until finally bringing the whole product together. The necessity of each module is included.

A. Motivation

The motivation for doing this project was primarily an interest in undertaking a challenging project in an interesting area of research. The opportunity to learn about a new area of computing not covered in lectures was appealing. This area is possibly an area that. We might study at postgraduate level. Actually this was a challenging part which brought a keen interest to us to look into this topic.

B. Scope of the work

The RFID Door Lock is a very cheap and affordable design that allows convenience and security for users. The design is relatively small and easy enough to install with just a couple of screws. Of course there are additional features that can be added in order to improve the system as a whole. However, it is important to note the cost of the improvement should be taken into consideration. The following are a few ideas that can be implemented without adding much cost to the design as a whole. These are just a few of the ideas for the RFID Door Lock in which improvements can be made to further improve both the security and convenience of the product. The project will, have software and hardware work implementation. In future, the improved vision of micro controller will be more useful. In serial communication and Robotics everywhere we need Microcontroller to store program in it.

II. RELATED WORKS

In this paper, the proposed security system contains gate locking system using passive type of RFID. The system stores all the necessary information about the user. A new user is first registered with the system and the corresponding information is burn in RFID tag. This RFID tag will be accessible through the system. When registered users comes to the entry point, and put the tag into reader, the system checks whether it is registered user or imposter. If the user is registered one then the tab information is matched with the user information stored in system. The gate is open to entry of the user after successful authentication and close automatically

PEER TO PEER FILE SHARING ANDROID APPLICATION

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ABSTRACT

Peer to Peer file sharing systems are discussed in a lot of academic research. Many Peer to Peer applications are available which work on the computer and mobile, such as Gnutella, Napster, Bittorent, and SymTorrent. File sharing causes a lot of the traffic on the network, thus some of the technology is used to reduce the traffic and find the files easily. Mobile devices are becoming multifunctional, so why not create a peer-to-peer file sharing system between the mobile devices. In this paper a Peer to Peer file sharing system between mobile devices is designed and implemented using Bluetooth as a communication protocol. The application allows J2ME and MIDP (Mobile Information Device Profile) enabled mobile devices to share and publish the files in the network over Bluetooth, search for specific types of files such as (music, picture, text, and program) and download them onto its local memory. It is possible to develop the system in the future, to add more features and the capacity to work on more than one operating system for mobiles. The application was implemented and tested successfully between more than two mobile devices using an emulator in Wireless toolkit. The application fulfils the basic requirements for peer-to-peer file sharing. In addition, the application was implemented on two Nokia devices successfully, except the downloading files did not work, which is because the operating system for Nokia devices is Symbian. As a result some libraries did not work. The application allows the user to share and search for any type of file within range of the Bluetooth.

INTRODUCTION

File sharing is the practice of distributing or providing access to digitally stored information, such as computer programs, multimedia (audio, images and video), documents, or electronic books. It may be implemented through a variety of ways. Android ly new mobile operating system developed by Google and the Open Handset Alliance. Officially released in October 2008, it has revolutionized mobile application development due to the fact that it is open source. It allows developers unparalleled freedoms to create varied and interesting applications. Based on the Java programming language, it is touted as being easy to pick up and master, whilst the underlying is a modified Linux kernel. Some of Android's biggest draws for developers include the relative simplicity of developing using Java syntax, which means quickly producing applications. Also, Android provides easy yet secure access to first and third party applications, allowing deeper integration between components in different programs, and encourages software sharing and reuse. The user interface can be built quickly and simply through XML or graphically, and once an application has been finished it can be submitted to Android market, a portal through which developers can make their creations available to Android users, either free or for profit. Cloud computing has been viewed in several forms. There has been no single view that has decidedly become the obvious candidate; however there are some common elements between them all. The most glaring of these is that it is a form of distributed computing, in that distinctly separate systems link together to form a cloud. Also, there is an idea of on-the-fly scalability, that machines can join and leave the cloud as required. One definition of cloud computing is that of a pool of computational resources, linked together to provide a greater processing power. These are projects which involve supporters installing software on computers at home, which connect, when idle, to their respective clouds over the internet and compute small parts of complex scientific calculations. Another use of the term is to provide some form of data syncing. One more idea of cloud computing is that of peer-to-peer systems. This form has been used for many years for file sharing, recently implemented for services such as Skype. These services reduce load on their servers by passing data directly from user to user.

Java is a general-purpose, concurrent, class-based, object-oriented computer programming language that is specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that code that runs on one platform does not need to be recompiled to run on another. Java applications are typically compiled to byte code (class file) that can run on any Java virtual machine (JVM) regardless of computer architecture. Java is, as of 2012, one of the most popular programming languages in use, particularly for client-server web applications, with a reported 10 million users. Java was originally developed by James Gosling at Sun Microsystems (which has since merged into Oracle Corporation) and released in 1995 as a core component of Sun Micro systems' Java platform. The language derives much of its syntax from C and C++, but it has fewer low-level facilities than either of them. The aim of this project is to design and implement a file sharing application for Android based devices. This

PROTECTION, MONITORING, CONTROLLING AND LOAD SHARING OF 3-PHASE INDUCTION MOTOR USING IOT

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ABSTRACT
This paper presents a review of protection, monitoring, controlling and load sharing of 3-phase induction motor comparing different methods of implementation of this technique. Power is of main concern which needs to be monitored and controlled. The design contains Arduino connected to different sensors such as current and voltage measurement sensor, Wi-Fi module or monitoring and controlling a 3-phase induction motor problems. The design gives protection of induction motor from faults i.e. overcurrent, overvoltage, under-voltage and single phasing, monitoring for voltage and current, manual and automatic ways to control induction motor and load sharing also. Protection of these motors is very important because of inclusion in most of the industrial applications use induction from due to their high robustness, reliability, low cost, maintenance and high efficiency.

Keywords: Internet of things (IoT), voltage and current sensor, Wi-Fi module, contactor, relay, Arduino

INTRODUCTION

Within the advancement of electrical technology, the dc motors are broadly used in different industrial applications. After the innovation of ac motors particularly ac induction motors, the view of industries has changed due to the wide advantage of induction motors. An induction motor has two main parts- stationary part and rotating part. An induction machine is known as a rotating transformer since it works on the principle of transformer. The main advantages of the 3-phase induction motors are self-starting, rugged construction, good pf and low cost but without compromising the efficiency the speed cannot be controlled.

Different electrical faults may occur due to unbalanced 3-phase supply, over-voltage, under-voltage, over-current, single –phasing, mechanical faults: The mechanical faults occur due to broken rotor bar, air gap eccentricity, damage in bearing, rotor and stator winding failures.

To ensure the reliable operation of induction motors recent advancement techniques are used which include monitoring and controlling, automatically. Internet of Things (IoT) is the recent development to control and monitor the motor from remote location. This method provides easy control and reliability. The reliability of 3phase induction motor is obtained by continuous monitoring of electrical parameters. If any abnormal value of electrical factors is detected, the 3- phase induction motor is controlled automatically i.e. suddenly turns-off to reduce the various type of faults.

The aim of this paper is to make the control easy, fault detection, monitoring and load sharing. The technique is designed to allow easy use of a mobile phones to control industrial appliances like induction motor from any location. By using a mobile phone, the development of the control system will be carried out using android application. This will be communicating with Wi-Fi module, which in turn will control the device attached to microcontroller modules. When the action has been carried out, a response will be sent to the user by using application or site.

OBJECTIVES OF STUDY

1. To monitor and control an induction motor based on IoT for safer and economic data communication in industrial fields.

2. To start or stop the induction machine to avoid system failures by automatic and manual control methods.

3. To monitor and control the motors used in electric vehicles.

MOTOR PARAMETERS AND REFERENCES

The Parameters that are taken for protection of three phase Induction Motor are over-current protection, protection from unbalanced load, single-phasing fault protection, under-voltage protection and overvoltage protection. Motor reference values are taken as

Voltage=415V, Frequency=50Hz, Rated Current(I_s)=1.5A, RPM=1449, Power Factor=0.83, Rated Power=0.75KW.

AN OVERVIEW OF INTRUSION DETECTION BASED ON DATA MINING TECHNIQUES

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ABSTRACT

Intrusion-detection systems goal is to detect attacks beside computer systems and networks or, in general, beside information systems. The aim of an ID is to detect malicious traffic. In order to achieve this, the IDS monitor all incoming and outgoing traffic. There are some approaches on the implementation of IDS. Among those, two are the most common: Anomaly detection is based on the detection of traffic anomalies. The nonconformity of the monitored traffic from the normal profile is measured. Various different implementations of this technique have been projected, based on the metrics used for measuring traffic profile deviation. And other one is Misuse/Signature detection which looks for patterns and signatures of already known attacks in the network traffic. A continuously updated database is usually used to store the signatures of known attacks. The way this technique deals with intrusion detection resembles the way that anti-virus software operates. In recent years significant attention has been given to Data Mining approaches for addressing network security issues. As there are different data mining techniques as Association Rules, Frequent Episode Rules, Classification, Clustering which gives the appropriate results but combination of all this techniques can achieve better results. Different classifiers such as combination of clustering and classification or other techniques can be used to form a hybrid approach. In this paper, I have reviewed the hybrid learning approach by combining different techniques of data mining to achieve best possible high detection rate and low false alarm rate.

1. INTRODUCTION

Intrusion detection is the practice of monitoring and analyzing the events occurring in a computer system in direction to detect signs of security problems. An intrusion detection system (IDS) monitors networked devices, also looks for anomalous or malicious behavior in the patterns of activity in the audit stream. Intrusion detection is an area rising in significance as more sensitive data are stored and managed in networked systems.

Usually, intrusion detection techniques are classified into two broad groups:

Misuse Detection: It works by searching for the traces or patterns of well- known attacks. Clearly, only known attacks that leave characteristic hints can be detected that way. Anomaly detection: It uses a model of normal user or system behavior and ages significant deviations from this model as potentially malicious. This model of normal user or system behavior is commonly known as the user or system profile. Strength of anomaly detection is its ability to detect formerly unknown attacks.

Additionally, Intrusion Detection systems (IDs) are characterized as per the kind of input information they study. This leads to the variance among host-based and network-based IDSs. Host-based IDSs analyze host-bound audit sources for instance operating system audit trails, system logs, or application logs. Network-based IDSs analyze network packets that are captured on a network.

Data mining supports to understand normal behavior inside the data and use this knowledge for detecting unknown intrusions. Different Data Mining techniques for example clustering and classification are proving to be beneficial for analyzing and dealing with large amount of network traffic.

Clustering is an unsupervised learning technique that can handle unlabeled data i.e. it can notice unknown attacks. While classification is a supervised learning technique that can handle only labeled data i.e. it can detect only known attacks. Clustering is more appropriate than classification in the domain of intrusion detection to achieve high detection rate and low false alarm rate. The best possible high detection rate and low false alarm rate can be attained by using Hybrid learning methods.

2. REVIEW OF RELATED WORK

Security of network systems is becoming a significant issue, as more and sensitive information is being stored and manipulated online. So it is essential to find an effective way to protect it. An intrusion can be well-defined as "any set of actions or a type of attack that attempt to negotiate the integrity, confidentiality or availability of a resource" [1]. An Intrusion Detection System (IDS) is a system that plays an significant role to secure a network system and monitor network activities automatically to detect malicious attacks.

APPLICATION OF IOT BASED SYSTEM FOR AGRICULTURE IN INDIA

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ABSTRACT
We live in 21st century, everything here is technology based. Agriculture plays vital role in development of the country. In India most of the people are having farming as prime occupation. There are some issues in traditional way that causes bad effect in farming. Hence to overcome this issue we have to make agriculture smart using automation and IOT. The highlight feature of this system is the precision farming, soil moisture, agricultural drone. This system will work automatically as per certain scenarios arises.

1. Keywords: Soil moisture, Agricultural Drones, IOT, smart greenhouses, smart farming, precision farming.

2. INTRODUCTION

We live in 21st century, everything is automated. In fact, it should because doing such things without technology is very difficult task. Agriculture is considered as the basis of life for the human species. It plays main role in the growth of country's economy. It also provides large ample employment of economic condition of the country. Unfortunately, many farmers still use the traditional methods of farming which result in low yielding of crops and fruits but wherever automation has been implemented and human beings had been replaced by automatic machineries, the yield has been improved IOT is one of those growing technology.it is a shared network of objects where these objects interact with the internet.

According to the current sex ratio of earth. The global population is set to touch 9.6billion by 2050.So to feed this large population, the farming industry must embrace IOT against the challenges such as extreme weather conditions, rising climate change, insufficiency of water and the demand for more food has to be met.

3. What is smart farming and what its purpose?

Smart farming is a capital hi-tech system of growing food cleanly and sustainable for the masses. In IOT based smart farming a system is built for monitoring the crop field with the help of the sensors and automating the irrigation system. The farmer can monitor the field condition form anywhere and it is highly efficient as compared with the conventional approach.

4. Purpose

-automation

-efficient

-climate independency

-reducing wastage of resources

-maximizing crop yield

5. Sensors and equipment-

What is sensor? It is a device which detects or measures a physical property and records, indicates, or otherwise responds to it. Precision agriculture allows farmers to maximize yield using minimal resources such as water, chemical fertilizers and seeds by developing sensors and mapping fields, farmers can begin to understand their farms at micro scale. These sensors will sense different conditions and will work according to it. Following are the few sensors which are used in agriculture.

1. Agricultural Drones -

Many types of drones are available today, but not all are good candidates for farming. Those suitable for agricultural applications fall into two categories: Fixed-wired and multi rotor these fixed-wired drones have long range capacity. An advantage when a large area is to be covered. And the multi-rotor

ARDUINO BASED SMART IRRIGATION SYSTEM

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ABSTRACT

The population of the world is around 7.4 billion and is expected to rise up to 10 billion by the year 2050. With this growth in population there will be huge demand to fulfil their needs and through smart automation we can lessen their burden. Our aim is to make a smart irrigation system which will be low in cost, power efficient and eco-friendly. This system is based on Arduino which is powerful still very cost-effective platform. The system can operate at as low as 5v thus making it very power efficient. The system uses moisture sensor through which it senses water content in soil and once it senses that humidity of soil is below certain defined level it turns on motor until moisture level is achieved. The main advantage of this system is that if it is installed once it does not require any human intervention or any kind of maintenance thus cost effective even in long term. Besides, it only takes in water as it is required and hence leading to less use of water. It can be used in various applications like farming, gardening at home and office. If someone is on vacation or has to go outstation then he can go without worry of watering his plant as this system works flawlessly without any need to turn on or turn off. The main highlights of the project are low cost, saves water and power, completely automated and no special maintenance is needed.

