



M.KUMARASAMY

COLLEGE OF ENGINEERING

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University

ISO 9001:2015 & ISO 14001:2015 Certified Institution

Thalavapalayam, Karur - 639113.



Proceedings of the

DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems

(ICSPCS 2023)

MARCH 07TH, 2023



ORGANIZED BY,

Research and Development Cell,

Department of Electronics and Communication Engineering,

M.KUMARASAMY COLLEGE OF ENGINEERING,

THALAVAPALAYAM, KARUR - 639113, TAMILNADU, INDIA

www.mkce.ac.in



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DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems

(ICSPCS 2023 on 7th MARCH 2023)

ORGANIZED BY

RESEARCH AND DEVELOPMENT CELL

DEPARTMENT OF ELECTRONICS & COMMUNICATION
ENGINEERING

CONFERENCE PROCEEDINGS



OBJECTIVE OF ICSPCS 2023

Objective of this International level Interdisciplinary Conference is to facilitate academicians, researchers, industrialists, Undergraduate and post graduate students by presenting cutting edge research issues, Challenges and latest advances in the interdisciplinary fields.

Conference research papers/ articles and case studies from the authors are to present and exchange their insights on the recent developments in Engineering and Technology. The topics of coverage include the following. (But not limited to)

- Ad-hoc and Sensor Networks
- Remote Sensing
- Biomedical Engineering / Informatics
- Antennas
- Cloud and Mobile computing
- Wireless & Optical Communication
- Digital Signal Processing
- Digital and Medical Image
- VLSI Design Processing
- RF, Microwaves & Embedded Systems
- Smart Antennas



ABOUT OUR INSTITUTION

M.Kumarasamy College of Engineering established in the year 2000 by M.Kumarasamy Health and Educational Trust with a vision to provide technical education for all sections of the society has made rapid strides on all fronts to achieve academic excellence in a short span of time. The college has earned a remarkable position in the field of technical education through the untiring efforts of the visionary management, competent faculty members and stupendous students.

The institution with its state of the art facilities and dedicated team of faculty members has become a hub of technocrats and is marching towards new frontiers. The consistently good academic performance of the students coupled with excellent placement record portrays the quality of education being provided in the college. The mantra of success for the college emanates from its strong value system which gives prominence for developing responsible citizens to build a strong India.

The aim of the Institute is to enrich the present generation's knowledge with the latest developments in various fields of engineering and technology. Our performance has put us as a benchmark for other institutions and we have developed a popular name amongst the student fraternity.

We have strong placement cell which has good contacts with the industries and provide students with good industrial exposure and job careers.



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Vision of our Institute

To emerge as a leader among the top institutions in the field of technical education.

Mission of our Institute

- Produce smart technocrats with empirical knowledge who can surmount the global challenges.
- Create a diverse, fully-engaged, learner-centric campus environment to provide quality education to the students.
- Maintain mutually beneficial partnerships with our alumni, industry and professional associations.

Quality Policy

We, at M/s. M.Kumarasamy College of Engineering are committed to the Society in making our Students to live a purpose as responsible citizens with Ethical Values through provision of Quality Technical Education and continually improve to become a World Class Technological University.



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of Electronics and Communication was started in the year 2000. We embarked into the world of high-tech, striving for the best academic performance. We offer B.E. programme in Electronics and Communication Engineering and M.E. programme in Communication Systems. Department has good infrastructure and full-fledged laboratories which are industry oriented. The faculties of the department are highly qualified and are successful with timely up gradations in the curriculum and innovative teaching techniques.

Faculty members are deputed to participate in workshops, conferences, symposia and refresher courses to keep in pace with recent developments in the field of Electronics and Communications Engineering. The rigors of academic study at each level are balanced with a number of other related activities which include co-curricular activities for students. Special lectures and workshops on varied topic of academic relevance are held under the Extra Mural student series. We aim to produce highly skilled and scientifically oriented manpower through flexible, adaptive and progressive training programs and a coherent interaction among the research organizations, academicians and industries.



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Vision of the Department:

- To empower the Electronics and Communication Engineering students with Emerging Technologies, Professionalism, Innovative Research and Social Responsibility.

Mission of the Department:

- Attain the academic excellence through innovative teaching learning process, research areas & laboratories and Consultancy projects.
- Inculcate the students in problem solving and lifelong learning ability.
- Provide entrepreneurial skills and leadership qualities.
- Render the technical knowledge and skills of faculty members.



HIGHLIGHTS OF THE DEPARTMENT

Electronics and Communication Engineering Department is headed by Dr.S.Palanivel Rajan, M.E., Ph.D., MBA, D.Litt (USA), an eminent person behind the consecutive success of students and faculty members. With his tireless effort and motivation department is on the right direction in all aspects of its past, the present, bright future.



Research and Development Cell of Electronics and Communication Engineering was established on 18.02.2015 and it is taken care by our Department Research and Development Head, Dr.S.Palanivel Rajan, Professor, Department of ECE.

Department of Electronics and Communication Engineering has been recognized as Research centre by Anna University Chennai since 01.03.2017 and it has been renewed till December 2025. Department have Twelve recognized Ph.D Research supervisors and Thirty Five research scholars are being guided by Ph.D Research supervisors.



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Our ECE Department H-index is 22 (as on 07.03.2023). Dr.S.Palanivel Rajan has completed one Sponsored Research Project which is funded by TNSCST, Chennai entitled “Design of an aided system for visually challenged people in bus transportation” in the year 2019.

Various Grants have been received for organizing Seminars, Workshops, FDP's, etc., from TNSCST, UBAS, CSIR and AICTE. TURNITIN Licensed Plagiarism Software has been installed in our campus which can be used for unlimited submission of papers for checking Plagiarism. Faculty Members have published about more than 300 Journal articles in various reputed SCI/SCIE, SCOPUS and WoS indexed Journals. Twenty patents have been granted and Sixty Patents have been published till now.

Dr.S.Palanivel Rajan is a Reviewer in IEEE Antennas and Wireless Propagation Letters, IEEE Systems Journal, Journal of Network and Computer Applications (ELSEVIER), Journal of Biomedical Informatics (ELSEVIER), Engineering Science and Technology, an International Journal (ELSEVIER), International Journal of Intelligent Enterprise, European Journal of Information Systems, Journal of Engineering Technology, Journal of Applied Science and Engineering, Journal of Engineering Science and Technology - ETRI Journal, Associate Editor of Journal of Applied Research and Technology, Executive Editor of International Journal of Bioinformatics Research, Editor In-Chief of Health Sciences Research Journal, Editorial Board Member and Reviewer of American Journal of Biomedical Science and Engineering, Editorial Board Panel member of EC Cardiology Journal.



Various consultancy and research projects have been done in Intel Intelligent Systems Lab, PCB Design System Lab, TI Innovation Lab like Government Project (RTO) - Automated Driving Skest-Track System, Automatic Air-Curtain monitoring System to KRTF (ongoing).

- ❖ Dr.S.Palanivel Rajan, Professor/ECE has got 1 Patent (Utility) GRANTED in the title “AUTOMATIC FIRE SENSING AND EXTINGUISHING ROBOT Dated on, 05.01.2023”.
- ❖ Dr.S.Meivel, Assistant Professor/ECE has got 1 Patent (Utility) GRANTED in the title “AGRICULTURE DRONE FOR SPRAYING NUTRIENTS, Dated on, 25.01.2023”.
- ❖ Dr.S.Meivel, Assistant Professor/ECE has got 1 Patent (Utility) GRANTED in the title “Method and System for Detecting Growth and Disease Conditions based on Vegetation Indices of Plants, Dated on, 22.12.2022”.
- ❖ Dr.A.Kavitha, Professor/ECE has got 1 Patent (Utility) GRANTED in the Title “AUTOMATIC SECURITY LOGIC IN RAILWAY LEVEL CROSSINGS, Dated on, 11.12.2022”.
- ❖ Dr.S.Palanivel Rajan, Professor/ECE has got 1 Patent (Design) GRANTED in the title “A PROGRAMMABLE TAG TESTER DEVICE Dated on, 16.01.2022”.
- ❖ Research Incentives Rs.50000 Received by Dr.S.Palanivel Rajan from our beloved Secretary Dr. K.Ramakrishnan.



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- ❖ Dr.S.Vimalnath received a Elite Teacher Award from I2OR on the occasion of teacher's day (India) on 5th September 2022.





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❖ MoU has been signed with NITTTR, Chennai in 2022.

❖ MoU has been signed with UNIVERSITI TUN HUSSEIN ONN MALASIYA, Chennai in 2022.



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



Happy to share that

Department of ECE, M. Kumarasamy College of Engineering
Inks

MoU with National Institute Of Technical Teachers training And
Research , Chennai On

28 . 11 . 2022



MoU with UNIVERSITI TUN HUSSEIN ONN MALAYSIA
on 16.12.2022



PROFESSIONAL SOCIETY INAGURATION-21.10.2022



The Following activities have been conducted by our professional Society:

- ❖ Conducted One-day Seminar on "Timing Analysis of Digital Circuits" by Dr.R.Sakthivel, Associate Professor Grade 2, School of Electrical Engineering, Department of Micro and Nanoelectronics, VIT University, Vellore on 26.08.2022.
- ❖ Organized Hands on Training on Basic Electronics with Mini Projects by Galwin Technologies on 10.09.2022 for Second year Students.
- ❖ Organized an Online Faculty Development Programme (FDP) on "Intellectual Property Rights and Patent Filing" on 01.12.2022-07.12.2022 with 68 Participants.
- ❖ Organized (Genesis-2023) A National level Technical Symposium by the Department of ECE on 28th February 2023.