Keywords: Arduino, Soil moisture sensor, pH sensor

INTRODUCTION

Around 71% of earth surface is covered with water of which 96.5% is sea water. The available 3.5% is freshwater is sourced from rivers, lakes and ground. This water is used in various applications like drinking, industries, agriculture, etc. Agriculture is fully based on freshwater and it uses around 69% of used freshwater. Drought is still a major problem in our world so it is very important to use available water resources in a efficient way. Farmers in India are still dependent on rain for farming. Different crops need different parameters of soil humidity, pH values and temperature to grow. But due lack of knowledge, farmers do not take this in to consideration and do farming which may lead to their loss.

Agriculture is one of the most important part of an Indian economy. Agriculture accounts for 18% of India's GDP and of all the work force India has 50% is involved in agriculture. As India is developing country people still use traditional ways of farming, cultivation and irrigation. Before sowing any seed. the farmer must be aware of the quality of soil because the soil parameters are different at different places. Farmers still use old irrigation system which requires lot of power and there is wastage of water. This kind of irrigation is completely manual and need to be monitor constantly. This can also lead to under irrigation which will result in drying of crops and over irrigation which can lead to increase in salinity of soil which will make land infertile. Automation can be used to do irrigation. Automation do the work with precise accuracy and with more efficiency than any human being. It will work flawlessly 24x7 without need of maintenance or any kind of attention. Needless to sayour future is set based on automation and IoT agriculture will be a no stranger.

OBJECTIVES OF STUDY

1. To understand the concept of irrigation.

2. To understand the concept of soil humidity, pH in agriculture.

3. To develop a smart irrigation system to water crops and test soil qualities.

CONCEPT

A. What is Arduino?

Arduino is an open-source platform for designing and developing electronics devices and modules. Arduino has a different micro-controllers like uno, nano, mega, etc.Arduino has an IDE for writing and debugging codes which can be loaded into its memory via USB.There are various sensors and modules available in market for Arduino which can programmed and used according to our needs.

B. Why Arduino?

Arduino is an open-source platform which makes it royalty free. Arduino platform is simple to use and build. It is inexpensive to buy and comes in various configurations and we can choose the right platform as per our need. Arduino micro-controllers operates at very low voltage making them power efficient. Arduino IDE works on

CONVERSION OF PLASTIC WASTES INTO DIESEL

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ABSTRACT
Plastics are natural / synthetic material. Plastics have become in indispensable part in today's world. due to their light-weight durability ,energy efficiency ,coupled with a faster rate of production and design flexibility ,these plastic are employed in entire gamut of industrial and domestic areas. Plastic are non degradable polymers of mostly containing carbon, hydrogen and few others elements such as chlorine, nitrogen etc. Due to its non-biodegradable nature. The plastic waste contributes significantly to the problem of municipal waste management.

The present paper aims to study to solve the twin problem of environment pollution due to plastic and the need for an alternative fuel source. A small farm can use a device this size and make fuel for itself by converting plastic waste to fuel, farms have very much plastic waste and it is a big problem, at least in our country.

Keywords: Low density Plastic wastes, Diesel, Pyrolysis

INTRODUCTION
Plastic is a high molecular weight material that was invented by Alexander Parkes in 1862. Plastics are also called polymers. The term polymer means a molecule made up by repetition of simple unit. Plastic are natural / synthetic materials. Plastics have become indispensable part in today's world. Due to their light-weight durability, energy efficiency, coupled with a faster rate of production and design flexibility, these plastic are employed in entire span of industrial and domestic areas. Plastics are non degradable polymers of mostly containing carbon, hydrogen and few others elements such as chlorine, nitrogen etc. Due to its non-biodegradable nature. The plastic waste contributes significantly to the problem of municipal waste management.

So here we will convert waste plastic into diesel, plastics are shredded and then heated in an oxygen- free chamber (known as pyrolysis) to about 350 degrees Celsius. As the plastics boil, gas is separated out and often reused to fuel the machine itself. The fuel is then distilled and filtered. Because the entire process takes place inside a vacuum and the plastic is melted- not burned, minimal to no resultant toxins are released into the air, as all the gases and or sludge are reused to fuel the machine. Most of the big cities in our country produces waste at a rate that outpaces its capacity to collect and dispose it of in a safe and environmentally sound manner. Its current approaches to waste management are neither effective nor sustainable. Traditional end-of-pipe solutions to waste management problems only deal with symptoms of poor management and not the root causes.

LITERATURE SURVEY
Plastic waste into fuel using pyrolysis process, by Mantesh Basappa Khot, S Basavarajappa (Step. 2017) Volume 04 Issue 09.
Pyrolysis is generally defined as the controlled heating of a material in the absence1of oxygen. In plastics Pyrolysis, the macromolecular structures of polymers are broken down into smaller molecules and sometimes monomer units. Further degradation of these subsequent molecules1depends on a number of different1conditions including (and not limited to) temperature, residence time, presence of1catalysts and other process conditions.

Article Alternative Diesel from Waste Plastics by Stella Bezergianni , Athanasios Dimitriadis , Gianclaudio Faussone and Dimitrios Karonis (31 October 2017).
The pyrolysis of plastics and other MSW (end-of-life tires, organic wastes, etc.) for fuel production is practiced by several small-size companies worldwide, especially those of emerging economies, where industries such as cement, glass, and other energy-intensive sectors represent the reference market for this type of fuel (diesel-range hydrocarbons produced via the pyrolysis of plastics and MSW). The pyrolysis of plastics yields on average 45–50% of oil, 35–40% of gases, and 10–20% of tar, depending on the pyrolysis technology.

Plastic Waste to fuel : A Sustainable method for Waste Management by Dinish Chacko , Anirudh P. , Anuj.K, Abhijith Mohan and Akshay M.K volume 7, issue 3 , March 2016.
The global production of plastics has seen an increase from around 1.3 million tonnes in 1950 to 245 MT in 2006 [1]. In recent years, significant growth in the consumption of plas-tic globally has been due to the introduction of plastics into newer application areas such as in automotive field, rail, transport, aerospace, medical and healthcare, electrical and electronics, telecommunication, building and infrastructure, and furniture.

DESIGN ANALYSIS AND FABRICATION OF ATV KNUCKLE-HUB

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ABTRACT

The Paper presented over here deals with the Design and Analysis of Rear Knuckle-Hub required for the construction of All Terrain Vehicle (ATV). Knuckle-Hub is a critical and load sustaining component of a rear wheel assembly. It is a part which contains knuckle and wheel hub connected to suspension and braking components. The primary function of the Knuckle-Hub is to keep the wheels attached to the vehicle while carrying the vehicle load and sustaining various loading conditions as well as to allow the wheels to freely rotate enabling the safe driving conditions. Knuckle-Hub must be designed and build in such a way that it will withstand all the forces exerted on it during normal or working conditions. Knuckle-Hub must be produced in order to reduce the weight of All Terrain Vehicle (ATV) while retaining a satisfactory safety factor for better performance of the vehicle. A two step process has been used for the successful design and analysis of Knuckle-Hub. First step is modeling the Knuckle and Hub as per the structural, dimensional and design considerations set by type of suspension system used and brake assemblies as well as determination of loads acting on the knuckle and Hub. The second step is deformation and stress analysis using ANSYS software and design adjustments for reducing weight without compromising on the structural strength.

I. INTRODUCTION

Knuckle-Hub is a part which contains knuckle and wheel hub attached to chassis, suspension and braking components. The wheel and tyre assembly is attached to the hub of knuckle where the tyre/wheel rotates while being held in stable plane of motion by knuckle-hub assembly. It can be designed according to the requirement of vehicle. The proper mountings to hold braking components, Tie rod, Trailing rod and bearing should be provided at exact places. Proper material selection is of great significance in order to increase strength and reduce weight and cost of Knuckle-Hub, eventually increasing efficiency of an ATV. Design and Analysis of the Knuckle-Hub is be done using SOLIDWORKS, 2016 and ANSYS, 2019 considering and applying all the Design Topologies for optimum Design.

II. OBJECTIVE OF STUDY

1. Design and fabrication of a Knuckle-Hub that would sustain various loading effects during normal and working condition.

2. Selection of proper materials for both Knuckle and Hub which would be light in weight, cost effective and strong enough to withstand various forces exerted.

3. Development of an optimum design with less material requirement.

4. Design Knuckle and Hub with all the necessary mountings placed on the exact positions.

5. Analyze the Design for the forced exerted on it during working conditions.

6. To fabricate the Knuckle-Hub by using the final Design that have passed the analytical tests.

III. DESIGN METHODOLOGY

1. Material Selection While designing Knuckle and Hub, material selection is a crucial topic. The selected material must be light in weight and also withstand all the stresses applied on it during working conditions without failure. So to optimize these conditions, different materials for both Knuckle and Hub are used as per the magnitude and types of forces exerted on it so that it can withstand with overall light weight Knuckle-Hub assembly and without affecting the strength of assembly. The material considered for Knuckle is ALUMINIUM 7075 T6 and for the Hub is ALUMINIUM 6061 T6 as these materials fulfill all our requirements.

Material selected for Knuckle :   Material selected for Hub :

ALUMINIUM 7075 T6   ALUMINIUM 6061 T6

Properties	Values
Density (g/cm^3)	2.7
Brinell hardness Number (BHN)	95
Ultimate Tensile Strength (MPa)	310

DESIGN AND FABRICATION OF ELECTROCOIL SOLAR DRYER

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ABSTRACT
Drying of food is necessary in order to maintain its colour, taste, and also help to prevent from insect dust and rain which may damage and spoil the food product. So the drying is an excellent way to prevent the agriculture products and as well as the house hold food product in large as well as in small scale to prevent it from contamination and damage of it. Drying from the sun directly is the earliest method of drying farm produce ever known to man and it involves simply laying the agricultural products in the sun on mats, roofs or drying floors. This has several disadvantage since the farm produce are laid in the open sky and there is greater risk of spoilage due to adverse climatic situation like wind, rain, moist and dust, loss of product to insects, birds and rodents; totally dependent on good weather and very slow drying rate with danger of mould growth thereby causing deterioration and decomposition of the product. The process also requires large area of land, takes time and highly labour intensive.

In solar drying, solar dryers are specialized devices that control the drying process and protect agricultural product from damage by insect, dust and rain. In addition, it takes up less space, takes less time and relatively inexpensive compared to artificial mechanical drying. The solar dryer can be seen as one of the solutions to the world's food and energy crises. With drying, most agricultural product can be preserved and this can be achieved more efficiently through the use of solar dryer.

The present paper aim to design and fabricate the solar dryer from the reference of previous concept and design in order to overcome with the new innovative idea about the drying of agriculture products as well as other by using the convection drying method.

INTRODUCTION
The drying of agriculture products by using open air and uncontrolled sun is still existing now a day. But the main problem arising in this type of solar dryer is the uncontrollable heat and temperature and also the humidity which cause the agriculture products to damage. Solar dryers are specialized devices that control the drying process and protect agricultural product from damage by insect, dust and rain.

In addition, it takes up less space, takes less time and relatively inexpensive compared to artificial mechanical drying. The solar dryer can be seen as one of the solutions to the world's food and energy crises.

With drying, most agricultural product can be preserved and this can be achieved more efficiently through the use of solar dryer. One of the modern type of solar dryer has a black absorbing surface which collects the light and converts it to heat; the substance to be dried is placed directly on this surface. These driers may have enclosures, glass covers and/or vents to in order to increase efficiency.

AIMS AND OBJECTIVE
☐ The objective of a solar dryer is to provide ample amount of heat i.e. more than ambient heat under given humidity.

☐ It increases the vapor pressure of the moisture confined within the product and decreases the relative humidity of the drying air so that the moisture carrying capacity of the air can be increased.

☐ The moisture absorption capacity of air is affected by its initial humidity and by the temperature to which it is subsequently heated.

☐ Studying the efficiency of solar dryer for drying fruits and grains and discovering ways to improve it.MATERIAL REQUIRED

• Balsa wood.

• Epoxy paint.

• ARC coated glass.

• Solar panels.

• 12-24 V Battery.

• 4 mini computer fans.

EFFECT OF UPFC ON DISTANCE RELAY

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ABSTRACT

Among the FACTS controllers, the Unified Power Flow Controller (UPFC) is a device that control all three parameters of line power flow (i.e. line impedance, voltage and phase angle) at the same time. It is the most versatile FACTS controller for the regulation of voltage and power flow in a power system. But whenfault occurs, due to presence of UPFC in fault loop, the apparent impedance of line is affected which results inmal-operation of distance relay. This paper discusses the effect of UPFC in different modes on apparent impedance and thus on distance relay tripping characteristics.

I INTRODUCTION

Power transfer in most integrated transmission systems is affected by transient stability, voltage stability, and power stability. These parameter limit the total utilization of accessible power flow. FACTS may be a technology that creates complete use of existing transmission systems and, therefore, improve stability and thermal limit. Among the FACTS controllers, UPFC is a device which may manage all three parameters of line power flow at same time (i.e. line electrical phenomenon, voltage and phase angle) [1]. The impact of UPFC in minimizing the disturbances in voltages, currents and power flows at intervals the fault affected parallel line ought to be assessed, attribute to the presence of UPFC in associate extremely fault loop, the voltage and current signals at the relay point are going to be affected in each the steady state and thus the transient state. This in turn can have an impact on the performance of existing protection schemes, like the distance relay which is one among the really wide used ways in transmission line protection. that works on principle, impedance between the relay and fault points; the apparent impedance is then compared with the relay trip characteristic to ascertain to determine whether it is an enclosed or external fault. A typical methodology of conniving this impedance is to use symmetrical component transformation using power frequency elements of voltage and current signals measured at the relay purpose [2]

II APPARENT IMPEDANCE OF LINE

Distance relay operation is based on the apparent impedance

(measured impedance at the relaying point) of the line. When the fault resistance is equal to zero, the measured impedance by a distance relay is the actual impedance of the line section between the fault and the relaying points. Consider a single phase to earth fault as shown in Fig.1, according to figure this impedance is equal to pZ_{1L}, where p is the per-unit length of the line section located between the fault and the relaying points, and Z1L is the line positive sequence impedance in ohms.
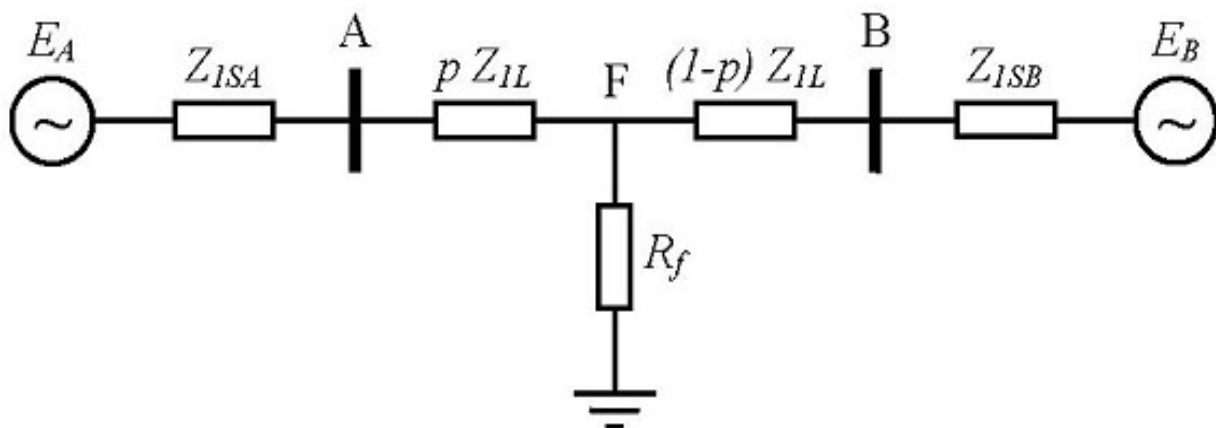

Fig.1. Equivalent circuit for single phase to earth fault

In the case of a non-zero fault resistance, the measured impedance by a distance relay is not equal to the mentioned magnitude. In this case, the structural and operational conditions of the power system affect the measured impedance at the relaying point. The operational conditions prior to the fault instance can be represented by the load angle of the line, i.e. δ, and the ratio of the magnitude of the line end voltages, i.e. h, or in general $EB/EA = he^{-j\delta}$. The structural conditions are evaluated by the short circuit levels at the line ends, i.e. S_{SA} and S_{SB}. With respect to Figs. 1 and 2, the measured impedance at the relaying point can be expressed by the following equations.

EFFICIENCY IMPROVEMENT OF VORTEX TUBE, BY VARYING INSIDE SURFACE ROUGHNESS OF CYLINDRICAL HOT TUBES

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ABSTRACT

Refrigeration plays an important role in developing countries, mainly for the preservation of food, medicine and air conditioning. Conventional refrigeration systems use Freon as a refrigerant. As they are the main cause of ozone depletion, extensive research work is underway on alternative refrigeration systems. The Vortex tube is an unconventional cooling device, without moving parts that can produce cold air and hot air from the compressed air source without affecting the environment. When a high pressure air is injected tangentially into the vortex chamber, a strong vortex flow will be created which will be split into two air flows. It can be used for any type of spot cooling or heating application. In this document, the counter-flow vortex tube is compared with different performances of hot surface roughness tubes. It was found that the vortex tube with surface roughness of $Ra = 6.264\ \mu m$ exceeded the hot tubes with surface roughness of $Ra = 4.510\ \mu m$ and $Ra = 3.133\ \mu m$ respectively from 6% to 26% and from 16% to 52% in COP . The COP of the vortex tube increases as the roughness of the inner surface of the hot tube increases

A vortex tube contains the different main parts vortex chamber inlet and cold terminal orifice, hot control valve and orifice. It works in such a way that the fluid enters the tube circles around an axis that is called a vortex. And that rotation creates a vortex from the compressed air and separates that flow into two hot and cold air flows. From its center, the super-cooled air that is delivered through the cold end door is exceeded. The surface finish of the nozzle and tube, ie the hot end, plays an important role in the performance of the vortex tube. In this document it is observed that the vortex tube with main surface roughness values of cylindrical hot tubes is used to increase the efficiency of the tube vortex. It results in COP of the vortex tube.

Keywords: Vortex chamber, Roughness value of cylindrical hot tubes, COP of the system, Efficiency of tube.

INTRODUCTION

The vortex tube is a static thermal tube that separates the flow of compressed gas into two flows; a cooler flow than the inlet flow while the other flow is warmer than the inlet flow. The vortex tube has no moving parts and separation occurs due to vortex flow generation without requiring any external mechanical work or heat transfer. The vortex tube was first discovered by Ranque [1, 2] who was granted a French patent for the device in 1932 and a US patent in 1934. Ranque encountered the vortex tube phenomenon while he was working experimentally with the vortex tube pump in 1928 In 1945 Rudolf Hilsch [3] conducted a vortex tube experiment focused on thermal performance with different inlet pressure and geometric parameters. In recent years it has been known that the vortex tube is a low cost and an effective solution to many spot cooling problems. The separation mechanism inside the vortex tube remains until now not completely understood [4]. The ability to obtain hot or cold flow streams using compressed gas has allowed the use of the vortex tube in many engineering applications such as electronic cooling, food cooling, cooling of the fire suit and machinery cooling during operation. Despite its reduced capacity, the Ranque-Hilsch swirl tube (RHVT) is very useful for some thermal management applications due to its simplicity, high durability, compactness, lightness, sturdiness, reliability, low maintenance and safety costs [5] . RHVT can be classified into two types [6]: (1) counter-flow RHVT and (2) uni-flow RHVT. In the counter-current type RHVT the cold flow moves in the opposite direction to the hot flow, while in the uni-flow type, the hot and cold flows flow in the same direction. In general, counter-current RHVT is recommended over RHVT uni-flow due to its efficient energy separation [6]. The Vortex tube is widely treated in literature through experimental and numerical analyzes. The experimental work of Nimbalkar and Muller [7] indicated that there is an optimal diameter of the cold end orifice to obtain maximum energy separation. Furthermore, the results [7] showed that the maximum value of the energy separation was always reachable with a cold fraction of 60% regardless of the diameter of the orifice and the inlet pressure. The optimal ratio between diameter and length of the hot side was studied by Dincer et al. [8, 9]. The performance of the vortex tube was studied for three different working gases: air, oxygen and nitrogen and the results were reported using strip views in a vortex tube in Perspex [10]. Aydın and Baki [10] and Hamdan et al. [11] indicated that the inlet pressure and the cold mass fraction were the most important operating parameters. Hamdan et al. [11] in their experimental work investigated the effect of numerous operating and geometric parameters on the thermal performance of the vortex tube, in which the effect of position of the vortex plug, the pressure of the inlet gas, the number were covered. of vortex generator inlet nozzles and insulation during the study. Eiamsa-ard [12] studied the effect of multiple inlet nozzles, the ratios of the

EXPERIMENTAL STUDY ON BETA STIRLING ENGINE

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ABSTRACT

This essay mainly makes an exposition of the Stirling Engine. Firstly, the history of Stirling Engine is showed to make a guide of first comprehension. Then the Stirling Engine's thermodynamic cycle is explained and the configuration is analyzed, which we do to make sure a further insight into the Stirling Engine. After that, the reasons to use a Stirling Engine are discussed, especially from an economic point of view. This is to describe why the Stirling Engine is widely used in nowadays' world. And the last part is to show out how the Stirling Engine is applied in each field. But with a special focus on sterling engines in applications with renewable energies. This whole essay displayed a broad overall presentation to the Stirling Engine, and analyzed its intrinsic value for the future.

I. INTRODUCTION

The Stirling Engine was invented by Robert Stirling. This device was born as a competence to the vapor machine, since a Stirling Engine works with smaller pressures than the device created by Watt and it did not require a qualified train engineer.With the development of the internal combustion engine and the appearance of electric engines, the machine of this study was forgotten.

Nowadays the technology that involves the invention of Robert Stirling is in completely development because of the fact that now very useful applications are available.

This document travels in the history of this curious device looking for reasons of this incredible development in this called high technology with its different applications and doing an analysis from the point of view of the economy. This project explains the principle function of the engine with a deep investigation. And we show how the Sterling Engine in combination with renewable energy sources can be part of a sustainable energy supply.

The Stirling Engine is one of the hot air engines. It was invented by Robert Stirling (1790-1878) and his brother James. His father was interesting in engine and he inherited it. He became a minister of the church at Scotland in 1816. At this period, he found the steam engines are dangerous for the workers. He decided to improve the design of an existing air engine. He hope it wound be safer alternative. After one year, he invented a regenerator. He called the "Economiser" and the engine improves the efficiency. This is the earliest Stirling Engine. It is put out 100 W to 4 kW. But the internal combustion engine substituted for it quickly. The Ericsson invented the solar energy in 1864 and did some improvements for after several years. Robert's brother, James Stirling, also played an important role in the development of Stirling engines.
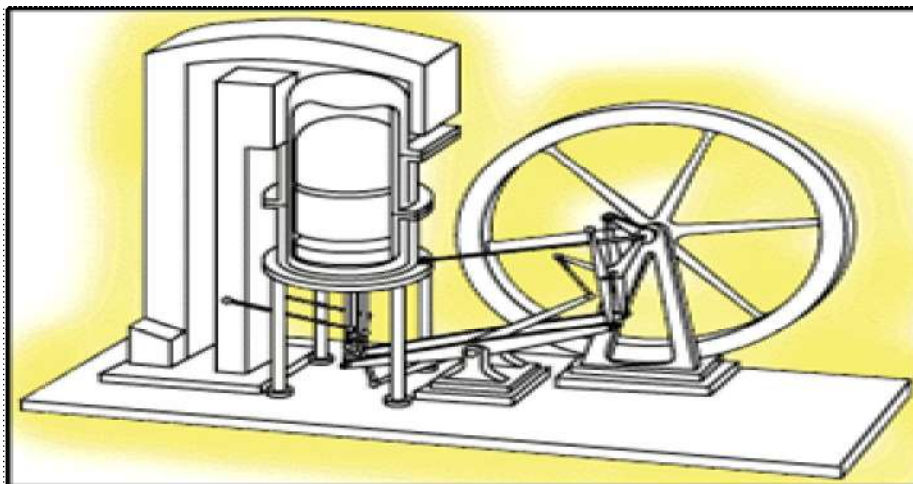
Figure: Earliest Stirling engine

Robert Stirling gets a patent for the economizer with an air engine incorporating it in 1817. Since the Stirling engine worked at a lower pressure, and could not cause steam burns, the danger to explode is impossible. In 1818 he built the first practical exponent of his engine, used to pump water from a quarry. The inventors sought to create a safer engine instead of steam engines at that time, whose boilers often exploded as a result of high pressure of the steam and the inadequate materials.

GREENING OF CHEMICAL LABORATORIES IN SCIENCE AND TECHNICAL COLLEGES

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ABSTRACT

Efficient management of laboratory has been the bone of contention amongst laboratory managers . Gone are the days when people used to carry out work in chemical laboratory spending unrestricted amount of energy, chemical, water and other utilities. Reducing waste and introduction of green practices in routine chemical lab activities have become essential considering the recurring cost, expenditure and reducing their environmental footprint as well as pressing need from regulatory institutions. Various steps have been enumerated in this study to make lab green and efficient as well as a few case studies have been presented to substantiate this. The study has special relevance to improving the efficiency in chemical laboratory of science degree and engineering colleges as never before such an effort has been made to present steps for introducing green ,efficient and sustainable practices which has been substantiated by a few case studies and examples at one place.

Keyword: Green practice, waste reduction, sustainable lab, green chemistry, efficiency, colleges.

INTRODUCTION

Around twenty years ago efficient and good laboratory practice was limited to use of pure chemicals and proper utilities to produce desired product or result of highest grade and quality. However, with the pressing need for efficient management of laboratory by the regulatory institutions and need for reducing cost as well as increasing chemical lab productivity the use of lean and green practices have become more pertinent. Broken fumehoods, confusing and dirty waste beakers,distillation apparatuses that have been running since the lab bench was installed[1] and utter disregard for energy usage as well as least concern for waste recovery and liquid , solid waste treatment[2] generated in the chemical lab are common occurences within chemistry department labs of universities.Using tap water for cooling condensers,purchase of duplicate and excess amount of chemicals , solvents than required, haphazard upkeep of chemicals,solvents , shoddy maintenance of equipments and their spares are common observations in college chemical laboratories. Use of old instruments for more than ten to fifteen years causes increase in recurring cost in their maintenance as well as require more energy than their modern versions. Even time required in getting results from them is more when compared to new ones.

Keeping in view the frugal consumption ,waste creation and recurring cost due to inefficient and lackadaisical approach to the chemical lab management issues introduction of green and efficient practices are essential to bring economy in the lab activities as well as to develop sustainable lab ethics in colleges and bring them at par with the industrial chemical laboratories. It has become more important in the present context of industry-academia collaborative activities.

In the present monograph an effort has been made to enumerate steps that can be followed to develop green, efficient and sustainable chemical lab in science degree and engineering colleges .This has been followed by specific case studies carried out in chemical labs and examples in order to substantiate the benefits of use of adopting green practices in labs.

PROCEDURE AND DISCUSSION

Notwithstanding regulatory requirements , use of green practices in chemical laboratory activity has far reaching impacts so far cost effectiveness and environmental issues are concerned.There are various ways of using green practices in chemical laboratory viz, (a) Reduction in wastage of water (b) reduction in energy usage(c) reduction in chemical waste (d) recovery of chemicals from waste (e)proper waste treatment for its discharge as effluent (f) proper management of lab infrastructure and space (g) proper record and management of inventory (h) use of green chemistry principles (i)reduction in time in lab activities.

(a) Reducing consumption of water: The various methods of reducing water consumption are : (i) use of restricting valves in taps to dispense desired flow of water (ii) automation in taps used for hand wash and cleaning glasswares (iii)Collecting desired amount of water in a sink for dish wash(iv)use of innovative techniques using pumps from discarded air coolers to reduce wastage of water passing through cooling glass condensers in lab and thereby saving recurring cost on usage of water.

The cost calculation of one such system using tap water for cooling condenser is given below:

A leibig water condenser used in synthesis chemical lab dispensed volume of water in 1 minute = 100 ml

HEALTH DIRECTORIES BASED ON ANDROID APPLICATION

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ABSTRACT

In the last decade significant progress have been made in smart phone technology as well as wireless area network technologies. Presently, due to hectic lifestyle to cope with fast pace more and more people are facing health problems. Health Directory System thus becomes an inevitable part of every family. Getting efficient and quick healthcare becomes necessity; it is an approach which can be adopted by hospital/doctors to provide quick access to health directory services to the needed person. Such as Online Medical Prescription, Scheduling Appointment, searching about nearest Hospital and about Doctor's, Uploading of medical reports with security measures necessary while consultation. One way to solve this problem is using the Android Application. Android is open supply mobile software with huge user base and simplified mobile app development method. Enterprises are leveraging Android and creating custom mobile apps for easy adoption and increase value for their business and help them to use services on the tip of their fingers. The health directory app would be build using Java and Rich Android Libraries of open source Android SDK. It would help people to search for various health care services by specifying various set of criteria and which in turn would show them appropriate services there by helping people to get proper treatment.