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The Alumni Interaction which was conducted by Department of ECE.





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- ❖ Dr.S.Vijayprasath, ECE, PSNA College of Engineering and Technology, Dindigul.
- ❖ Dr.K.S.Vishvaksenan, ECE, SSN College of Engineering, Chennai.



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CHIEF PATRON



Thiru.M.KUMARASAMY

CHAIRMAN

It is precociously here that institutions of higher learning gain their importance. They should take all possible efforts to achieve excellence. They should keep pace with rapid developments in new technologies and raise their benchmarks pertaining to their teaching learning process.

I am Confident that the DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems 2023 (ICSPCS-2023) on 7th March 2023 will showcase the exciting and challenging developments that are fast occurring in the field of Engineering and Technology.

The conference will be a forum discussion and dissemination of the latest advances in Engineering and Technology. The conference is being staged in Karur, which is the Educational and Industrial hub of Tamilnadu. I hope the delegates will have a comfortable stay and enjoy the traditional hospitality of the city.



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CHIEF PATRON



Dr.K.RAMAKRISHNAN

SECRETARY

It gives me a great pleasure, which our well known and prestigious Department of Electronics and Communication Engineering is planning to organize the DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems (ICSPCS-2023) on March 7th 2023.

This conference will provide thought provoking and knowledgeable platforms to the researchers, professionals, academicians and participants from reputed Institutions / industries to present their research findings with skills and innovative ideas which will immensely benefit the budding scientists and engineers in a larger scale.

I congratulate Dr.S.Palanivel Rajan, Convener and Organizing Chairs and other faculty members from Department of Electronics and Communication Engineering on their commendable venture.



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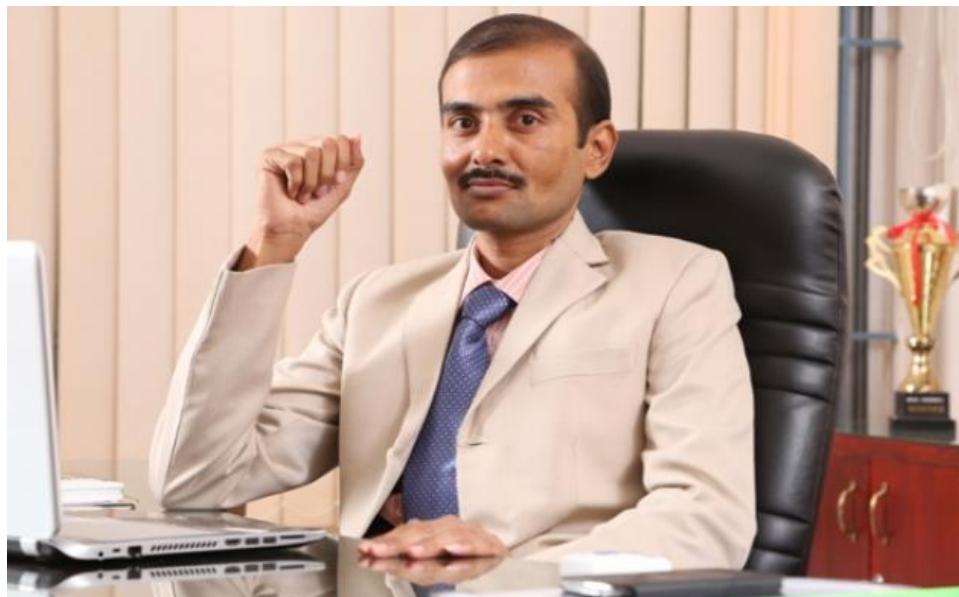
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PATRON



Dr.S.KUPPUSAMY

EXECUTIVE DIRECTOR

This DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems (ICSPCS-2023) on March 7th 2023 is one of the major technical events being organized by the Department of Electronics and Communication Engineering.

This conference will no doubt provide a wonderful opportunity to a large number of technical intellectuals across the globe to participate and share their knowledge and experience. The theme of this international conference would focus on the challenges of the evolving technologies in the field of engineering.

The main aim of this conference is to bring the experts, faculty and students from different places to a common platform to exchange their innovative ideas which in turn will be of immense help for the benefit of mankind. I congratulate the various teams for doing their team work successfully. I wish this conference will quench the knowledge thirst of our young and dynamic minds that form the backbone of our technological development.



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PRESIDENT



Dr.B.S.MURUGAN

PRINCIPAL

I would like to personally welcome each of you to the DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems 2023 (ICSPCS-2023) on 7th March 2023. It is an exciting time to grow, adapt, motivated and responsive to new up gradation and we will continue to meet and bring inspired people together in forums like this, to ensure our organization remains at the cutting edge.

In the broad area of Electronics and Communication Engineering topics like WLAN, Ad-hoc networks, RF, Microwave & Smart Antennas, Wireless and Optical Communication, Image and Signal processing, MEMS, VLSI, Embedded systems etc., are chosen for the deliberations of the international conference. Authors who publish with us are helping to build a Creative thinking that accelerates the growth, dissemination, application and brings out Ideas for Developing your Global Professional Learning Network in Information and Communication Engineering.

Seeing months, perhaps long stretches of difficult work concluded, all set out into the world and earn recognition is something wealthy.



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CONVENOR



Dr.S.PALANIVEL RAJAN

HEAD OF THE DEPARTMENT, DEPARTMENT OF ECE

I plan to develop this DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems 2023 (ICSPCS-2023) on 7th March 2023 into a full-fledged centre of learning in various fields of Electronics and Communication Engineering, keeping in view the latest developments.

To impart high quality research articles in technical education that can turn students into high performing engineers. Emerging areas and technologies are identified, as per the market trends and industry needs. Students are encouraged to pursue their choice of thrust area based on their skill set and aspiration.

Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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Dr.C.NANDAGOPAL

ASSOCIATE PROFESSOR, DEPARTMENT OF ECE

Mr.K.KAARTHIK

ASSISTANT PROFESSOR, DEPARTMENT OF ECE

It is our great pleasure to welcome you to the DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems 2023 (ICSPCS-2023) on 7th March 2023. It has been a real honour and privilege to serve as the Organizing Chairs of the conference.

ICSPCS 2023 has provided a cross-disciplinary venue for researchers and practitioners to address the rich space of communications and networking research and technology. Keynote presentation and Session Panels will provide ample opportunities for discussions, debate, and exchange of ideas and information among conference participants. The conference would not have been possible without the enthusiastic and hard work of a number of colleagues.

With all efforts perfectly coordinated aligned in the right path, we are confident that the conference will set the trend around its theme of achieving new heights in innovating and harnessing ‘Technologies for a Safe and Inclusive World. We look forward to your participation in this fascinating and adorning experience.



DST-SERB Sponsored Second International Conference on Signal Processing and Communication Systems (ICSPCS 2023)

March 7th 2023

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PAPER ID: E101

IOT ENABLED LORA BASED FOREST FIRE ALERT SYSTEM

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Abstract - Around the world, forest fires have become a serious problem since they damage homes, wild animals, and trees while also contaminating the air with a high Air Quality Index. The hothouse effect and climatic changes are two effects of similar devastation. For detecting numerous environmental characteristics that may approach the threshold level during a fire-based mishap, this suggested system uses an Arduino and a variety of sensors. Here, the temperature and smoke level of two primary factors are regularly monitored. Smoke is detected using the gas sensor MQ6, which measures and detects carbon-based gases. Smoke creates CO₂, making it feasible to detect smoke using the Ds18b21 wire-based temperature sensor. Additionally, a PIR sensor is utilized to detect motion of any human. The analogue gas and temperature sensors are attached to one Arduino analogue pin. Fire notifies the relevant Tamil Nadu Forest Department at the site of the node and hub via Long Range Communication (LoRa). The detecting system uses very little electricity and is powered by solar panels. LoRa can send data over larger distances of up to 15 km. To monitor and save these characteristics, an online interface is also established.

Keywords: Internet of Things, Wi-Fi; LoRA; Sensors.

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PATIENT HEALTH MONITORING USING IOT

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Abstract—When handled on a big scale, conventional sensor dependent therapeutic in the medical profession necessitates a large count of sensors and human labour. Due to the lack of medical personnel and the way the system is set up, it is a challenging endeavor. In the research effort, an IoT-based primary care pertinence is suggested as a solution to this problem. The mobile application that is based on ongoing wireless patient monitoring makes up the suggested system. The wireless network is utilized to measure the patient's fundamental signs using sensors. The sensors statistics are gathered and sent via application to the doctor's database. Doctors' workload is lessened and patients' actual health status is provided by remote



viewing. A notification is sent to the doctor via the program if the patient needs urgent care. A growing number of people in underdeveloped nations today. Analogous as far as how India is compelled to explore for novel approaches to the ongoing monitoring of health screening. Frequent visits to the doctor for patient visits are now obligatory, which is time- and monetarily costly. lengthy process. To address this issue, we suggest a system that would send information about the patient's warmth and heart rate to a web server via an IOT device. The internet of things (IoT), which have been recently developed connects all objects and has lately been dubbed the next technological revolution. One IoT that are used for assessing clinical outcomes involves outpatient monitoring. The internet of things increases the efficiency of medical equipment by permitting real-time health monitoring. Using IoT, the clinician may keep a watch here on client assessment via his device. In addition, the patient's medical history will be saved on a central server so that the practitioner can access those when desired.

Keywords: Monitoring, Body temperature, Pulse Rate, Registered cell number.

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FACE RECOGNITION BASE ON SMART ATTENDANCE SYSTEM USING PYTHON

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Abstract— Many things are being developed using future technology, but our attendance system still following the traditional manner. Even while it is expanding, it is still limited to fingerprint access. Essential Step with Real-Time Facial Images is found to be the practical solution for student attendance management. Facial acknowledgment-based attendance software by recognising students' faces using facial biometrics based on high-resolution measure recordings and other technological innovations to gather attendance. In my field of work, a software is designed that can quickly recognise human faces by using photos or videos recorded by a security camera. Enhanced methodologies and techniques have been developed to escalate the accuracy of face recognition, but deep learning is the idea to be used here because it aids in the conversion of video frames into photos is very efficient, so that the students' faces can be easily recognised for their presence and automatically reflected back in register database.

Keywords: Local Binary Pattern Histogram, Open CV, Facial Analysis, support vector machine, convolutional neural network.

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AUTOMATIC IMAGE AND VIDEO CAPTION GENERATION WITH DEEP LEARNING: A REVIEW

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Abstract— Methodologies that utilize Deep Learning offer great potential for applications that automatically attempt to generate captions or descriptions about images and video frames. Image and video captioning are considered to be intellectually challenging problems in imaging science. The application domains include automatic caption (or description) generation for images and videos for people who suffer from various degrees of visual impairment; the automatic creation of metadata for images and videos (indexing) for use by search engines; general-purpose robot vision systems; and many others. Each of these application domains can positively and significantly impact many other task-specific applications. This article is a review of both image captioning and video captioning methodologies based on deep learning.

Keywords: Deep learning, image captioning, video captioning, long short term memory.



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CRACK DETECTION IN RAILWAY TRACKS USING IMAGE PROCESSING

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Abstract—In order to prevent train accidents during the rainy and warm months rail management mainly relies on the detection of flaws or fractures in the railway track the track started to split in the summer making it possible for train wheels to derail a neural network classifier is trained using these extracted characteristics to separate the rail track image into pictures with and without cracks in the first portion of the article which largely discusses in accordance with the structure and guiding principle of the automated inspection system the acquisition device is chosen based on the inspection requirements of the track inspection picture. when compared to say a variety of those other widely used image filtering techniques the weight median filtering strategy improves the track detection picture the filtered image is improved via a histogram equalization method many crack photographs that have been acquired from diverse settings are used to demonstrate this method the current image is automatically classified using the taught patterns in this method improving classification accuracy the original image is isolated from the backdrop image next utilizing a mix of custom and iterative methods the threshold and crack area are finally determined.

Keywords— Image , MATLAB, ANN(Artificial Neural Network), Color Image Processing.

PAPER ID: E115

SYSTEMATIC ANALYSIS OF THE INCREASE IN HEALTH DETERIORATION DUE TO LIFESTYLE CHANGES

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Abstract— The aim of this review is to track down various changes in the adult human lifestyle like intake of nutrients that affects the health of a person. The data was collected from different articles published on WHO official site, NCBI, PubMed and Google open access publications. The review identified the factors related to changing lifestyle of population of countries including Japan, India, and United States. Lifestyle changes like decrease in quality of nutrients intake that results in increase in fats and other nutrients that may prove harmful to health if consumed excessively in daily food routine leads to changes in weight that eventually affect body mass index (BMI). Changes in BMI indicates the dysfunction in body which leads to disorders like Diabetes Mellitus, Cancer, and Cardiovascular Diseases. The purpose of this research paper is to systematically



analyze the reasons behind this increase and compare the situation in each country. In this study, we quantified the association of changes in lifestyle profiles over 20 years with the risk of CVD, Cancer, and Diabetes mellitus mortality.

Keywords— Diabetes, Cardiovascular disease, Cancer, Analysis.

PAPER ID: E116

SMART ROBOT FOR COLLECTION AND SEGREGATION OF GARBAGE

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Abstract—This paper proposes a robotic bot to collect the litter thrown and segregate the garbage so as to reduce human effort and keep the environment clean. The proposed robotic bot autonomously identifies garbage and classifies it into biodegradable and non-biodegradable. The final collected garbage is, in a way, segregated automatically. The robot moves towards the garbage just like a rag picker does. When the robot's bins are full, a signaling system is created. This autonomous bot is capable of collecting, segregating and providing signals if the garbage bin is full. The yolov4 model was used to train a dataset of 10,000 images of both the categories and the model was able to detect the test images with adequate efficiency of 99.66 percent, making it promising candidate for using as an alternative to human effort.

Keywords—machine learning, YOLOv4, object detection, garbage segregation, image classification, garbage collection, motors

PAPER ID: E117

A REVIEW ON DIABETES AND CARDIOVASCULAR DISEASES: GROWTH RATE & CAUSES

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Abstract— The ubiquity of diabetes mellitus (DM) is rapidly increasing and becoming one of the most common and costly chronic diseases in the world. There is a strong link between diabetes and cardiovascular disease (CVD), one of the leading causes of morbidity and mortality in people with diabetes. Cardiovascular (CV) risk factors such as obesity and hypertension are common in diabetic patients and put them at higher risk for cardiovascular events. Furthermore, many studies have found biological mechanisms linked with diabetes, independently increasing the exposure of cardiovascular disease in diabetic patients. Therefore, targeting cardiovascular risk factors in patients with diabetes is essential to minimize the long-term cardiovascular complications of the disease. This study summarizes the relationship between diabetes mellitus and cardiovascular disease, investigates the mechanism of disease progression, discusses current treatment recommendations and provides an analysis of the two diseases.

Keywords— Diabetes, Cardiovascular disease, Causes, Analysis



PAPER ID: E119

REALTIME CRIME FORECASTING USING LSTM MODEL

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Abstract--People are impacted by crime in various ways. The association between time and crime incidence behaviors has been demonstrated in earlier studies. In order to model time series data using neural networks, this study makes use of the Long Short-Term Memory network, to understand and investigate the link between time, crime occurrence forms, and places. Utilizing a recurrent neural network model for LSTM, the acquired data is prepped, scrutinized, and tested. The accuracy is also analyzed using RMSE. The study's findings indicate that using LSTM RNNs can generate forecasts about the timing of crime incidence occurrence that are more appropriate. Precise crime prediction advances the judicial system by enhancing decision-making and crime prevention. According to the prediction outputs, the Prophet Model and Keras state complete LSTM outperform neural organization models. The recommended size of the training data is determined to be three years.

Keywords: LSTM, RNN, RMSE and Keras.

PAPER ID: E120

PREDICTION OF CROP YIELD USING ANFIS MODEL

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Abstract--Crop yield forecasting is crucial because it helps agricultural decision-makers. It also helps in determining the relevance of characteristics that have a big impact on crop output. One of the most widely cultivated crops in the Tamil Nadu is rice. Its precise prediction can address a number of issues with rice growing. This study examines the relationship between a few qualities and the yield of a particular crop. By taking soil forecast, weather, into consider the input parameters. In this system, the models of fuzzy logic (FL) and adaptive neuro fuzzy inference system (ANFIS) are used to predict agricultural productivity. The result of the prediction models will help agriculture organizations by supplying farmers with important knowledge about the elements that lead to great crop production. The ANFIS model, which has a lower RMSE value than the MLR and FL models, outperforms them, according to the results.

Keywords: Crop Yield, Rice, Fuzzy Logic.

PAPER ID: E121

WIRELESS CONTROL AND MONITORING OF BOILER DRUM LEVEL USING IOT

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Abstract—A boiler is the most crucial component of a process industry or power plant. Boiler drum control in a thermal power plant consists of the flow of feed water, the level of the drum, and the flow of steam are three process variables.. In the boiler drum, there is a water interface, and it is quite difficult to keep the water level there constant. If the water level falls too low, the boiler might run dry and incur mechanical harm to the drum and boiler pipes. Water can overflow and enter steam pipes. If the level rises too high, damaging equipment further down the line. For experimental analysis, The DCS system receives and logs data from the whole plant. The data logging system of the plant DCS monitors process variables while measuring and recording the manipulated variable control signal, etc., of various control processes and multi loop control in a plant. Large amounts of memory are needed for data logging in order to capture the various plant characteristics. IOT technology uses the measured variables that are saved in the cloud and employed in the process, which reduces the amount of memory that DCS needs to function. In this project, factors that are tracked and the regulation of the boiler drum level in the power plant.