INTRODUCTION

When people fall sick, they often have limited information beyond their own prior experience and the recommendations of family and friends regarding which doctor to go to. Most of them who do not know the exact location of the offices of the doctors or the way to contact their intended doctors have to go through much hassle. Physicians, when making referrals to specialists, might also find themselves equipped with inadequate data. This project aims at providing them an easy way to locate the desired doctors in the country through an android app and, if needed, contact them in an instant straight from inside the app. With more individuals turning to the net as a supply of health care information, online doctor directories and corresponding mobile applications could become very valuable assets in the near future. Unfortunately, the available sites are frequently difficult to use, not objective, or contain data that's outdated, inaccurate, or incomplete. Moreover, there is no suitable android mobile application which can connect a person to his desired doctor. Our Health Directory Application is a web based application which is available in the form of a mobile application for the android platform. The project aims at maximizing the ease of use and navigation, for example, by incorporating advanced search functions and interactive features; providing a wide range of content, including the location of the office of any doctor on the Google maps; and ensuring the credibility of data by regularly updating and monitoring for accuracy.

EXISTING SYSTEM

A. Similar Online Systems and Web Applications

There are a few similar online systems or web applications which have such specific categorization of the doctors in India based on both their specialty and area of the city they live in, which is there in our proposed system Health Directory Application Besides, the few such websites which intent on providing the users with an online directory of the doctors in India is often found to contain inadequate, outdated and sometimes inaccurate data. Moreover, none of them are so user friendly as our proposed project Health Directory Application is. Some such local websites worth mentioning in terms of application and built-in directories are

B. Similar Mobile Applications

Though current age is being dominated by smartphone technology, if we consider the case of mobile applications, there is none in the online mobile application stores which aim at locating doctors' offices in the context of India. There are some mobile applications which tend to do so in the context of some technologically developed countries like the USA, England, Canada, etc. But when it comes to the countries which are technologically less developed in terms of health management, only a few have such facilities. Our project aims at inspiring those countries through setting an example by making such a system both popular and more accessible to people of all age groups in a technologically developing country like India. In order to do so, our project permits the users to access the system on android smartphones in a user-friendly manner with the app version of Health Directory Application.

INTELLIGENT TRANSPORT SYSTEM USINGGLOBAL INFORMATION SYSTEM

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ABSTRACT

Intelligent transport system refers to efforts to add information and communication technology to transport infra structured vehicles in an effort to manage factors that typically are at odds with each other like vehicles, loads and routes to improve safety and reduce vehicle wear transportation times and fuel consumption. Global information system is a computer based system which is used to digitally reproduce the features, present on the surface of earth and events that take place. Advanced Traveler Information Systems (ATIS) is one of the user services provided by ITS. With ATIS information, drivers make informed decisions and are better equipped to plan their route and estimate their travel time. Route planning is an essential component of ATIS, aiding travelers in choosing the optimal path to their destinations in terms of travel distance, travel time.

Nature has gifted man and animals the ability to move. With his intelligence man has developed transportation system leading to economic well-being. However we have to pay for this in the form of its undesirable effects as environmental impacts, energy consumption, congestion, casualties and money required to build infrastructure. This has led us to a more balanced and sustainable transportation system. Here Intelligent Transportation system comes into picture – the application of computer and communication technologies to transport problems. The old adage, 'knowledge is power' is the obvious solution to this.

In this paper, how an advanced traveler information system for a developed in GIS environment can be useful is shown. This user friendly system provides complete information of a city such as road network, tourist places within the city limits, hospitals, government and private offices, stadiums, bus and railway stations. This system provides shortest path and path to closest facility based on distance and drive time. The GIS can be used in bus stands, railway stations, airports, tourist information centers, in personal computers to give information to the travelers.

INTRODUCTION

Nature has gifted man and animals the ability to move. With his intelligence man has developed transportation system leading to economic well-being. However we have to pay for this in the form of its undesirable effects as environmental impacts, energy consumption, congestion, casualties and money required to build infrastructure. This has led us to a more balanced and sustainable transportation system. Here *Intelligent Transportation system* comes into picture – the application of computer and communication technologies to transport problems. Here *Intelligent Transportation system* comes into picture – the application of computer and communication technologies to transport problems.

Japanese seems to have initiated the whole modern day notion of ITS with work carried out in the 1980s. The United States was also addressing the application of ITS at an early stage in the course of the Electronic Route Guidance project (ERGS) in the 1970's. The European Union picked up the theme, and referred to it as Road Transport Informatics. In the course of time the name of this technology subjected to many changes until USA had given a name called ITS to it.

ATIS provides both preterit and en route information to the users, both of which offer distinctive advantages. The availability of preterit information drivers enhances their self-belief to use freeways and allows commuters to make better-informed transit choices. En route information and guidance saves travel time, helps a traveler avoid congestion, can improve traffic network performance, and is more efficient than paper maps or written nstructions.

The old adage, 'knowledge is power' is the obvious solution to this. Customers want real-time information to help them select the best route to take at any given time. They need to know traffic speeds, incidents (accidents or lane closures), and road conditions. With Advanced Traveler Information Systems (ATIS) information, drivers make informed decisions and are better equipped to plan their route and estimate their travel time. The ultimate solution has a big mandate. Critical features include accuracy, timeliness, and reliability. The ideal solution is an up-to-the minute traffic information system that enables drivers to make more intelligent travel decisions at any time of the day and any day of the week. There is wide scenario of problems, which are specific to India, and indigenous solutions are required to suit its requirement of a cost effective, efficient, reliable and at the same time compatible with the present level of development in the country in the related areas.

LAPLACE TRANSFORMS AND INVERSE LAPLACE TRANSFORMS WITH ITS PROPERTIES

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ABSTRACT

The Laplace transforms is typically used to simplify a differential equation into an easy and solvable algebra problem.The Laplace transform is used often in Engineering and Physics.The Laplace transforms provide a method to makea transfer function for an input-output system. Laplace transformation makes it simple to solve Engineering problems and makes differential equations easy to solve. In this paper we will discuss the way to follow convolution theorem holds the Commutative property, Associative Property and Distributive Property.

Keywords: Inverse Laplace transformation, Laplace transformation, Convolution theorem

INTRODUCTION

Laplace transformation is a technique which is used in the solving of differential equations by converting it from time domain form to frequency domain form. Generally it is effective in solving linear differential equations. The Laplace transforms converts a linear differential equation to an algebraic equation, which can then be solved by the formal rules of algebra. The original differential equation can then be solved by using the inverse Laplace transform. It is used in solving physical issues. The Laplace transform involving integral and ordinary differential equation.It is also used to transfer the signal system in frequency domain for solving it on a simple way. The Laplace transformation is usedin control system engineering.The Laplace transformationis used to study andexamine systems like ventilation, heating and air conditions, etc. which are used in every single modern day construction and building. It has some applications in nearly all engineering subjects, like System Modeling, Analysis of Electrical Circuit, Digital Signal Processing, Nuclear Physics, Process Controls, and Applications in Probability, Applications in Physics, and Applications in Power Systems Load Frequency Control etc.

- **Laplace Transformation**

Definition

The Laplace transform of f(t) is a well defined function of t for all $t \geq 0$, denoted by g(q)or L{f(t)}, is defined as

$$L\{f(t)\} = \int_0^\infty e^{-qt} f(t)\, dt = F(q)$$

When the integral exists, i.e. convergent. If the integral is convergent for some value of q, then the Laplace transformation of f (t) exists otherwise not. Where q the parameter which may be real or complex number and L is the operator of Laplace transformation.

The Laplace transformation of f (t) i.e. $\int_0^\infty e^{-qt} f(t)$ dt exists for q>a, if f(t) is continuous and

$\lim_{n \to \infty}\{e^{-at} f(t)\}$ is finite.

- **Inverse Laplace Transformation**

Definition:

If F(q) be the Laplace Transformation of a function f(t),then f(t) is called the Inverse Laplace transformation of the function F(q) and is written as $f(t) = L^{-1}\{F(q)\}$, $Where L^{-1}$ is called the *inverse Laplace transformation.*

General Property of inverse Laplace transformation,

1. Linearty Property

If k_1 *and* k_2 *are constants and if*

$L^{-1}\{F(q)\} = f(t)$ *and* $L\{g(t)\} = G(q)$

then,

$L^{-1}[k_1 F(q) + k_2 G(q)] = k_1 L^{-1}[F(q)] + k_2\ L^{-1}[G(q)]$

LITERATURE REVIEW ON: THE ELECTRIC BIKE

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ABSTRACT

An electric bicycle also known as an e-bike is a bicycle which use an electric motor for propulsion. there are various kinds of e-bikes are available through the world, from e-bikes that only having a small motor to assist the rider's pedal-power (i.e. pedelecs) to more powerful e-bikes which are as same as a moped-type functionality. All retain the ability to be pedaled by the rider and are therefore not electric motorcycles. E-bikes uses a lighter weight battery which can be recharged easily and help to travel up to 25 to 32 km/h (16 to 20 mph),which is to be depended on local laws, while the more high-powered varieties can often touch the speed limit of 45 km/h (28 mph). In some markets, such as in Germany as of 2013, they are gaining in popularity and taking some market share away from conventional bicycles, while in others, such as China as of 2010, they are replacing fossil fuel-powered mopeds and small motorcycles. Depending on local laws, many e-bikes such as pedelecs are legally classified as bicycles rather than mopeds or motorcycles. This frees them from the more stringent laws regarding the operation of more powerful two-wheelers which are often classified as electric motorcycles. E-bikes can also be defined separately and treated under distinct electric bikes laws. E-bikes are the electric motor -powered versions of motorized bicycles, which have been in use since the late 19th century.

Keywords- BLDC motor, controller, batteries.

I.) INTRODUCTION

An e-bicycle is one with an electric motor (attached to the bottom bracket or front wheel) that assists the rider with their pedalling. This means that while you're still getting a workout – and enjoying the scenery – you don't need to pedal nearly as hard, especially up hills. The electric vehicles industry is continuously evolving. One type of such electric vehicle is the electric bicycle (e-bike). E-bikes typically incorporate a battery, which can be charged at an ordinary domestic power socket, linked to an electric motor in the bicycle transmission system. The rider have the power to controls the output power from motor i.e speed using a handlebar mounted computer display panel and controller. The term 'e-bike' is generic and includes a combination of different electrically powered two-wheelers some of which function by simply turning a throttle. Electric bicycles, like other electric vehicles, use a BLDC motor. Main reason to identify the need of finding and modifying E-Bike is to overcome the issue of the pollution because of vehicles in metro towns & urban zones is swelling uninterruptedly. Considering the all class of society it is not reasonable for all to purchase (scooters, mopeds or motorcycles). So, combining both issues, environmental progress supporting and economical affordable alternative would be the best solution. In the modern days, the primary concern of government is to find out a way by which we can minimize consumption of fossil fuel and promote the use of electric vehicle ourdaily life.

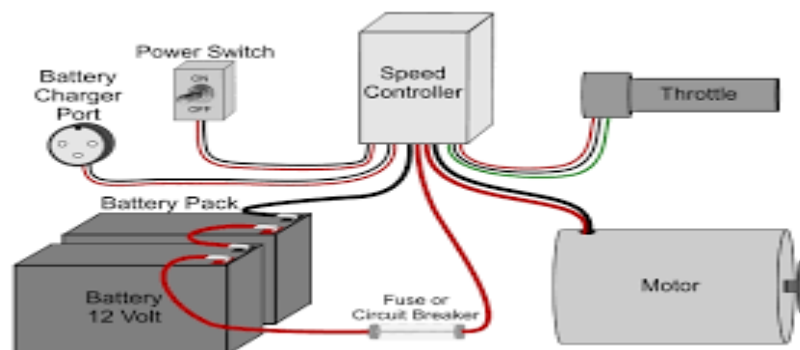However, there are certain barriers while adopting these latest technology in our daily life.

FIG.1 Major components of e-bicycle

INSTRUMENT SPECS

Some important parts required for propulsion of e-bikes are: a.)Motor, b) Battery, c) PIC Controller

a.)Motor

In e-bicycles brush less DC (BLDC) motors are to be used which consists of armature windings on the stator permanent and magnets on the rotor. The stator of this BLDC motor consists of stacked steel laminations with windings placed in the slots and these stator winding can be arranged in two patterns i.e. a star pattern or claw

LITERATURE REVIEW ON TOTAL PRODUCTIVE MAINTENANCE

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ABSTRACT
Total productive maintenance (TPM) is an approach to improve and enhance productivity. TPM improves the overall effectiveness of equipment with the active involvement of operators. The objectives of this paper are to review the literature on TPM and based on this summarize the findings in the form definitions of TPM as given by various researchers, benefits achieved as a result of TPM implementation, targets of TPM, and implementation aspects of TPM. In the end, some concluding observations and directions for future research.

Keywords: Total productive maintenance, attributes, benefits, implementation

INTRODUCTION

With the development of faster means of communication, better quality computers and rapid transportation systems, manufacturing is no longer restricted at local level, but has become global in character. A manufacturing company has to become competitive for its survival. Confronting these challenges, companies world-wide are forced to find ways to reduce costs, improve quality, and meet the ever-changing needs of their customers. One successful solution has been the adoption innovative techniques like TPM.

The basic idea of TPM was originally developed and formalized into a sophisticated management system by Japan. It made progressive strides in countries like USA, Europe and other south Asian countries after its successful implementation in Japan. Total productive maintenance (T P M) is a method of maximizing equipment performance, availability, and quality with the total involvement of the production operators, technicians, engineers, supervisors and managers. For staying in competitive market an organization must have continuous improvement throughout the organization with innovative plan .TPM is the right approach for continuous improvement with innovative tools like kaizan, quality circles, employee involvement, waste minimization, planned maintenance etc. This paper attempts to summarize the main findings from literature survey on TPM and then suggest some research directions.

SUMMARIZED FINDINGS FROM LITERATURE SURVEY

TPM definitions

The definitions of TPM as given by various researchers are tabulated in table 1.

Table-1: Definitions of TPM by different authors.

Name of Author	Definitions
Nakajima (1984)	TPM is a manufacturing program designed primarily to maximize equipment effectiveness throughout its entire life through the participation and motivation of the entire work force.
Christian (1994)	Total productivity maintenance (TPM) is a maintenance productivity improvement practice analogous to the use of total quality management.
Eugene (1996)	Total productive maintenance (TPM) provides a comprehensive, life cycle approach, to equipment management that minimizes equipment failures, production defects, and accidents.
Jorge (1997)	Total productive maintenance (TPM) is the process of maximizing equipment performance, availability, and quality with the total involvement of the production operators, technicians, engineers, supervisors and managers.
Venketesh (2007)	TPM is considered as a medical science of total productive maintenance.