Keywords: Boiler drum, IoT, Temperature, Level, Flow, control, Monitoring.

PAPER ID: E122

BREAKING THE BOTTLENECKS IN THE SUPPLY CHAIN USING DEEP LEARNING AND BLOCKCHAIN

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Abstract—This project proposes a supply chain management system that uses advanced technologies like deep learning and the block chain to improve the efficiency and transparency of supply chain operations. The system includes several modules, such as predictive maintenance, inventory optimization, and route optimization, each of which uses a different deep learning approach to analyse data and provide insights for better decision making. The system also utilizes block chain technology to create a tamper-proof and transparent ledger of transactions, ensuring that all parties in the supply chain have access to accurate and reliable information. The proposed system has the potential to revolutionize supply chain management by reducing errors, improving management, and increasing consumer and supplier trust.

Keywords: Supply Chain; Block chain; Hyper ledger; Deep Learning; LSTM Networks; Deep Reinforcement Learning; Graph Neural Networks.



PAPER ID: E123

MALWARE DETECTION IN ANDROID APPLICATION

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Abstract—Numerous free and paid apps have been produced as a result of the increased use of smartphones. These programmes enable users to perform a wide range of daily tasks, including as playing games, sending data, communicating, and engaging in other activities. Recent studies show that the malware infection issue has gotten so serious and nasty that 98% of mobile malware specifically targeted Android smartphones. To combat these dangerous cyber attacks, a scalable malware detection technique that properly and effectively locates harmful software is required. Scaling detection is still a challenging process for a large software package. Significant Permission Identification (SigPID), based on an assessment of permission usage, that suggest as a result of the rapid rise in Android malware. Instead of extracting/analyzing every Android permission, this study recommends three rounds of trimming using permission data mining to identify the most important permissions that are helpful in discriminating between safe and harmful apps. With the aid of machine learning, SigPID can classify many types of safe apps and harmful apps into different categories. Random Forest technique has been implemented in the current system. This project identifies the non-sensitive permissions, the benign permission list, and the hazardous permission list. Then, the new data set is subjected to SVM classification and KNN. Python is being used to create the project.

Keywords: malicious, Support Vector Machine, classification, benign, Droid Miner

PAPER ID: E124

SENTIMENTAL ANALYSIS USING MACHINE LEARNING

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Abstract—A collaborative multi-Trends sentiment class technique is used to teach sentiment classifiers for a couple of tweets. While classified statistics are scarce, the method uses sentiment facts in exceptional tweets to teach extra-correct and powerful sentiment classifiers for every trend. In particular, the sentiment classifier of every Trend is broken down into two parts. They are worldwide and Trends-unique. Numerous purchaser evaluations of subjects are actually to be had in the online world. Automatically identifies the vital components of subjects from online purchaser evaluations. The vital product components are diagnosed primarily based totally on observations. With the goal of categorizing developments early on. This would permit to offer a filtered subset of developments to quit users. Examination and tests are done with a fixed of straightforward



language-impartial capabilities primarily based totally on the social unfold of developments to categorize them into the added typology. The global version, which is disseminated through several tweets, can capture the overall sentiment expertise. The Trends-unique Greedy & Dynamic Blocking Algorithms model Naive Bayes and Drimux SVM can seize the unique sentiment expressions in every Trend. The extraction of Trends-unique sentiment expertise from each labeled and unlabeled sample in every Trend is done, which is then utilized to decorate the training of Trends-unique sentiment classifiers. The similarities among tweets are incorporated into the method as regularization over Trends-unique sentiment classifiers to inspire the distribution of sentiment facts among comparable tweets. Two different forms of Trends similarity measures are investigated. They are based only on text and the other is based entirely on sentiment expressions. Furthermore, green algorithms are introduced to clarify the version of the method used. Experimental outcomes on benchmark datasets display that the method can efficiently enhance the overall performance of the multi-Trends sentiment class and remarkably perform better than baseline methods.

Keywords: Sentimental Analysis, Trending Tweets, Naïve Bayes Algorithm, Greedy and Dynamic Blocking Algorithm, Drimux, SVM

PAPER ID: E125

SMART SPEAKING GLOVE

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Abstract —The SMART SPEAKING GLOVE is an easier means of communication between speech impaired people and normal people using synthesized speech. A smart glove is incorporated with flex sensors whose, resistance value changes according to the gesture specified by the user. This gesture information is processed by the Arduino Mega 2560 microcontroller and corresponding voice output is given through speaker in the desired language. In case of emergency, the location of user can be tracked through GPS and a message is sent to the guardian through GSM.

Keywords: Arduino Mega Controller, GPS, GSM, Flex Sensor, Speaker.

PAPER ID: E126

REDUCTION OF DATA TRANSMISSION LOSS USING MIMO TECHNIQUE

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Abstract—The single-RF reconfigurable MIMO transmission scheme is capable of forming multiple antenna patterns. It supports repeated multiple symbol transmissions. It can be implemented easily by using QPSK encoding concept. QPSK creates a flexible balance between rate and diversity gain using time pattern dispersion matrix. In this sense, it can be a semi virtual MIMO system. More specifically, the proposed scheme is based on the concept of pattern-time dispersion matrix activation, which is capable of striking a flexible balance between the transmission rate and the diversity gain, while enabling symbol based low-complexity detection.

Keywords: MIMO, RF and QPSK.



PAPER ID: E128

THIRD EYE FOR THE BLIND USING MACHINE LEARNING

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Abstract—Blind entities are answerable to get in interface with so forth burden which certification before them through mobile, jeopardizing them to jeopardy of protest create from drop and it can also cause innumerable injury to them. The goal of this project is to cultivate a shrewd cane with coldness amount organization. The application is made up of an quicker sensor as say and headset as the productivity. Ultrasonic radar is used to degree taciturnity from the inhibition. Statistics is then sent to Overall Implement Arduino UNO microcontroller for allowance which forthcoming harvest vocal sound for alerting the darkness persons as the yield. Also, the body includes the GPS system alert cracking organization and attendant the track for canopy person. It will help the people to overcome their problem without any help from other individuals. In overall, the trick will vigilant blind persons of the hindrances through the auditory output over which they can pace carefully deprived of any delicate.

Keywords: Node MCU, APR9600, Speaker, YOLO.

PAPER ID: E132

TRAFFIC SIGN BOARD DETECTION

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Abstract—Currently, Vehicles with capability to tone- drive are even decades. Ace of the most vital functionalities which need near be taken into deliberation is the capability of a tone- drive auto to fete and descry the business signs from a certain distance in order to take necessary conduct and give security and safety for the people inside the auto as well as to the surroundings. Business sign discovery and recognition system is a clamant technology in developing world to robustly identify, descry, fete and cover the road business signs to help the motorist to give robust and dependable drive grounded on image data recaptured. TSDR system detects and recognizes the business signs on the base of features similar as color, shape & texture etc. In this paper a comprehensive study on the TSDR system along with several business signs and colorful discovery and recognition styles on the base of color, shape, texture is stressed along with the colorful mongrel styles involved in object discovery. The key idea of this daily is to training and give information related to colorful styles used in TSDR over recent times. The proposed research work was implemented to alert the user about traffic on the road and accidents occurring maximum through the IoT platform with the help of an Android mobile application using hardware and sensors. It makes the travelers suggest a route with less traffic and minimum accidents occurring to protect their lives. So far, HBRP is the probability algorithm used for implementation and produces better results on detection.



Keywords: Traffic sign, Segmentation, Gabor filter, YCBCR conversion.

PAPER ID: E133

A STABLE AI BASED BREAST CANCER PREDICTION MODEL USING FUZZY LOGIC TECHNIQUE

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Abstract-Each year, the number of fatalities from breast cancer rises considerably. It is the most prevalent type of cancer and the leading cause of mortality for women around the world. Any improvement in cancer sickness prediction and diagnosis is critical for a healthy life. As a consequence, an accurate cancer prediction is critical for updating treatment guidelines and patient survival rates. Machine learning approaches have been a research emphasis, and they have been shown to be successful in the early identification and prediction of breast cancer. In this work, we applied machine learning techniques such as gradient boosting decision trees, fuzzy GBDT, and bagging fuzzy GBDT to the Breast Cancer Wisconsin Diagnostic dataset which shows better accuracy.

Keywords: Fuzzy logic, gradient boosting decision tree (GBDT), Breast cancer diagnosis, Fine Needle Aspiration Cytology (FNAC).

PAPER ID: E135

AUTONOMOUS SAFETY SURVEILLANCE SYSTEM FOR INDOOR ENVIRONMENTS

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Abstarct: —In this project we develop an autonomous safety surveillance system for indoor environments. This aims to prevent several accidents in factory fire and detect any occurrence of explosions. This System consists of three subsystems which includes, an Autonomous Surveillance System, Telegram Notification System and Remote Webpage Monitoring System. We are monitoring several environmental parameters using temperature sensor, humidity sensor, Gas sensor and fire sensor. Autonomous surveillance system identifies a safety problem and provides warnings remotely through the internet to the user as the captured image of surveillance will be sent to the user through telegram bot. When the temperature or humidity of the system goes beyond tolerable levels or when the system detects any presence of fire or flammable or explosive gas notification is immediately sent to the users through Telegram. The Entire System works on battery power and revolve around a track to survey the environment and will charge at a charging point located along the track when necessary. The Autonomous Surveillance System can perform the surveillance tasks and identify environmental disaster statuses automatically without human Interruption.

Keywords: Surveillance, environmental disaster Alert, Remote Webpage



PAPER ID: E136

APPLICATION FOR BUYING PESTICIDES AND WEEDICIDES

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Abstract—In India most of the population is depending on agriculture and Farmer is the backbone of the Indian economy. The system consists of smart phone applications. The System can be used by farmers on the android application on mobile devices. In this world of the rapid increase of technological advancement, modern innovations have been helping us to evolve to become someone better and helped us to work more efficiently and effectively. With the help of technology, Here we have come up with an android application which can be used in smart shopping carts that solve these difficult and provide a better shopping experience. we created this Android application that could help the farmers to buy the pesticides, weedicide and also helps to find the availability of pesticide and weedicide in nearby agro stores.

Keywords: Farmers, Android Application, Pesticides and Weedicide.

PAPER ID: E137

AUTOMATIC SURFACE DRAINAGE USING PCB

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Abstract—Surface drainage is very useful in removing excess water from land to an artificial drainage system or natural watercourse in controlled manner and as quickly as possible. This must be done with no damage to the environment. Wet soil problems on dairy pasture are usually because of both excess surface and subsurface water. It is important to realize that surface drains will only remove surface water and, in most soil types, are almost useless for drainage the soil profile. In farming of agriculture land due consideration of drainage is a necessity to keep our crop efficiency satisfactory. In traditional method, ridge opening and using pipes to discharge the excess of water. In these project, automatic surface drainage system using PCB (Printed Circuit Board) to discharge excess of water.

Keywords: Soil, Pipe, PCB, Water



PAPER ID: E138

MACHINE LEARNING PREDICTION OF BIOLOGICAL AGEING OF BRAIN

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Abstract: Ageing of an individual is an important challenge in this modern world and has a great impact on all aspects of society. As we age, the cells, tissues, organs in the human body will change. It is very complicated to analyze the human ageing process from a biological point of view, and no obvious features have been found so far. Generally speaking, aging is the gradual accumulation of harmful biological changes accompanied by the gradual loss of function. However, like all species aging increases the risk of mortality and death in humans. Moreover, the process of human biological aging is different, especially the external manifestations of aging (for example, skin wrinkles, whitening of hair, cataract and other age-related conditions), also the age onset of each patient is also different. In this point of view, that age is not the only measure of aging, which has evoked scientists to work hard to analyze aging from a biological manner, particularly with the goal of predicting human BA and using BA as a basic for measuring aging. By comparing with chronological age (CA), it can be easy to predict further life and disease risk. Here, we will show the potential of supervised ML methods to estimate BA, focusing on the latest developments in computing a systemic (blood-based) brain specific-age and facial-age estimation. Especially, by the availability of blood test, brain imaging data and other clinical events, these models show the best performance in the process of accuracy and prediction of mortality risk and can be easily applied for long term studies. This paper aims to provide references for researchers and doctors who are studying age-related diseases and believes to help them make contributions in this field.

Keywords: Biological age, Aging Biomarkers, Supervised, Machine learning, Chronological age.

**PAPER ID: E140****IOT BASED GLUCOSE BOTTLE LEVEL AND PATIENT MONITORING SYSTEM**

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Abstract—Moment's rapid-fire growth of senior populations and growing problems coupled with the frequency of obstructive sleep apnea and other health- related issues have affected numerous aspects of society. This has led to high demands for further robust healthcare monitoring and treatment installations. Case shadowing structures are the period for all the multitudinous widgets that are used to supervise victims. One order of similar bias is bias that indicate if the affected person gets right into a critical state. Our proposed system focuses on monitoring and initiating cautions to croakers roughly the victims at some points of fluid trip injections. The proposed system comprises detectors that will act as position detectors for covering the critical position of the fluid in the fluid bottle. Whenever the position of the fluid reaches the pre-defined critical position, also the nurses, caretakers, and croakers will be advised through the buzzer. This proposed system can be employed efficiently in homes as well as hospitals. The Internet of effects(IoT) is the network of physical objects comprising all the bias, vehicles, structures, and other particulars bedded with electronics, software, and detectors which enables these objects to collect and change data amongst each other.

Keywords: Robust health monitoring, patient structures, Fluid bottle buzzer.

PAPER ID: E141**DESIGN AND MANAGEMENT OF AN INTELLIGENT PARKING SLOT SYSTEM USING COMPUTER VISION**

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Abstract—Our nation has been rapidly developing for decades, with a large number of business buildings, well maintained highways, and an increasing number of vehicles. Due to the transportation sector's extensive use in trade and commerce, it has also turned into the foundation of the economy. Parking the automobiles has therefore become an issue. Parking availability is a major problem in some areas, particularly in retail centres, hospitals, and other structures that need a lot of room to park cars. The established methods of placing sensors for parking cars grow expensive. As a result, an effective



strategy that lasts a long period is needed to handle the congestion problem. The goal of this project is to provide an 10T framework for smart vehicle parking. The method that has been created yields consistent results when the parameters of parking effectiveness and search time are used.

Keywords: Intelligent Parking, Raspberry Pi, Yolo.

PAPER ID: E142**WATER QUALITY PREDICTION USING OMNIPRESENT DATA: A DATA-DRIVEN APPROACH**

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Abstract- The quality of Urban Water plays an important role in our daily life. Prediction of its Quality helps us control pollution and increase the water quality. For, this prediction we use a data-driven approach is nothing but making decisions based on data analysis and interpretation. We need to figure out what are the features that are affecting urban water quality. We provide a method for combining many datasets from various domains into a single learning model called multi-task multi-view learning. We test our methodology using real-world datasets, and our thorough tests confirm its advantages over competing approaches and show its efficacy.

Keywords: *Urban water quality prediction, big data, multi-view learning, multi-task learning.*

PAPER ID: E143**EARLY DIAGNOSIS OF FETAL PATHOLOGIES USING MACHINE LEARNING ALGORITHMS ON FETALPHONOCARDIOGRAPHY (FPCG) SIGNALS**

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Abstract—Fetal phonocardiography (fPCG) is a monitoring technique used to assess fetal well-being during pregnancy and child birth. It is a graphical record of fetal heart sounds (fHS) measured on the surface of the mother's body. In this paper, a classifier of fetal heart sounds into 'Normal' and 'Abnormal' is developed, which could be used in practice to monitor mothers who are at increased risk during pregnancy, and remove the need to have a skilled clinician present. For this study, data is acquired from The Indian Institute of Science Fetal Heart Sound Database (IIScFHSDB) containing 60 fetal phonocardiography signals. Empirical Mode Decomposition (EMD) method is used at preprocessing stage. Neighbourhood Component Analysis (NCA) is used for selecting a small subset of features that carry information most relevant to the classification task while minimizing redundancy among selected features. The system accuracy is analyzed on different Machine Learning Classifiers via Matlab 2022a. Improvement in accuracy is carried out by exploring new features of Fetal heart sounds for better and robust classification of Fetal Health Monitoring. The developed system constitutes the first step for realizing a new clinical classification system for the early diagnosis of most common fetal pathologies. Index terms – fPCG, fetal heart sound, classification, machine learning

Keywords: Pregnancy, Health, MATLAB



PAPER ID: E144

COMPARISON AND PERFORMANCE STUDY OF AN ARTIFICIAL NEURAL NETWORK WITH MACHINE LEARNING FOR A BABY INCUBATOR

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Abstract—The neonatal incubator is a closed apparatus that provides a controlled environment for all aspects of care of premature infants. The majority of premature infants die between the 32nd and 37th week of gestation due to a lack of basic factors, the most important of which is temperature. Temperature is controlled with the help of a PID controller. This idea leads to automatic adjustment of PID controller by comparing the two adjustment methods Ziegler Nichols and Tyreus Luyben and finding the best method. This will give the best automatic control of the temperature.

Keywords: Neonatal incubator, PID controller, temperature control, Ziegler Nichols, Tyreus Luyben, automatic control

PAPER ID: E146

A WEARABLE SENSOR NETWORK SYSTEM FOR SAFETY AND HEALTH MONITORING USING IOT

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Abstract—This project is to establish and to secure an individual in their work stead, especially in mining excavations. To observe their active parameters such as heart beat spo2 etc. This process put forward to comprise by using multiple sensors to monitor and ensure the safety in the work stead. A wearable sensor network system by using IOT make sure to associate with the health applications. Various types of sensors using in this forecast such as heart beat sensor for heart rate monitoring, thermistor for body temperature, pollution sensors for environment monitoring, temperature sensor for environmental temperature.

Keywords: CO2 Sensor, spo2 sensor, humidity sensor, temperature sensor.