Benefits of TPM

Various benefits as stated by various researchers are shown in table 2.

Implementation Aspects of TPM

The following steps are used in implementation of TPM in an organization are as follows;

(i) Preparatory stage

(a) Announcement by management to all about TPM introduction in the organization

NEED OF HUMAN VALUES FOR THE EMPLOYEES IN THE WORKPLACE

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ABSTRACT

The present paper focuses on the employment ability skills among the students of Engineering and Management.To stay with this present scenario one has to cope with the business abilities. One has to depend on one or the other earnings as it has become hectic to get his or her bread and butter.It is not an easy task to earn bread and butter.For these only being physically strong is not enough, one should have any kind of profession in hand so that the life can be easily led forward.To fit in today's world one has to follow some skills in their workplaces which are very much required.Some abilities are must to have in business field. The abilities and skills that are to be followed in the work premises are called Employability skills.In this paper, we will discuss on the communicative english,one of the employment skills for the students of Engineering and Management.Communicative english plays a vital role in every field of life.These skills are to be taught to the students in their academics, so that it helps to get them good jobs and to retain the job that is already in their hands.The confidence level how they carry themselves along the status should become habitual. To make it habitual one has to practice in their academic learning process.

INTRODUCTION

In this contemporary global arena communication skills plays a key role.There is a lot of demand in work places.There are four important skills which can lead to achieve the key of success.They are-Listening, Speaking , Reading, and Writing. Most of the companies prefer candidates who are good in these skills.The managers of the companies always look for employees who have a manner of appealing in english. The employees should have good written communication.they have to maintain documentation without any grammatical mistakes.They also prefer a person one who has an ability to cope with his colleagues.There are so many other skills that are to be acquired by the employers to generate a positive environment.Let us see one by one the essentials is communication skills in the workplace,which is nothing but employability skills.

English communication skills

Every living being tends to communicate using verbal or non verbal cues.Most of the people make mistakes while communicating eachother.Now a days people communicate to explore innovative things implementing new ideas.Still the importance of this skill is not clear in the minds of the illiterate parents what their wards need in future.English language is a borrower, it never stands on its own.Everyday new words are getting added to the dictionary. The person specialized in this field also should upgrade to reach to the particular level.Even in workplace we should follow some concepts.Some highlighted concepts are as follows:

Open mindedness

One should always think positive.The culture of positive communication leads to resolve some misunderstandings among the employees.It also helps to resolve some conflicts by positive approach.One should be ready to accept the feedback and move forward.The open mindedness leads to bring forth the productivity. It also builds a creative mind to think divergently.It strengthens the bondage among each other.Team work always leads to implement innovative ideas to progress.The project work assigned will be completed in the stipulated time given.

Clarity

While communicating with each other, one should be more conscious about the words they use.Poor communication may lead to misunderstanding.Do not swallow or express the words in low voice.The words used should be simple, so that the person communicating with you should easily grab the message that you want to transmit.Be clear in expressing your thoughts and ideas.Analyse your words whether the word used is proper according to that particular situation.Always pay attention to the words that you choose.Sometimes you have repeat the messages to make your communication clear.

Self esteem

Give respect to the co-workers and obviously you gain respect.One should know how to handle his/her qualities.The behaviour of a person carries their own personality.Mutual respect leads to good working environment. Today's generation people are highly aggressive and adopt negative way of approach.Being calm makes the work to go on in a very smooth manner.One should lead as a leader,and make others to follow him/her.For that the qualities that we possess should be admired.One should be a role model.Respect comes

PROTECTION, MONITORING, CONTROLLING AND LOAD SHARING OF 3-PHASE INDUCTION MOTOR USING IOT

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ABSTRACT

This paper presents a review of protection, monitoring, controlling and load sharing of 3-phase induction motor comparing different methods of implementation of this technique. Power is of main concern which needs to be monitored and controlled. The design contains Arduino connected to different sensors such as current and voltage measurement sensor, Wi-Fi module or monitoring and controlling a 3-phase induction motor problems. The design gives protection of induction motor from faults i.e. overcurrent, overvoltage, under-voltage and single phasing, monitoring for voltage and current, manual and automatic ways to control induction motor and load sharing also. Protection of these motors is very important because of inclusion in most of the industrial applications use induction from due to their high robustness, reliability, low cost, maintenance and high efficiency.

Keywords: Internet of things (IoT), voltage and current sensor, Wi-Fi module, contactor, relay, Arduino

INTRODUCTION

Within the advancement of electrical technology, the dc motors are broadly used in different industrial applications. After the innovation of ac motors particularly ac induction motors, the view of industries has changed due to the wide advantage of induction motors. An induction motor has two main parts- stationary part and rotating part. An induction machine is known as a rotating transformer since it works on the principle of transformer. The main advantages of the 3-phase induction motors are self-starting, rugged construction, good pf and low cost but without compromising the efficiency the speed cannot be controlled.

Different electrical faults may occur due to unbalanced 3-phase supply, over-voltage, under-voltage, over-current, single –phasing, mechanical faults: The mechanical faults occur due to broken rotor bar, air gap eccentricity, damage in bearing, rotor and stator winding failures.

To ensure the reliable operation of induction motors recent advancement techniques are used which include monitoring and controlling, automatically. Internet of Things (IoT) is the recent development to control and monitor the motor from remote location. This method provides easy control and reliability. The reliability of 3phase induction motor is obtained by continuous monitoring of electrical parameters. If any abnormal value of electrical factors is detected, the 3- phase induction motor is controlled automatically i.e. suddenly turns-off to reduce the various type of faults.

The aim of this paper is to make the control easy, fault detection, monitoring and load sharing. The technique is designed to allow easy use of a mobile phones to control industrial appliances like induction motor from any location. By using a mobile phone, the development of the control system will be carried out using android application. This will be communicating with Wi-Fi module, which in turn will control the device attached to microcontroller modules. When the action has been carried out, a response will be sent to the user by using application or site.

OBJECTIVES OF STUDY

1. To monitor and control an induction motor based on IoT for safer and economic data communication in industrial fields.

2. To start or stop the induction machine to avoid system failures by automatic and manual control methods.

3. To monitor and control the motors used in electric vehicles.

MOTOR PARAMETERS AND REFERENCES

The Parameters that are taken for protection of three phase Induction Motor are over-current protection, protection from unbalanced load, single-phasing fault protection, under-voltage protection and overvoltage protection. Motor reference values are taken as

Voltage=415V, Frequency=50Hz, Rated Current(I_s)=1.5A, RPM=1449, Power Factor=0.83, Rated Power=0.75KW.

OPTIMIZATION STUDY ON ELECTRICAL DISCHARGE MACHINING PARAMETERS FOR TUNGSTEN CARBIDE USING TAGUCHI TECHNIQUE

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ABSTRACTS

Recently powder mixed electric discharge machining (PMEDM) can be used for machining several electrically conductive hard materials with improvements in the process performance. This study is carried out to examine the result of silicon carbide powder mixed dielectric and tool rotary motion on material removal rate (MRR) of PMEDM process. For this study Tungsten Carbide with Cobalt bonded (WC-Co) is used as work-piece and copper tungsten (Cu-W) as tool electrode. Taguchi method with L27 orthogonal array has been utilised to investigate five factors with three levels. Finally, data is analyzed using S/N ratio analysis after experimentation and ANOVA to find optimum parametric setting for MRR and results are validated using confirmation experiments.

Keywords: PMEDM, Tungsten Carbide, Rotary Tool EDM, DOE, Taguchi, MRR, Copper Tungsten

1. INTRODUCTION

Electrical discharge machining (EDM) is also known as spark process. The difficulty associated with EDM is a low machining effectiveness and poor surface finish. To rise above these problems various techniques used in past includes: Electrode rotating, Electrode orbiting–planetary movement to any tool or workpiece, application of ultrasonic vibration and addition of powder into dielectric, etc. Suspension of powder in dielectric fluid is the latest advancement in EDM developments. This process is commonly known as PMEDM in which several improvements in the process performances were reported by varying powder type, powder size, powder concentration, etc. So, investigation of PMEDM for machining of cobalt bonded tungsten carbide seems to be promising.

1.1 Literature Survey

Jeswani [1] analyze the effect of fine graphite powder which added into kerosene for machining of tool steels. The machining process strength was improved by 60% in MRR. Wong et al. [2] analyzed that there is great impact of work piece properties and powder type on MRR. Chw et al [3] analyzed that suspension of Al and Sic powder to dielectric fluid as a kerosene improves the spark gap; resulting in higher material removal rate and debris removal. Kuldip Ojha et al. [4] carried out experimentation on PMEDM for EN-8 by analyzing the effect of Average current, duty cycle, angle of tool and concentration of a chromium powder which added into dielectric fluid. Gurule N. B. et al. [5] carried out an experiment with rotary tool on Die steel and result shows that MRR increases with tool rotation. F. Q. Huaet [6] carried out experiments on properties of SiCp/Al among moderate fraction of Silicon carbide particle reinforced Al-matrix composites in EDM and PMEDM. In conclusion they have mentioned that the PMEDM is having a potential for applications in MMC machining field. Shriram Y. Kaldhone et al. [7] has carried out experimental study on PMEDM of tungsten carbide which shows addition of SiC improves MRR.

2. Experimental work

This experimentation was carried on SMART ZNC (S50) electrical discharge machine. Some modifications such as powder mixed dielectric circulation system and tool rotary system were done on existing EDM to fulfil present requirements of study. WC-Co workpiece of size 100mmx50mmx10mm and Cu-W electrode of ϕ 12.0 mm were used for this experimental study. Taguchi method with L_{27} orthogonal array is selected for five process variables as Peak Current, Pulse on time, duty factor, tool rotation and powder concentration at three levels.

Table: 1 Values of fixed input parameters

Sr. No.	Machining Parameters	Values
1	Open circuit voltage	80V
2	Tool Polarity	Straight
3	Machining Time	30 Minutes
4	Type of Dielectric	EDM Oil
5	Powder	Silicon Carbide

SIMULATION OF DIRECT TORQUE CONTROL OF INDUCTION MOTOR BASED ON SPACE VECTOR MODULATION

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ABSTRACT
Induction motor (IM) speed control is comparatively difficult, since the torque produced and flux are inter-dependent. Through the conventional PI regulation, torque error can lead to undesirable change in angle between rotor and stator flux vectors. In this paper, space vector modulation (SVM) based direct torque control (DTC) is applied on induction motor. DTC is a closed-loop speed control technique to control a motor with the help of flux and torque vectors. It constitutes of hysteresis-band flux and torque controllers. The undulations in current and torque occur in the traditional DTC technique. Reason for unwanted torque and current undulation is less voltage vectors applied to the machine, which means less accuracy. Ripples are reduced using the SVM-DTC technique. SVM techniques have a number of superiority features that offer finer DC bus utilization, minimum torque undulations, lesser total harmonic distortions (THD) in the AC motor current, minimal switching losses, and simpler to adapt in the digital systems. Simulations for the SVM based DTC are performed in MATLAB/Simulink and the results are studied thoroughly.

Keywords — Motor, SVM, DTC, Torque error, Flux error

INTRODUCTION
Motors are one of the electric machines most widely used in industrial, commercial and domestic applications as they are simple, rugged, low cost and easy to maintain. The drive control system is necessary for IMs, since they demand good performance control: accurate and quick flux and torque response, higher torques at low speed, wide range of speed.

Direct torque control (DTC) method came in spotlight because instead of controlling the torque indirectly through flux or current, it directly controlled the torque. To obtain precision, DTC uses the difference between reference values and calculated values of flux and torque to control the machine. Although a well-accepted method, but DTC has some disadvantages like – at low speeds, control becomes difficult; high undulations in torque and current; more noise and variable switching frequency issues.

Space Vector Pulse Width Modulation (SV-PWM) is a technique introduced to improvise DTC in order to overcome the drawbacks of conventional DTC.

The usual three phase PWM generation technique involves a high frequency carrier wave intersecting with three sinusoidal waves as reference. The major drawback of this intersection method is that it includes automatic redundant computational efforts, since the intersection points of each of the three phases is computed independently [5].

On the other hand, the SVM strategy generates the waveforms simultaneously for all the three phases in a two-dimensional frame of reference, excluding the chances of considering each waveform intersection as an independent variable.

In this paper, MATLAB simulation of SVM based DTC of IM is performed and results are analysed. An attempt is made to minimise the general limitations of conventional control schemes and conventional DTC as well.

OBJECTIVES
1. To control the torque of induction motor using space vector modulation.
2. Space vector modulation (SVM) based direct torque control is applied on induction motor

OVERVIEW- Direct Torque Control (DTC)
Direct Torque Control (DTC) makes use of an induction motor model to acquire preferred output torque. By using solely cutting-edge and voltage measurements, it is viable to estimate the immediate stator flux and output torque. The simple configuration of DTC scheme is as shown in Fig. 1. It consists of a two torque and flux controller alternatively of PI controllers in DTC scheme and flux and torque estimator.

In DTC, it is possible to immediately manage stator flux linkage and electromagnetic torque by means of resolution of finest inverter switching modes. The selection is such that flux and torque blunders are restrained within respective flux and torque hysteresis bands to obtain fast torque response.

SMART WATER MANAGEMENT SYSTEM

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ABSTRACT

This Project Proposes a system, that system performs water quality monitoring and management of water supply operation. This paper presents an IOT device which help to manage and plan the usage of water. This system can be easily installed in residential societies. Sensors placed in the tank which continuously informs the water level at the current time. This information will be updated on the cloud and using a web application, user can visualize the water level on a Smartphone from anywhere that is connected to Internet. According to the level of water in the tank the motor functioning will be automatically controlled, at low level of water motor will automatically turn on and when tank is about to fill up it will cut off. so this system controls the wastage of water as well as save the electricity. There are some sensors are used for this system like temperature sensor, Turbidity sensor, flow sensor etc. In this proposed system all the records can monitored using real time monitoring system from any location.

Keywords: IOT Devices,Water Management,Sensors, Cloud.

I . INTRODUCTION

Water is an important resources for all the living on the earth, but unfortunately huge amount of water is wasted because of uncontrolled used and exploration of water resources. People are storing the water in tanks but conventional water tanks can neither monitor nor control the water level in the tank. In that some people are not getting sufficient amount of water because of unequal distribution. The proposed system is fully automated. Here human work and time are saved. In this project we have implemented the design of IOT base water monitoring and distribution system that monitors the quality of water and also equally distribute the flow. Water level sensor, automatic water pump ON/OFF, temperature sensor, flow sensor, water meter are carried out by this project. The IOT enable water management solution like use sensor to collect data and share data to the cloud.