**PAPER ID: E147****DRUG DETECTION AND NOTIFICATION SYSTEM**

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Abstract—Nowadays drunk and driving becoming main reason for road accidents. A statistic on road accidents concluding that the accidents are occurring due to the presence of excess content of alcohol in driver's blood. So, to prevent or lessen the accidents occurring due to drunk and drive a small kit designed with NodeMCU and its supporting components which is used to detect the presence of alcohol in the surroundings. A MQ3 sensor will detect the presence of alcohol. It detects the alcohol and once it crosses the threshold value it sends output that alcohol is detected further it won't allow the motor too turn ON. It can be achieved by relay to turn ONN and OFF the motor. This project a has an LCD for displaying the parameters. When sensor detects the presence of alcohol it shows notification to family members or the person to whom the information to be conveyed with latitude and longitude

Keywords: Node MCU, Alcohol sensor (MQ3), Buzzer, DC Motor, LCD Display, Relay

PAPER ID: E148**HIGH SPEED VIDEO STREAMING BASED ON FRAME MODELLING**

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Abstract—Global communications and data processing are essential fields that include video streaming. Server and client sides are separate and linked by a network. In this paper, we suggested a method for streaming video that involves video frame skipping and interpolation. Transmitter and receiver are the two major sections of this technique. In order to decrease the number of frames that need to be transmitted over the network, the transmitter uses a Frame Skipping Mechanism (FSM). This technique is used to drop or skip comparable frames from a video streaming sequence. Reconstructing video-Frames Interpolation (RFI) was used by the receiver to reconstruct the frames that were dropped on the transmitter side. The PSNR measurement technique was used to evaluate the reconstructed frames and videos. The study concludes that by dropping frames on the server side and reconstructing them on the client side, it is possible to reduce the amount of transfer data.

Keywords: Video Streaming, Frame skipping, Interpolation.



PAPER ID: E149

ANCIENT TAMIL STONE INSCRIPTION CHARACTER RECOGNITION USING DEEP LEARNING

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Abstract—Numerous millions of people speak Tamil, one of the oldest languages in the world, in Tamil Nadu's southern region. One of the difficulties facing epigraphers in the discipline of archaeology is the identification of ancient Tamil characters. Recognizing the characters engraved on stones reveals more details. The ancient Tamil characters are read using OCR technology. Characters from the ninth to the twelfth centuries are identified. The process of turning the input text image files into a machine-editable format is called optical character recognition (OCR). Pre-processing, segmentation, and recognition are key OCR procedures. Deep Learning (DL) has been applied to text detection, object tracking, face recognition, scene labelling, and image classification, among other tasks. The most popular Deep Learning model, Convolution Neural Network (CNN), has shown excellent performance in picture classification. The CNN architecture is trained to extract sample features. In a hierarchical fashion, CNN may automatically learn a special set of features from the photos. By mapping our framework, we were able to attain the segmentation and recognition rates. Tamil characters from antiquity to modern Tamil characters.

Keywords: Language, Deep, Learning, CNN.

PAPER ID: E150

PREDICTION OF HUMAN STRESS BY CHARACTERISTICS OF PHYSIOLOGY

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Abstract—Since the discovery, EEG and ECG are being a standard approach for identifying particular medical issues in individuals. Because of the many types of classifiers available for usage, the study approaches are also diverse. The AI approaches developed for EEG and ECG research with bioengineering applications has developed path where the impossible in the past becomes possible in the present. Stress is the condition of a person which occurs by any demanding or upsetting situations. The main generator of stress is identified as cerebrum from the brain and the actions of heart muscles which makes the human beings vulnerable. Electrocardiogram sometimes referred to as a cardiac electrogram, is a graph that displays the voltage of the heart's electrical activity over time a determined by electrodes implanted under the skin. The important factors from both ECG and EEG are taken into account and based on the algorithm named ADT-SVM is implemented in order to predict whether the individual is under stress or not.

Keywords: EEG, ECG, Stress, AI, ADT-SVM



PAPER ID: E153

DIABETES PREDICTION USING LOGISTIC REGRESSION: MACHINE LEARNING TECHNIQUES

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Abstract: One of the severe diseases, diabetes mellitus results in abnormal blood sugar levels because the body has trouble generating the hormone insulin. If it is not detected early, it might harm the kidney, nerves, and eyes, among other body organs. As technology develops, more individuals are drawn to individualized healthcare. Machine learning, a field of predictive analysis that is quickly increasing, is widely applied in healthcare applications to foresee diseases and associated symptoms in advance. The major goal is to use machine learning classification algorithms of this research is prediction of diabetes while taking important diabetes-related factors into account. The suggested model provides the most accurate results when compared to clinical outcomes and aids in patient-specific diagnosis. One of the methods used in machine learning is logistic regression are employed in the examination of early-stage diabetes's prognostic potential. For experimental analysis, data from the machine learning repository's Pima Indian Diabetes Database (PIDD) is used. These classification algorithms' performance is evaluated using a variety of statistical metrics, including F-score, accuracy, sensitivity (recall), and precision. The measurement of correctly and erroneously classified cases is called accuracy. According to the testing findings, Logistic Regression (LR) outscored the best performance of 93.1% is an accuracy value.

Keywords: Diabetes Mellitus; Blood Glucose; Machine Learning; LR

PAPER ID: E154

IOT BASED AMBULANCE MONITORING AND SMART TRAFFIC CONTROL SYSTEM

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Abstract
—In developing nations

like India, traffic congestion is a major issue. In modern urban areas, the number of road accidents has increased to an uncertain level. Traffic congestion and tide flow are the primary factors that delay the ambulance arrival. The time-based traffic management system that is currently in use is neither appropriate nor adaptable to the today's traffic. There are numerous causes for this traffic jam. The rapid growth in population is one of these. The number of vehicles is increasing annually as a result. This makes it difficult for the ambulance to get to the hospital on time. However, because it allocates equal time slots to each road it is managing, traditional traffic control signals fail to manage time effectively. As a result, emergency vehicles like ambulances and fire trucks have to wait longer than necessary. Numerous lives are now lost before the ambulance takes the patient to the hospital. This paper offers a solution to the problem of ambulance delays, that is an IoT-based ambulance and automatic traffic control management system. This system collects basic patient information and information about the patient's condition in the ambulance through the Internet of Things and makes it available to the hospital before the ambulance reaches the hospital. Here Radio Frequency-based traffic light control system with a tracking



mechanism that automatically clears the ambulance's path is used. With this system, we can get to the hospital on time to save a life and avoid having the ambulance wait at a traffic signal.

Keywords: Internet of Things, Ambulance , Radio Frequency, Traffic Control Management

PAPER ID: E155**DESIGN OF MICROSTRIP PATCH ANTENNA IN ISM BAND FOR BIOMEDICAL APPLICATIONS**

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Abstract: Telemetry is used to measure, collect, analyze, and transmit data. It has gained recognition in various fields namely data science, agriculture, meteorology, defense and most importantly medical and healthcare. Biotelemetry is used to track and monitor the physiological events in a human by measuring the biological parameters by making use of implantable medical devices. These devices comprise of sensors in which antenna is a major component essential to detect any ailments, disorders or irregularities. A compact directional implantable microstrip patch antenna with novel fractal geometry is designed for wireless biotelemetry applications in the ISM band having an operational frequency of 2.4GHz. The dimensions of the antenna are 43.6x38.6mm using FR4 substrate having thickness of 1.6mm (dielectric constant – 4.3). The accuracy and results are determined by measuring various parameters such as the surface current, VSWR, output power and mainly the Specific Absorption Rate (SAR) and S11 parameter i.e. the total power reflected from the antenna. The proposed work on the antenna is simulated and tested for its compatibility and usage in implantable biomedical devices. The major advantage over conventional antennas includes lower specific absorption rate, lower S11 parameter, reduced attenuation and maximum radiation of power by improving radiation characteristics.

Keywords: Patch antenna, ISM band, Specific Absorption Rate (SAR), s11 parameter

PAPER ID: E156**WIRELESS POWER TRANSFER FOR ELECTRIC VEHICLE CHARGING**

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Abstract—Wireless power transfer is becoming a main concern to everyone staring from technical producer to the user. It becomes essential to create elective techniques to produce vitality. Wireless Power Transfer can be utilized to charge electronic versatile gadgets and Electrical Vehicle also in this paper, the methods of Wireless Power Transfer is talked about and how it's identified with the Wireless Power Transfer for electric vehicle is introduced. A unique Inductive force move technique is proposed. A dynamic Inductive power transfer method is proposed. A simulation and experimental implementation were conducted. The testing with different situations in terms of distance and alignment also performed where the wireless charging was achieved an efficiency of 90%.

Keywords: Wireless Power Transfer, Electrical Vehicle, wireless charging.



PAPER ID: E157

ENERGY EFFICIENT DATA ENCRYPTION ALGORITHM FOR WIRELESS NETWORKS

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Abstract - Data Security is primary concern for every communication system. There are many ways to provide security data but every technique has its own limitation. This paper analyses the energy efficient AES algorithm and S-box structure generated by PN sequence generator which improves avalanche effect by 60%, high throughput and less time delay. AES algorithm is developed using Xilinx ISE and MATLAB is used for PN sequence generation.