II . RELATED WORKS

In this project we will implement the design of IOT base water quality monitoring system that monitors quality of water. This system consist of some sensors like turbidity sensor, temperature sensor, water flow sensor, water level monitoring sensor and automatic ON/OFF motor which measure the water level of water in the tank. Here automatic ON/OFF motor is depend upon data provide by water level sensor if tank is empty then motor start automatically and fill the tank else once the tank is full motor automatically off. Temperature sensor check the temperature of the water. Turbidity sensors measure the amount of light that is scattered by the suspended solids in water. All the records can be monitored using real time monitoring system from any location.
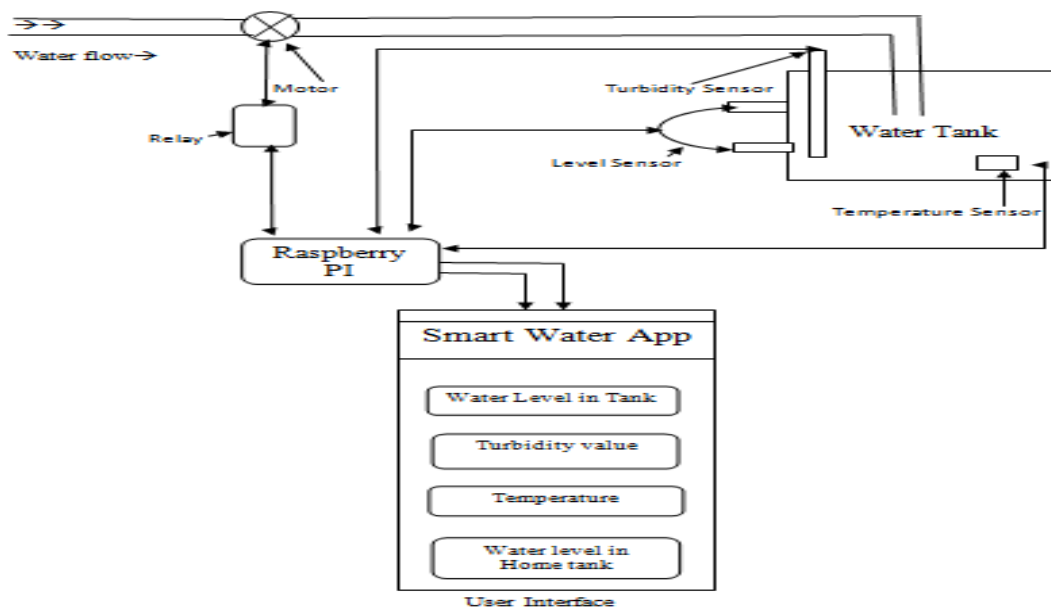
III . HARDWARE IMPLEMENTATION

Fig.3.1 Proposed Architecture

SOLAR POWERED DRIP IRRIGATION SYSTEM USING MOISTURE SENSOR AND WIRELESS NETWORK TECHNOLOGY

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ABSTRACT

Agriculture is the primary occupation in India. In rural areas people living there are mainly farmers whose life depends on farming hence major source of income is agriculture. Agriculture in India is not that easy city of unavailability of adequate water and electricity. To overcome this farmer can use an alternative source of energy by using solar power drip irrigation system and some advance sensing equipment with it like (Soil moisture sensor, temperature sensor, etc.) this will helps the farmer to manage proper amount of water as per their need and increases the productivity of crops.

Keywords: Automated drip irrigation, Solar panel, Soil moisture sensor, Micro controller, Wireless network, Energy saving.

INTRODUCTION

Agricultural irrigation is very necessary for crop production around the world. Whereas in India, the economy is dependent upon it and contribute nearly upon 17% to 18% of its GDP base on agriculture, and also the atmospheric condition. The more reason is the lack of rain and unavailability of land reservoir water. Therefore, economical water management is necessary for irrigated agricultural cropping systems. The demand for modern water-saving techniques in irrigation is increasing rapidly day by day. Within the traditional drip irrigation systems, the foremost important advantage is that water is equipped close to the root of the plants drip by drip which saves the water. These days, the farmers are mistreatment irrigation approach in India through the manual control the farmers irrigate the land on the ordinary intervals. This method typically consumes extra water or generally the water reaches past due to which plants get dried. to conquer this trouble farmer can used solar-powered automatic drip irrigation technology which helps them to manage the proper flow of water for crops and it also gives an additional backup power supply by using the solar panel due to which when there is a lack of electricity it can use to store the solar energy into the battery cell and when needed it can use to drive the pump motor. Mostly this system can be used where there is a shortage of electricity and water.

OBJECTIVES OF STUDY

1. To minimize the amount of water wastage in irrigated areas.

2. To developed an irrigation system in field of agriculture by using solar energy.

3. To provide user friendly control using GSM technology.

METHODOLOGY

To investigate the achievements of practical testing of a solar-powered drip irrigation system using moisture sensor and wireless network technology and dependent on the plan, the approach engaged with testing automatic irrigation of the field.

Selection of land (5mx 2m) =10m2

The ratio of land area =1:1

Amount of water require of farming

Considering the average amount of water require (rainfall) =250l/m2

The total amount of water requires cultivation =250×10=2500 liter.

To supply 2500 liter water to the field submersible pump is chosen with the capacity of delivering 500lph with a power consumption of 50w. The power required for this pump will be (6hrx50w) =300Wh. According to its power demand, solar panel and battery capacity are choose. Solar panel and battery capacity should be 25% to 40% higher than pump rated capacity i.e. solar panel 2nos of each having generating power capacity up to 75watts and battery 4nos of each having rated power capacity of (12Vx1.5A=18W) which are all connected in series-parallel.

UNIVERSAL TESTING MACHINE FOR NON-METAL

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ABSTRACT
Mechanical tensile testing plays an important role in evaluating fundamental properties of engineering materials as well as in developing new materials and in controlling the quality of materials for use in design and construction. If a material is to be used as part of an engineering structure that will be subjected to a load, it is important to know that the material is strong enough and rigid enough to withstand the loads that it will experience in service. Most common type of test used to measure the mechanical properties of a material is the tension test with the help of Universal Testing Machine (UTM). Tension test is widely used to provide basic design information on the strength of materials and is an acceptance test for the specification of materials. In tensile test, a specimen is prepared suitable for gripping into the jaws of the testing machine type that will be used. The specimen used is approximately uniform over a gauge length. The traditional UTM so many parts and drive on servo-hydraulic mechanism So the cost of machine is high. Here the horizontal UTM is introduced and load application mechanism includes a hand driven worm and wheel gearbox driving lead screw. In which user apply maximum load with minimum effort. This machine provides low cost solution for the engineering and engineering technology program.

INTRODUCTION
Universal tensile test is known as a basic and universal engineering test to achieve material parameters such as ultimate strength, yield strength, % elongation, % area of reduction and Young's modulus. These important parameters obtained from the standard tensile testing are useful for the selection of engineering materials for any applications required. The tensile testing is carried out by applying longitudinal or axial load at a specific extension. Mechanical testing plays an important role in evaluating fundamental properties of engineering material as well as in developing new materials and in controlling the quality of material for use in design and construction. A small-scale machine that fits on a benchtop and allows simple tensile tests of Non- metal specimens. The load application mechanism includes a hand-driven worm-and-wheel gearbox, driving a lead screw. These low-friction bearings, with the large handwheel allow the user to apply maximum load with minimum effort. They also give smooth and progressive operation, necessary to help the user apply a steady strain rate for best results.

The unit also has a smaller "quick advance" handwheel that allows the user to set the distance between the chucks simply and quickly before each test. The load measuring mechanism is a strain-gauged load cell that connects to a microprocessor-controlled digital display. A measuring scale measures the tensile displacement (extension) over the entire movement. A starter set of specimens with the machine, made of different Material like plastics, composite.

LITERATURE SURVEY
1. Year 2009, W. M. Banks and R. A. Pethrick did the tensile testing carried out project values for the mechanical properties have been obtained for natural fibers under various conditions. To understanding the structural behavior of the fibers under various environmental conditions.

2. Year 2010, J.E. Corona, and A.I. Oliva Works on The design, construction, calibration and compliance measurement of a universal testing machine for tension tests of materials in thin geometry.

3. Year 2016, Daudi S. Simbeye Improved the digital controller that is capable of achieving an industry-leading data acquisition rate, proved that the system has a precise motion control, high precision, high stability and powerful data analysis capabilities.

4. Year 2016, Baiju R Dabhi Improved gripping of the specimen with standard clamps with help of mechanical wedge gripper for better grip, suggested to develop the jaw grip by using stainless steel.

OBJECTIVE OF STUDY
1. The aim is to make the tensile testing machine for plastic and composite materials.

2. To reduce cost by replacing the hydraulic mechanism by simple manually operated mechanism with the help of gears.

3. To increase the accuracy by using strain gauge with digital display.

SIGNIFICANCE OF ENGLISH COMMUNICATION FOR ENGINEERING STUDENTS

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ABSTRACT
This research paper presents the Significance of English Communication (EC) for Engineering Students and the problems faced by them and its remedies. The literature review reveals the importance of English in making the global records of diverse fields – science, education, international business and other professions. Around the world, English is the associate official language of several countries including India in both local and global professional perspectives. In India, English is mandatory in engineering academics therefore the budding engineers who are non-native speakers are needed to learn English competently to become effective communicators. This paper explores the need of active-participation of teachers and students in learning English through LSRW (listening, speaking, reading and writing) and improving communication skills through task-based activities such as presentation, role-play, group discussion, mock-interview, proposal and report writing, etc. It also epitomizes the required reforms in teaching-learning process to build the essential qualities demanded by MNC (Multi-National Companies) and global industries. Finally, the remedies describe some domains for students' practice that could make them to lead getting success in presentations at seminars, conferences and campus interviews.

Keywords: English Communication, mandatory, teaching-learning process, engineering students, effective communicators

1. INTRODUCTION
The paper "*Significance of English Communication for Engineering Students*" highlights the learning of English language and its impacts in life especially students of engineering. Learning English, apart from building your self-esteem, opens more opportunities in *international career* and in *knocking down a lot of barriers including cultural ones*. In India, the lack of English knowledge and its fluency always kept our engineering students back from participating and applying for courses and they also felt a very low self-esteem or unworthy. This situation resembles a quote – "**If you are not growing, you are dying**".

Life is learning and learning is life. The journey of life offers various challenges and *the journey learning makes capable of facing all those challenges*. The learning is very important to broaden your horizons and to improve yourself *to discover your hidden talents for overcoming the fear and obstacles*. Learning is possible through a language that evolve with culture so there is no a fix point where you can say yes I have learned the language completely. Rather it is a journey, where you learn something new every day.

2. LITERATURE REVIEW
The initiation of the research topic has been additionally motivated by reading number of reference papers, books and websites that are so related to the title. This literature review exhibits the reliable data of those references that add more weightage and support to the result of this attempt:

1. (A) "*Reading maketh a full man, conference a ready man, and writing an exact man*" – **Francis Bacon**, the famous essayist, has rightly observed in his well-known essay 'Of Studies'. (B) It is true that of all the four skills – LSRW is probably the most crucial skill. By all means, effective reading skills are vital to achieve success not only in one's academic but also professional life [Ref.5, Ch.16 pg.355].

2. (A) Role of English language in daily life in a state can't be separated from the geographic, historical, cultural and political influences even though those fields are not vulnerable to change. (B) A successful learner is a person who is able to identify and use English in various situations in community [Ref.9].

3. (A) Knowing the importance and growing demand of English communication competence for engineering students from rural areas, there is a need for the teachers as well as the students to make integrated efforts. (B) The rural area engineering students should effectively make use of the faculty, education system and the amenities provided to them in combination with the self-efforts, to emerge as a competent user of English communication to become successful in life and career [Ref.7].

4. (A) Data analysis reveals that the teaching practices are almost the same in the ESL and the EFL contexts, where teacher-centred classroom, exam-oriented activities and traditional teaching methods are dominant. (B) Schools play a role in promoting languages in accordance with the policies determined by the state. Though

NUMERICAL ANALYSIS OF TITANIUM AND STAINLESS STEEL INTRAMEDULLARY ROD

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ABSTRACT
The solid metal rod which is forced into the bone when it is broken due to accidents or high impact is called Intramedullary rod or Intramedullary nail. It is similar in case of humans as well as animals (pets) in both the cases this solid rod is forced into the bone. In this paper we will specifically work on the Tibia bone which is also known as Shinbone or Shankbone in Human body. This bone is used to connect the knee with the ankle bones. Two materials are found to be suitable for design of tibia rod i.e. Titanium and Stainless Steel. Both the materials are easily available in the market and are extensively used for manufacturing of Tibia rod. Primary goal of this study is to compare the different mechanical properties and parameters of both the materials regarding Tibia Rod. In this study the rod dimensions are fixed and by using Titanium and Stainless Steel the performance of the rod will be compared with each other.

Keywords: Intramedullary nail, Stainless Steel, Tibia rod, Tibial Fracture, Titanium

1. INTRODUCTION
The skeletal system comprises of bones and joints in the body. Each bone is made up of many cells, protein fibers and minerals. Hard parts of the human body are the components of skeletal system. The skeleton provides support and protection for the soft tissues which makes the complete body. Joint is the connection made between bones which help skeletal system to move at different locations. 6 major functions are provided by skeletal system to human body.

1. Support: The skeleton in the human body act as a frame which helps to support the body and maintain its shape. The musculoskeletal system in the body provides support, stability and movement to the body. This system comprises of bones of skeleton, muscles, cartilage, tendons, ligaments, joints and other connective tissues that supports and binds tissues and organs together.

2. Movement: The joints between the bones is responsible for the movement of skeletal system, movement is powered by skeletal muscles attached to the skeleton at various sites on bones. Nervous system coordinates the mechanics provided by muscles, bones and joints for the movement.

3. Protection: Many vital internal organs are protected by the skeleton from being damaged (For example: Skull protects brain and eyes, ribcage protects the lungs and heart, vertebrae protects the spinal cord).

4. Blood cell production: Blood cells are made inside bone marrow, which is in the bones of the skeleton, it is the site of hematopoiesis.

5. Storage: Calcium is stored by the Bone matrix and is involved in calcium metabolism, iron is stored in bone marrow and is involved in Iron metabolism. Bone is not completely made up of calcium but it is a mixture of chondroitin sulfate and hydroxyapatite, the latter making up 70% of a bone.