Keywords: Wireless networks, AES, DES, PN Sequence generator, Avalanche effect

PAPER ID: E158

MILK QUALITY PREDICTION USING MACHINE LEARNING WITH HARDWARE TESTING

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Abstract-Every problem has its own solution, and majority of the solutions comes from the growing technology. Within two decades the human world has evolved drastically with the innovative ideas and with their implementations. Starting from the normal household chores to the industrial manufacturing everything is automated making the everyday life so much easier. However, putting the right technology in the right way is the key to get the desired output. Machine learning is one such technology where the machine thinks and acts like a human with more precision/accuracy with the help of algorithms. This paper “TITLE” describes about a machine learning model which predicts the quality of the milk, which is a major concern in the dairy industry. The milk parameters such as pH, temperature, turbidity and colour were collected through sensors and fed into the model for analysing and predicting the milk’s condition. The pH of the good milk should be in between 6.5-6.9, the temperature should range from 35-39 degree Celsius, the turbidity is from 2.3-2.5 and the colour used here to distinguish is the white, pale yellow, and the brown. Based on these values, the milk is graded as low, medium and high. The sensors with the help of the microcontroller will fetch these data from the milk and the microcontroller which is deployed here is the Arduino UNO. The output will be displayed in the serial monitor of the Arduino’s IDE, the interfacing part of the model. The data obtained will be used to train the models and those models will gives us the analysed results about the quality of the milk. The algorithms used were Random Forest, KNN model, Logistic Regression and Naive Bayes Model, out of these Random Forest and KNN Algorithm were found to give the highest accuracy. This model is found to be less complicated and provides more accurate results when compared to the existing ones in the market. This paper shows the model which with the help of the adequate parameters and the fully automated method provides a more reliable, efficient and easy to be used handy device.

Keywords: Machine learning, sensors, Arduino, Milk Quality.



PAPER ID: E161

WIRELESS BLUETOOTH CONTROLLED ROBOT

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Abstract-Technology has advanced beyond our wildest dreams in recent years. It helps human in daily lives, and there's still a lot more to learn about it in the future. The Voice Control Robot may be useful in solving this issue. The interaction required for this robot to function autonomously is a voice command and manual control via a smartphone app. The goal of this project is to allow users to control the robot using voice commands from a distance. From the result, the robot can do the following tasks is built. It can move forward, backward, turn left and right and can stop when it senses an obstacle. The voice command commands are efficiently communicated through Bluetooth innovation, and the required actions are successfully carried out. When the size of this prototype project of a voice control robot is substantially expanded. It also reduces human efforts in places or situations when human intervention is problematic. As a result, it may be put to use in today's global industry. This robot is used for the function inauguration etc. Future plans for the voice control robot may be improved in a venture that can also be used for home security and military reasons, with instructions delivered to the robot using a wider range of signal and other characteristics electronic.

Keywords: *voice control robot, voice command, range, Bluetooth*

PAPER ID: E162

ASSISTIVE SYSTEM FOR BLIND PEOPLE

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Abstract-In today's modern hi-tech environment, the prerequisite required in the case of visually challenged people, who face the fundamental difficulty of social limitations, independent living is recognised. They endure unusual settings with no human assistance. Because visual information forms the basis of most actions, visually impaired people are disadvantaged because vital information about their surroundings is unavailable. In consideration of the recent advancements in accessible technology, it is possible to increase the assistance provided to individuals who are visually impaired. This project is being presented to assist individuals who are blind or visually disabled by using machine learning, which is used in object identification and is a quick and effective approach to anticipate an object's placement in a vision, which can be helpful in a



variety of circumstances. As for the core system Raspberry Pi which is the brain of the system and Google Pi is used which is used as friendly voice assistants as far distances in any direction with YouTube API support to entertain the visually impaired person personally.

Keywords— Impaired, Google Pi, Machine Learning, Image Recognition, Voice Assistance

PAPER ID: E163

A VIRTUAL REALITY BASED REHABILITATIVE THERAPY FOR AUTISM SPECTRUM DISORDER

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Abstract—Autism spectrum disorder (ASD) is a condition related to brain development that impacts how a person perceives and socializes with others, causing problems in social interaction and communication. Some people with ASD have a known causes, such as a genetic condition. Other causes are not yet known. Scientists believe there are multiple causes of ASD that act together to change the most common ways people develop. The symptoms include Delayed milestones, a socially awkward child, the child who has trouble with verbal and nonverbal communication. Virtual Reality (VR) is a computer-generated environment with scenes and objects that appear to be real, making the user feel they are immersed in their surroundings. This environment is perceived through a device known as a Virtual Reality headset or helmet. Its applications widen its wings to various fields such as Education, Medicine, Military, Aerospace, etc. To overcome the autism spectrum disorder, we propose a virtual environment based therapy to enhance the social skills, emotions and attention of the Autism child. The virtual environment includes various levels. First level focuses on attention grasping using color lights and sounds. Second Level focuses on increasing social interactions touching a ball, throwing it and bursting same color balloons, etc. Third Level focuses on decision making. The proposed virtual reality therapy produces positive results over repetition and it also notices at what stage the autism kids become panic, frustrated and enthusiastic.

Keywords: Autism Spectrum Disorder (ASD), Virtual Reality, 2-D Games, Cognitive Behavior, Educational.

PAPER ID: E164

DESIGN AND ANALYSIS OF MODIFIED SPLIT SOURCE INVERTER FOR PV SYSTEMS

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Abstract-Many DC–AC inverters have been developed recently for photovoltaic applications. Among them, the Split Source Inverter (SSI) is gaining popularity due to its single stage operation. This paper presents a modified unidirectional DC- AC configuration of the SSI that is different from its conventional configuration. It has a higher efficiency, lower Total Harmonic



Distortion (THD), less inductor current ripple and capacitor voltage ripple in comparison with the conventional configuration. The proposed inverter is compared with other voltage source inverters namely the impedance and quasi-impedance source inverters. Also, different control strategies have been implemented in order to achieve higher gain and reduce filter requirements. The simulation was carried out in MATLAB/Simulink environment.

Keywords: split-source inverter, pulse width modulation, impedance source inverter, voltage source inverter

PAPER ID: E167

SMART STICK FOR PHYSICALLY CHALLENGED PERSON BASED ON IOT

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Abstract-This paper presents a clever idea to help blind people without human need. It is well known that blind people carry sticks with them whenever they need help. Even if you have a walking stick, there is no guarantee that you will reach your destination safely and reliably. Also, when there are obstacles, people using regular handsticks may not notice. Because of this, blind people can get hurt if the obstacles are dangerous. To avoid this issue, smart sticks are the recommended solution. Here, an Detect obstacles ahead with ultrasonic sensors blinds. A voice message warns the visually impaired In case of failure Connected. This system uses Arduino Uno and GPS to track blind people. Smart Sticks are cheap, responsive, low power consumption and almost weightless. The entire control unit is mounted on the handstick. If there is an obstacle in front of a blind person, the voice generated by the speech engine will easily recognize the obstacle and send that information to the cloud using her IoT to help the blind person see the obstacle. of people with disabilities can be located.

Keywords: Ultrasonic Sensor, Raspberry Pi Controller, Buzzer

PAPER ID: E171

PLACEMENT MANAGEMENT SYSTEM

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Abstract—In any Institution, the maintenance of a database of companies for campus placement plays a vital role for effective placement. More time is needed and personal care should be taken for maintaining the data which is a challenging task. To retrieve the data related to a company such as mode of recruitment, payscale, job environment, etc, the placement coordinators has to share the information out of his/her experience and the available previous year data amidst their the placement respective staffs whom they are in their busy schedule, this project aims to develop a webpage to help the students in retrieving the company details in every category on their mobile phone in very less time. Moreover, the web page contains the package, company requirements, eligibility criteria, Number of students placed, and alumni details are displayed in every software and core company. Since this method does not necessitate a person's care for creating Databases of all companies visited in the particular year the time and manpower usage are significantly reduced. We use the HTML, CSS, JAVASCRIPT, ANGULAR, EXPRESS JS, NODE JS AND MongoDB as programming languages to create the placement template. It is very useful to the student.



Keywords: Node MCU ESP8266, Trimming grasses, Remote control in video-Enabled mode, Wi-Fi, Mobile app

PAPER ID: E172

A LIGHTWEIGHT VISUALIZATION AND DEEP LEARNING BASED MALWARE CLASSIFIER FOR IOT NETWORKS

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Abstract-The Internet of Things (IoT) is an expansion of the conventional Internet that enables a huge number of intelligent IoT devices to connect, share data, and communicate with one another. Malware is an umbrella term and refers to unwanted software with harmful activities. IoT networks and devices are susceptible to many of the same attacks that are now made against traditional computers linked to the internet since these environments lack the most fundamental security monitoring and prevention tools. This paper proposed a lightweight convolutional neural network (CNN)-based classifier approach to classify malware variants in an IoT environment. Experimental findings show that the proposed method has a binary (benign and malware) classification accuracy of 97.03% on the IoT malware dataset.

Keywords: CNN; Color malware images; DL; Malware classification; Malware variants; IoT malware.