6. Endocrine regulation: Osteocalcin is the harmone released by the bone cells, which is responsible for blood sugar (glucose) regulation and fat deposition and it also increases both insulin secretion and sensitivity, in addition to boosting the number of insulin producing cells and reducing fat storage.

1.1 Human Skeleton Components
Human Skeleton consists of three main components, namely bones, cartilages and joints. Bone: A bone is a rigid organ i.e. rigid or dense form of connective tissues. It has honeycomb like matrix internally, which helps to provide rigidity to the bone. Bone is the responsible for bearing a load therefore it is also known as load or weight bearing organ which provides strength to the human skeleton. Cartilages: It is a smooth and resilient elastic tissue, a rubber-like padding that protects and covers the end of the long bones at the joints. It is not as hard and rigid as bone, but it is much stiffer and less flexible than muscles. Joints: A joint is the connection made between bones in the body which link the skeletal system into the functional the whole. They are constructed to allow for different degrees and types of movement. Human body contains six types of synovial joints. Synovial joints are the most movable type of joints in human body. Six types of synovial joints are pivot, hinge, saddle, plane, condyloid and ball and socket joints.

IOT BASED SMART PARKING SYSTEM

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Problem in Today's Farming

1. ABSTRACT

In the recent years, a large number of new registered vehicles were reported compared to the previous years, which makes it a rough estimate of 54.5% increase in a span of 7 years (Indian Ministry of Transportation, 2007). Referring to the aforesaid statistics provided by the Malaysian Ministry of Transportation, the current transportation infrastructure and car park facilities are deemed insufficient in sustaining the influx of vehicles on the road.

Therefore, problems such as traffic congestion and insufficient parking space inevitably crops up. In Asia, the situation are made worse by the fact that the roads are significantly narrower compared to the West (Inaba et al., 2001). Various measures have been taken in the attempt to overcome the traffic problems. Although, the problem can be addressed via many methods, the paper focuses on the car park management system introduced, which is the smart parking system.

This study will review the evolution of vehicle detection technologies as well as the detection systems developed over the years.

2. INTRODUCTION

The smart parking system implemented mainly in the Europe, United States and Japan (Shaheen et al., 2005) is developed with the incorporation of advanced technologies and researches from various academic disciplines. With its deployment in the car park, it is hoped that it would solve the aforementioned problems faced by the patrons within the car park.

3. ADVANTAGES OF SMART PARKING SYSTEM IMPLEMENTATION

The smart parking system is considered beneficial for the car park operators, car park patrons as well as in environment conservation (Shaheen et al., 2005; Chinrungrueng et al., 2007). For the car park operators, the information gathered via the implementation of the Smart Parking System can be exploited to predict future parking patterns.

Pricing strategies can also be manipulated according to the information obtained to increase the company's profit. In terms of environment conservation, the level of pollution can be reduced by decreasing vehicle emission (air pollutant) in the air (Shaheen et al., 2005). This can be attributed to the fact that vehicle travel is reduced. As fuel consumption is directly related to vehicle miles travelled, it will be reduces as well.

Patrons are also able to benefit from smart parking system as parking space are able to be fully utilized (Kurogo et al., 1995; Sakai et al., 1995) with a safer (Shaheen et al., 2005; Chinrungrueng et al., 2007), optimized and more efficient system implemented (Sakai et al., 1995; Shaheen et al., 2005). The system is made more efficient as vehicle travel time and search time are significantly reduced due to the information provided by the smart parking system.

With the information provided, drivers are able to avoid car park that are fully occupied and locate vacant parking spaces with ease elsewhere. The number of vehicles parked illegally by the roadside which leads to traffic congestion is also reduced as it is absorbed into the car parks (Kurogo et al., 1995). Most importantly, traffic congestion can be reduced. All this would eventually lead to convenience for the patrons.

4. METHODOLOGY

The project works through a set of instructions and commands placed by the programmed engineer within the Arduino through the software.

Arduino was feed through DC 12V source and have several blocks as per use, including a 5-volt, We put the Node MCU for connectivity with database.

The project needs some components to work properly. Here, all the components will introduced with details.

FABRICATION OF CLOTH DRYING MACHINE USING A CONDENSATION UNIT

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ABSTRACT

The following paper discusses to study the clothes dryer machine by using heat. There are many cabinet dryers which are widely used today as an alternative to natural clothes drying, especially for those who are busy working from morning until evening, having limited time and for the residents in urban areas. Nowadays cabinet dryer are already offered in the market, but they are expensive to afford. A cloth dryer has to be made with the help of available materials. Its efficiency is investigated with respect to how fast it is able to dry up the clothes. Hence a set of experiments are performed to determine the worthiness of this dryer. The main advantage of this dryer is that it can work all round the year, with a built-in auxiliary heating system. Also, with no moving parts, it consumes less power than conventional dryers in washing machines. It can easily be built with commonly available materials such as plastic moulded body, aluminium motor, timer output etc. The comparison of two different materials such as iron and aluminium are done for best results.

The cloth drying machine is designed on Solidworks and analysed on Ansys 2018.

Keywords: Design, Analysis, Cloth Dryer, Aluminium Motor, Solidworks, Ansys 2018.

INTRODUCTION

Now days drying clothes usually use natural way by using the energy from the Sunlight and the wind, but nowadays the technology is plentifully developed upward and the clothes dryers that use the electric energy or other energy come to use extensively, Especially in the urban area where limited sunlight (cloudy days) and restricted air flow of house types such as high rise condominiums and apartments, natural drying is prohibited in some housing areas for aesthetic reasons and conventional domestic electric dryers are too expensive and inefficient decreasing energy losses and heat recovery is important research topics, nowadays. Many cabinet dryers widely use, especially those who are busy working. Besides that, most of laundries today have their own dryer cabinet. It is not just because to run their operation at all the time, but they also can prevent the risk to the cloths that might lose or dirty. Cabinet dryer on the market nowadays is using electrical power as a source in generating heat.

The design available in markets are very bulky and uses lots of energy because it is not utilized properly half of energy get wasted to the surrounding. The size of the product made very compact so when it needs to be get used we can unfold it and extend it to its ultimate size where we can hang clothes and two heating sources. Because two heating sources are provided time required to dry cloths is less as compared to other expensive devices which also uses lots of energy to dry the cloths.

TYPES OF DRYERS

Spin Dryer: This machine simply spins their drums faster than a typical washer could in order to extract addition water from the load. They may remove more water in two minutes than a heated tumbler dryer can in twenty minutes, saving significant amounts of time and energy. Although spinning alone will not completely dry clothing, this additional step saves a worthwhile amount of time and energy for large laundry operations such as those of hospitals. **Condensation Dryer:** Just as in a normal dryer, condensation dryers pass heated air through the load. However, instead of exhausting this air the dryer uses a heat exchanger to cool the air and condense the water vapour into either a drain pipe or a collection tank. Afterwards, this air is run through the loop again. The heat exchanger typically uses ambient air as its coolant, therefore the heat produced by the dryer will go into the immediate surroundings instead of the outside, increasing the room temperature slightly. In some designs, cold water is used in the heat exchanger, eliminating this heating but requiring increased water usage.

Dehumidifier Dryers: By keeping a low humidity, dehumidifiers encourage fast evaporation without high heat. This type if dryer is suitable for clothes that can withstand tumbling but not high heat.

Heat Pump Dryers: A closed-cycle heat pump clothes dryer uses a heat pump to dehumidify the processing air. Such dryers typically use under half the energy per load of a condenser dryer. Whereas condensation dryers use a passive heat exchanger cooled by ambient air, these dryers use a heat pump. The hot humid air from the tumbler is passed through a heat pump where the cold side condenses the water vapour into either a drain pipe or a collection tank and the hot side reheats the air. In this way not only does the dryer avoids the need for

COMBINE ACCELERATOR AND BRAKE PEDAL

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ABSTRACT

In Automobiles, have different pedals for the function of acceleration and brake, in order to operate any one of them it is necessary to leave the one pedal free and press the other pedal for operation. The death rate is about 25% , due to automobile accident and is going on increasing every year. One of the main reason is pressing the wrong pedal at the time of emergency. To solve the following problem, a mechanism is developed "Combine Accelerator and Brake Pedal", which can reduce the death rates by some instant. This mechanism reduces the operation time of pedals by approximate 5-6 seconds. This pedal is designed in such a way that it can be used universally in any automobiles. Its manufacturing and production is very easy. The pedal is hinged over a lever which can oscillate, retracting springs have been attached to the lever which can bring them to its original position. Pressing the pedal from the lower end it will cause the action of acceleration, when pedal is pressed at the center, lever moves and brakes are applied.

INTRODUCTION

In present time the death ratio in India is about 25% caused due to road accident, this mechanism will reduce this by 7-8% of total, as it can be used in any automobile. This innovation improves the mechanical movement of the brake and accelerator pedal, it is arranged in such a way that it can perform any one function without possibility of errors and not interfering the other operation. Typically the cars have the foot pedal arrangements such that, left pedal is for clutch, right pedal is for accelerator and middle is for braking. Here right foot has to be used for the operation of accelerator and for braking. This ensures that the throttle is released as the brakes are applied. But however foot is always at some distance from the brake pedal while it is placed on the accelerator pedal. This movement of foot will take some time and also it will increase in the total braking time of any automobile. Due to combine brake and accelerator pedal, misapplication of pressing the pedal will be very less in manual transmission, as the driver will disengage the clutch so it will be easy to discover his mistake of pressing the pedal.

LITERATURE REVIEW

[1]**Vaibhav V. Sawant et.al,(2019):-** This study by Vaibhav Sawant concludes that this new mechanism results in avoiding interference in braking during acceleration and vice versa. This combine pedal mechanism thus provides a driving control which permits the quick and smooth transition from acceleration to braking without transferring the foot from one pedal to another.[2]**V. B. Vishal et.al,(2018):-** The subject of the power descriptive memorandum is a combine pedal mechanism which involves the both operations such as acceleration and braking. There is advantages over the conventional pedals. This combine pedal mechanism allows to operate both the function of acceleration and braking on the same pedal without moving the foot over the pedal.[3]**Jay Krishna et.al,(2018):-** This study helps us to analyze and incorporate combine pedals which helps in decrease in the possibilities of accident and improved transition time between accelerator and brake pedals. [4]**Karthik Rao et.al,(2018):-** This paper helped us to get through the design, construction, working, and use of the pedal in an actual automobile vehicles. They also got the problems of the drivers which gets confused to press the pedals in case of acceleration and braking. [5]**Ajinkya Bhonge et.al,(2016):-** Their study is about a pedal which is adjustable, ergonomical for driver, light weight, serviceable, secure and better braking effect which are expected by driver. So they have made an pedal considering the following content. [6]**Sahil Arora (Jan, 2016) :** This study by Sahil Arora is based on avoiding interference of braking during acceleration and vice versa. This combined pedal mechanism thus provides a smooth and quick transition over pedals which minimizes the time taken for shifting the foot from acceleration pedal to brake pedal. [7]**H. Nijmeijer et.al,(2015):-** The study by him is based on one pedal operated acceleration and brake. In his study acceleration is done by the pedal but the braking action is taken place by the kinetic energy generated by the acceleration pedal is used to deaccelerate the vehicle. It works efficiently in the electric vehicles and similar mechanism is being used by the well known companies like BMW and TESLA. [8]**Sangdong Lee et.al,(2010):-** The study of Sandong Lee has analysis the time required to press the pedal and the time for switching foot between the pedal and has implemented a new system to reduce the total time and more efficient braking. [9]**Rickard Nilsson et.al,(2002)** : This study by Rickard Nilsson is focussing on the adaptability of new inventions by drivers because drivers actually face lot of problems in adapting new method of accelerating and braking using combined brake and accelerator pedal instead of separate pedal. [10]**Henri Bonnard et.al,(1999):-** He

DEXTER: A DESKTOP ASSISTANT

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ABSTRACT

The use of computers has taken a great turn up in the modern world. The less tech savvy people find it difficult to use. To overcome the problem Virtual Assistant (VA) was developed. Many companies have launched virtual assistants like Microsoft's Cortana, Apple's SIRI, google assistant and many more. However, most of the VAs are for mobile phones. The most important means of communication is language and the primary medium being the speech. The interactions between humans and computers that is their communication is called Human Machine Interaction using Human-machine Interface (HMI). In this proposal, a simple stand-alone desktop application called DEXTER is presented. Application works on Natural Language Processing (NLP). The input given to the DEXTER is by speech using a microphone. It first listens to voice, analyze it and then performs its tasks. The output is by both speech and text. The user can use the application without the microphone by using its GUI. DEXTER has simple and easily understandable Graphical User Interface (GUI). The application works on Windows Operating System (OS). DEXTER helps the user to search on Wikipedia, to send emails and various online services. It also helps to perform basic operations like open OS application, play music, to display time, date, battery and much more. By paying attention to what user likes, what user wants to share, Dexter certainly provides the users with an experience where user's individuality is celebrated and not ignored.

Keywords: Desktop Virtual Assistant, Graphical User Interface (GUI), Human Machine Interface (HMI), Natural Language Processing (NLP), Online services.

INTRODUCTION

Today, we humans rely upon machines and every machine is leaning towards automation, may it be home or car. There is a tremendous change in technology over the last few years. Believe it or not, in today's world you can interact with your machine. Since human brain is more responsive to voice rather than written text hence virtual assistant is gaining hike in the industries and it is a major innovation for various other applications. The efficient way to interact using voice commands is human-machine interaction. To achieve this, we need to use speech to text API for understanding the input. To interact with computers, an intelligent virtual assistant (IVA) or intelligent personal assistant (IPA) which is a software agent, came into existence. Many companies have developed virtual assistant applications such as Apple's SIRI, Microsoft's Cortana, Google Assistant, etc. Many of these applications are limited to mobile devices only. In this proposal, an idea for desktop based virtual assistant called DEXTER is implemented. This application uses Natural language processing for both input and output. It uses query processing by matching input with available keywords and it response back with output.

OBJECTIVES OF STUDY

1. To understand the concept of virtual assistant.

2. To understand the concept of Natural Language Processing.

3. To make a desktop based assistant with GUI.

CONCEPTS

A. Virtual Assistant

A virtual assistant is an application that understands natural language i.e. voice commands and completes the end users' task. Historically these tasks were performed by personal assistant or secretary where there was a lot of paperwork and it was time consuming. Virtual assistant basically performs task for the end users. The tasks include searching Wikipedia, playing music, setting reminders, open applications, etc. Some of the most popular virtual assistants are Apple's SIRI, Microsoft's Cortana, Google Assistant, Amazon's Alexa. They use natural language processing (NLP) to match user voice input to executable commands.

B. Natural language processing

NLP is one of the major component of AI which processes human voice. Starting with collection of data(voice), and then analyzing it, the NLP converts this data into text. This text is actually the command. Now NLP performs the task based on the command and output is generated in the form of text and later it is converted into speech. NLP helps humans to interact with machines.

SIMULATION OF REVERSE POWER RELAY FOR GENERATOR PROTECTION

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ABSTRACT
Generators are hearts of the power system. Any faults at the generator side may lead to severe failures and fatal accidents. Thus, a major concern is protection of these generators from number of faults like- varying voltage, varying current, short circuits, varying frequency, over-fluxing, reverse power flow, etc. In this project, we have designed a protective scheme for power flow in opposite direction that is flow of power from grid to the generator, due to which the generator starts consuming and acts as a load. Modelling tools are important to have a basic idea of power system. These tools aid an engineer to modify the system under normal and faulty scenarios. This paper contains the simulation and modelling of digital reverse power relay in MATLAB/ Simulink. MATLAB libraries offer Power System Analysis Toolbox which are simulation based, for power system engineers.

INTRODUCTION
In power systems, for detection of synchronous generator's motoring action, reverse power relays (RPR) are used. When the field winding is electrically connected with the excitation system but the prime mover fails, this condition occurs. Thus, the machine acts like a synchronous motor connected with huge power system. In such conditions, the rotors behave like the active load on that machine. Motoring action eats power to rotate the prime mover and severe damage is caused to the prime mover. This condition is dangerous since there is an objectionable rise in temperature, especially in case of steam turbine. Therefore, these must be detected quickly and the GCB should be tripped.

Electromechanical relays are replaced with digital relays which are highly accurate and have high-speed operations. Immediate operation of relay is a must, especially for faults which may result in system blackout. Some additional perks of digital relays are - multiple variable settings, highly sensitive, control for a wide range and compact size.

OBJECTIVES OF STUDY
1. To detect a reverse power flow in the power system.

2. To trip the circuit breaker within threshold.

3. To design a relay logic to prevent motoring action of the synchronous alternator.

PRIME MOVER FAILURE FAULT OR REVERSE POWER FAULT
A generator is incorporated with prime mover and is connected with the grid, supplying power. When the failure of the synchronized prime mover occurs, the condition is known as motoring. Here, the generator pulls power from the bus, operates as a motor and drives the prime mover. In a synchronized condition, frequency of all the generators is same. Any dip in frequency of one alternator causes the other power sources to feed power into the alternator. This power flow in the reverse direction is known as the reverse power flow or motoring action of alternator. Another cause of reverse power occurs during synchronization. If the frequency of the bus bar to which the machine is to be synchronized is slightly higher than frequency of the machine and the breaker is OFF, reverse power flows. Hence, during synchronization, the machine frequency is kept little more than that of the bus bar. This enables the machine to take load the moment the breaker is closed. A reverse power relay can be used but it must have a time delay setting to ensure correct trip in case of short time fluctuations, phase swings and disturbed synchronization. Hence, when a power reversal issue occurs, the first thing is to decouple the corresponding alternator from live line with the help of the breaker. If it is stuck, then whole bus needs to be shut down.
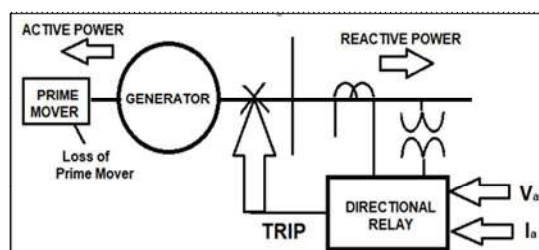

Fig. 1. Reverse Power Flow

IMPLEMENTATION OF SPEED CONTROL OF DC MOTOR IN MATLAB USING FUZZY LOGIC CONTROLLER TECHNIQUES

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ABSTRACT
A direct current (DC) motor should be operated at a precise and steady frequency for a varying load. In a DC motor, speed can be controlled by means of manual control or by automatic control apparatus. But speed regulation is an altogether different thing – where the natural variation of speed due to changing load is not considered while trying to maintain the speed. This paper attempts to control the speed of DC motor based on the fuzzy logic controller (FLC) and simulate the fuzzy rules in MATLAB/Simulink environment. FLCs are designed to attain the control of a DC motor speed using both field current and armature voltage by changing the these in the constant power region and constant torque region, respectively. The fuzzy controllers are proposed to be based on each other such that the one set of rules are fired at a time for two controllers, having similar predecessors but different outcomes. Simulations show the efficacy of the proposed fuzzy logic control method.

Keywords—DC motor, speed controller, fuzzy logic, torque, power, field, armature

INTRODUCTION
A machine that generates mechanical energy by generating current flow through the coils inside it is called a DC motor. It is capable of providing high starting torque and the chances to control speed across a wide range. Some applications of DC motor include domestic appliances, automotive and industrial uses. It is mainly preferred for its wide range speed operations, versatility and cheapness. It is also known as adjustable speed machine. To settle the speed of a DC motor to desired value, controllers are designed based on the application. Non-linearity of a DC motor results in some problems while applying a general speed control like proportional, integral or derivative algorithms in a speed controller. The non-linear properties of the motor like friction and saturation result in degradation of the performance of these control methods. PID is a conventional control method, usually used in industries for speed control system DC motor. It is an all-inclusive control loop feedback technique and has simplified form.

However, the controller has to be reset for varying ranges of operation. An effectively efficient system for speed control is being design to overcome the complications of conventional methods of control. A separately excited DC motor, shown in Fig. 1, is the most appropriate configuration used for applications of varying speed for longer durations because of its precise speed control, good reliability, controllable torque and lucidity. Fig. 2 indicates its performance characteristics when armature resistance is gradually increased.
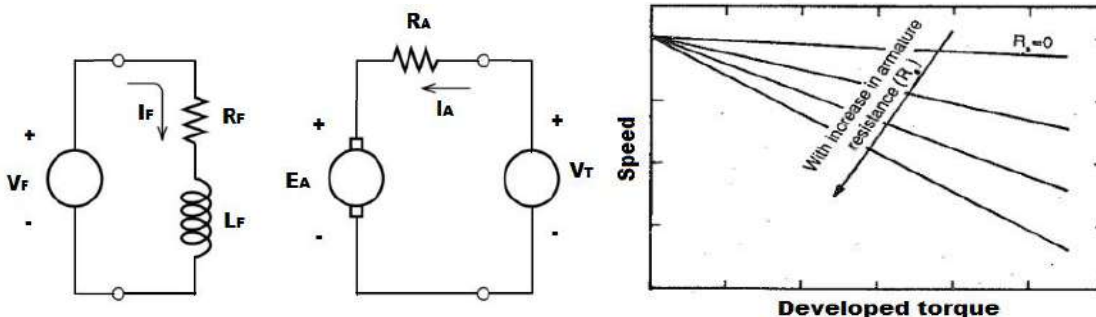

Fig. 1. Separately excited DC motor   Fig. 2. Performance Characteristics

OBJECTIVES
1. To control the speed of dc motor using independence of armature voltage and field control method

2. To design and build an effective fuzzy logic controller for the dc motor speed control over a broad range (0-2000rpm)

OVERVIEW
- **DC Motor**

A DC Motor is an electromechanical energy converting device. There are two types of DC machines. A DC motor converts DC electrical potential into mechanical potential. Although the fact that the battery is a

Design and analysis of Blanking Die for various Hexagonal Sizing Operations

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Abstract— The sheet metal working processes are widely used in almost all industries like automotive, medical and mechanical industries. The major advantage for using sheet metal working process is to improve production rate and to reduce the cost per piece. The project mainly focuses on different sizing operations done on single setup of die punch. Presently these operations are done on four separate setups which leading to reduce the production rate and increasing cycle time with cost as well. Blanking is a manufacturing processes by which certain geometrical shapes are sheared of a sheet metal. Blanking is a process of producing at components. The entire periphery is cut. The cut-out piece is called Blank. The process is called Blanking and tool used is called Blanking tool. Blanking dies are known as cutting dies. They may be simple, combination, or compound. A Blanking die is generally cheaper to make and faster in operations than trim die. A single Blanking die can either produce either a right or left part, while to trim dies are needed for trimming one die for right-hand parts and another die for left-hand parts. When a sheared at blank drops through die block (die shoe) it piles up on top of the bolster plate. If the blank goes through the hole, it is called drop-blank die. A die in which sheared blank returns upwards is called a Return-blank die. Return-Blank dies are slower in operations and the cost more to build than drop-blank dies. If the Blanking die design is considered as the most important part in manufacturing of sheet metal. This project is also based on new design for die punch. The 3D parts are modeled in SOLIDWORKS and saved in .igs format so that it can be imported from any of the analysis software. As per the companies requirement cad drawings are drawn in SOLIDWORKS software. The various stress analysis, are carried out on Ansys 17.2.workbench analysis software and results are compared

Keywords— die, die materials, clearance

I. INTRODUCTION

Blanking is a manufacturing process by which engineering or industrial parts of certain geometrical shapes are sheared o sheet materials such that the produced parts do not need further or subsequent machining unless very high quality is required. Blanking is a manufacturing operation as old as the technology itself. Its applications range from components of very light to heavy appliances and machineries. Blanking is defined as the cutting of a work piece between two die components to a predetermined contour. During blanking, the part is subjected to complex solicitations such as deformation, hardening and crack initiation and propagation. The theoretical modeling of such processes

is very difficult due to the complexity in describing the different stages of the whole shearing process starting with the elastic stage and ending with the total separation of the sheet metal. The behavior of the blank material during the blanking process can be divided into various stages. During the start of the process, the sheet is pushed into the die and the blank material is deformed, elastically. The process continues and the yield strength of the blank material is reached. Normally, the material underneath the punch is subjected to thinning. The plastic deformation causes rounding of the edge of the blank. During this stage, or possibly as early as during the plastic deformation stage, damage initiation followed by the nucleation and growth of cracks takes places. In most of the conventional blanking situations, ductile fracture occurs after shear deformation. This causes rough, dimpled rupture morphology on the fractured surface of the product. Finally, the work due to friction is dissipated when forcing (pushing) the slug through the die hole.

A. According to this criterion,the dies maybe classified as

Cutting Dies are used to cut the metal. They utilize the cutting or shearing action. The common cutting dies are blanking dies, perforating dies, notching dies, trimming, shaving and nibbling dies.

Forming Dies change the appearance of the blank without removing any stock. Theses dies include bending, drawing and squeezing dies etc.

B. According to the die classification

According to this criterion, the dies may be classified as: single operation or simple dies, compound dies, combination dies, progressive dies, transfer dies and multiple dies. Simple dies or single action dies perform single operation for each stroke of the press slide. The operation may be one of the operation listed under cutting or forming dies. In compound dies, two or more operations may be performed at one station. Such dies are considered as cutting tools since, only cutting operations are carried out. In combinations die also, more than one operation may be performed at one station. It is difficult from compound die in that in this die, a cutting operation is combined with a bending or drawing operation, due to that it is called combination die .A progressive or follow on die has a series of operations. At each station, an operation is performed on a work piece during a stroke of the press. Between stroke the piece in the metal strip is transferred to

Conversion of Mono Wheel IC Engine to Mono Wheel E-Bike

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Abstract—**In the world of Automobile, Many modern types of vehicles are invented with many features and specifications. Many vehicle are made for fun and entertainment purposes, but our is unique also because of it's single giant wheel i.e, mono wheel bike. So, Now we are going to convert the mono wheel IC engine bike to mono wheel electric bike. Due to it's less harmfull nature and less pollution, noise and air pollution is eliminated from environment. Working with mono wheel can result more efficient way of transport, as it's size, weight and resistance are minimize and reduced. In dual wheel bikes one wheel provide the propulsive force and the other one steer the bike, while in mono wheel bike the single wheel itself has to do both propulsive force and steering. In this mono wheel bike, there is only one part which is there for the application of propulsive forces and braking i.e reducing the speed. For steering the mono wheel we have to lean on the side of where we have to take turn. This mono wheel has the motive of design to ride only for short distances. In our paper we describes the planning and process for mono wheel e bike. We have taken the reference from electric bike in the market to make mono wheel as a e bike. For our mono wheel e bike, it has less maintenance, less vibrations and having smaller size to park anywhere easily. It can be charged also easily at it's power station or at your home also .As In our mono wheel e bike we sit inside the wheel, the rider will be having fun and feeling crazy to ride it. In 19th century, the mono wheel bike were built are hand cranked and pedal powered and then. In 20th century most of the mono wheel vehicle are made on IC engines. Our researches only focuses on to reduce the pollution and reduce the weight and going to fabricate the mono wheel bike**

Keywords— propulsive forces, lean, steer, power station

I. INTRODUCTION

A mono wheel is a one-wheeled single-track vehicle similar to a unicycle. Instead of sitting above the wheel as in a unicycle, the rider sits either within the wheel or next to it. The wheel is a ring, usually driven by smaller wheels pressing against its inner rim. Most are single-passenger vehicles, though multi-passenger models have been built. Hand-cranked and pedal-powered mono wheels were patented and built in the late 19th century; most built in the 20th century have been motorized. This mono wheel bike looks like science fiction movie, but mono wheel are in fact real, today, mono wheels are generally built for fun and entertainment purposes.

Because of surging consciousness of pollution and energy shortage crisis, automobiles and motorcycles are no longer the best for transportation.

As the price of petroleum products growing now-a-days, there is a need of cheaper and more efficient form of transport. So for energy saving RYNO is created, what is RYNO? Well, in some way it's less than a motorcycle, but in other ways, it's so much more.

One-wheeled, electric-powered-vehicle

- Capable of operating at speed up to 40 kilometer per hour

- So in future electric vehicles are the demand of people, because of less pollution and saving of energy through electric vehicles
- The world speed record for a motorized mono wheel is 98.464 km/h

In mono wheel electric bike, there are components which will be fitted in mono wheel electric bike are given below:-

- Outer rim of 4.5 fit inner rim of 4 fit in inner rim other materials will be fit

- BLDC 500w motor, 48v batteries (4 battery of 12 v each)

- Transmission system for speed control steering

- Because of transmission system speed can be reduce and there should be not having chance of locking of brakes, so the mono wheel can't roll with passenger

- The main purpose was to design test and fabricate a fully functional one wheeled self-balancing bike which can be used as means of short distance transportation for a single person.

II. FABRICATION OF MONO-WHEEL E BIKE

A. Components

☐ Bldc motor 750watt :
It is the propulsive force of mono wheel e bike, it has forward and reversemobile motion, high rpm, high torque and having greater efficiency, firm response,