PAPER ID: E173

FETAL MOVEMENT MONITORING SYSTEM FOR PREGNANT WOMEN IN RURAL AREAS

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Abstract:

There are
many
pregnant
women

in our world and fetal movement counting is one of the most important indices reflecting the health of the fetus. In the hospital, ultrasound method serves as gold standard but only be used within a short period of time because of the potential of tissue damage, so that the ensemble method was found to have the best performance compared to ultrasound method. The proper routine check-up was needed like starting from first week followed by 26 weeks, the person needs to visit doctor 4 weeks once, then for 26 to 32 weeks, 3 weeks once then for 32 to 36 weeks, 2 weeks once and after that weekly once so to overcome this travelling situation this project was suitable one. But the Maternal mortality rate is high because of no proper routine check-ups. In order to overcome these issues real time monitoring of the foetus is necessary, it can be obtained with the help of this device which consist of sensors like temperature sensor, pulse rate sensor, accelerometer sensor, sweat sensor and force sensor e.t.c. The movement of the foetus along with the symptoms of labor pain are measured here. This study aims to develop a wearable device for out-of-hospital monitoring of fetal movement with acceptable accuracy. In this work, a wearable device with accelerometers was developed for accurate and continuous fetal movement monitoring. In this project sensor, microcontroller, LCD display and buzzer was used to monitor the fetal movement, Gyro sensors was used here for gathering data, microcontroller which decodes the data and send it to the LCD display and finally buzzer was used here to alert the abnormal condition of the fetus.

Keywords: fetal movement detection, accelerometer, wearable device.



PAPER ID: E175

PREDICTION OF HOUSE PRICES USING ENSEMBLE REGRESSION TECHNIQUES

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Abstract—Housing prices fluctuate daily and are frequently inflated rather than based on assessments, which makes the housing market society's least transparent sector. Homebuyers use budgets and market strategies to find a new home. Nevertheless, the main problem with the existing method is that it does not predict future market trends, so it leads to a price rise. It is essential for the researcher to propose housing prices using real-world factors in the research. For clients to accurately predict a house's price, they need to carefully consider the variables associated with the house, which is extremely challenging. To solve this problem, machine learning (ML) seems to be a viable option. In order to solve the issues, ML models such as Linear Regression (LR), Support Vector Machine (SVM), Random Forest (RF), and ensembles (LR, SVM, RF, K-Nearest Neighbor (KNN)) are used. Error metrics such as Mean Square Error, Root Mean Square Error, and Mean Absolute Error (MAE) are used to determine the best model. It was found that the combined Linear Regression (LR) and Random Forest (RF) model produces the least amount of error in this study. The error value should be as low as possible for a good regression model. This will allow people to compute a reasonable price for a house based on its most important attributes without having to depend on a broker to do this.

Keywords: House Price, Machine learning, Regression Model, Linear Regression, Random Forest

PAPER ID: E176

CRYPTOGRAPHY AND STEGANOGRAPHY FOR SECURE DATA TRANSMISSION IN MEDICAL APPLICATION

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Abstract—Healthcare data is being managed using high-tech tools and web portals, resulting in massive data acquisition containing highly sensitive information as the healthcare business evolves. Data transmission must be secure to prevent hackers from stealing data. Secure data transmission is the goal of this study using quantum image cryptography. In clandestine transmissions, image steganography is also commonly used. Due to the steganography algorithm, the message cannot be detected which makes the inability of a third party to hack or change the data before it reaches its intended



recipient. LSB steganography and chaos algorithms are used to encrypt images and protect medical data. Image processing in cryptography can be improved using quantum images.

Keywords: Steganography, data transmission, cryptography, quantum imaging.

PAPER ID: E177**COMPARISON OF SUPERVISED ALGORITHM FOR FORECASTING CREDIT SYSTEM IN BANKING SECTOR**¹*S. Pousia ***Assistant Professor/ECE,
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Abstract—In today's society, borrowing money from financial institutions is becoming more and more typical. Every day, a large number of people seek loans for various reasons. In order to gather the most important information, this research gathers credit data from different sources and utilizes a variety of machine learning models. ML has revolutionized data analysis over the past ten years and can be used to determine whether a loan application should be accepted or rejected. Business owners can use this model to determine whether to approve or reject a customer's loan application. Bank supervisors and other professionals rely heavily on reliable information and may benefit greatly from this technological advancement. Machine learning offers a novel way to develop analytical models that learn from data and predict the future. The use of machine learning in the banking industry can improve data analysis and judgment, but there are indications that it can also enhance the importance and usefulness of big data and predictive analytics. Whenever banks or other financial institutions extend credit or make loans to consumers, they may have to consider several risk factors. In this study, a number of machine learning algorithms are applied to real bank loan data to determine which algorithm is the best for learning bank loan data. There are several machine learning algorithms in the algorithm, including Logistic Regression, Gaussian NB, Decision Tree, Random Forest, Support Vector Machine, Gradient Boosting, Linear Discriminant Analysis, and K-Nearest Neighbour. Approximately 80% of the predictions made by the algorithm were correct.

Keywords: Machine learning model, Banking supervisor, Financial institution, Data Analysis



PAPER ID: E178

DESIGN AND DEVELOPMENT OF AN INTELLIGENT ANIMAL REPELLING SYSTEM FOR CROPPROTECTION BASED ON EMBEDDED EDGE-AI

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Abstract—Agribusiness robotization has been on the ascent using among others, Deep Neural Networks (DNN) and IOT for the turn of events and sending of many controlling, endlessly checking applications to a great grained degree. In this quickly developing situation, replicating the association with the components out of ways to the rural environmental factors, comprising vegetation and fauna, is applicable to open trouble. One of the statute issues of current ranchers is cautious plants from wild animals' attacks. There are unmistakable customary cycles to resolve this issue which might be deadly (e.g., shooting, catching) and non-deadly (e.g., scarecrow, synthetic anti-agents, natural substances, cross- section, or electric-fueled walls). In this endeavour to expand a gadget that joins AI PC innovative and judicious the use of DCNN for identifying and spotting creature species and explicit ultrasound outflow (i.e., outstanding for each species) for repulsing them. In addition, for each HW/SW platform, the experimental study provides a cost/performance analysis, as well as measurements of the average and peak CPU temperature. Best practices are also discussed and lastly, this project discusses how the combined technology used can help farmers and agronomists in their decision making and management process.

Keywords: Ungulates, Internet of Things, smart agriculture, edge computing, real-time embedded systems, object detection.

PAPER ID: E179

BONE FRACTURE DETECTION AND CLASSIFICATION USING ALEXNET ALGORITHM IN DEEP LEARNING APPROACH

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Abstract—Using a straightforward and useful setup, this research investigates the viability of microwave imaging (MWI) for the diagnosis of fractures in superficial bones like the tibia. It could be used by first responders in emergency situations where X-Rays are not available for quick preliminary diagnosis. It might be useful in situations when X-rays are not advised, including with youngsters or pregnant women who are carrying long. The synthetic aperture radar approach served as the method's inspiration. The bone is linearly scanned from 8.3 to 11.1 GHz and the dispersed fields are collected using a single Vivaldi antenna. Without the requirement for cumbersome impedance-matching immersion liquids, the device may work in air. An procedure known as Kirchhoff migration is used to recreate the image. Skin and background artifacts are eliminated using a Singular Value Decomposition (SVD) technique. Using a multilayer phantom and an ex-vivo animal bone, a series of full-wave simulations and experiments were carried out to evaluate this method. Findings reveal that even when the bone is covered by 2 mm of skin, the system can find and locate bone transverse fractures that are as small as 1 mm wide and 13 mm deep.

Keywords: Kirchhoff migration, X-rays, bone, Singular Value Decomposition (SVD).



PAPER ID: E182

PLC BASED AUTOMATIC SORTING SYSTEM USING FACTORY IO INTERFACED WITH PHOENIX PLC

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Abstract—Industrial automation mainly focuses on developing automations having low cost, low maintenance and to make systems user friendly as possible. Methods of sorting play an important role in packing section if any process industries to improve the production efficiency. Manual method needs man power with more labor cost and is harder to find young people committed to the type of sorting job. A 3D simulation for automatic sorting system is developed using PLC Next Engineer with all essential components. The logic related to the sorting system is developed using functional block in PLC Next with which it is demonstrated in 3D simulation. This system provides 100% accuracy in sorting with the given time interval. This system identifies very small materials which are difficult for human to pick. In this system the products are sorted based on color, shape , and height. This can be further developed by interfacing the simulation with real time PLC with the help of ladder logic and we can develop this into a real time working model with the help of PLC and hardware.

Keywords: Phoenix contact PLC, PLC Next Engineer, Factory IO, Vision sensor.

PAPER ID: E183

AN EFFICIENT EDGE DETECTION METHOD BASED ON IMAGE PROCESSING USING APPROXIMATE 4-2 COMPRESSOR

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Abstract— In this research, we describe a brand-new approximate computing method that can be used to implement the multiply-accumulate (MAC) processing, which is energy efficient. We employ various approximate multipliers in an interleaved manner to correct errors in the opposite direction during accumulate operations, in contrast to earlier efforts that suffer from the error accumulation restricting the approximate range. We first build the approximation 4-2 compressors that produce errors in the opposite direction while minimizing the computational expenses for the balanced error accumulation. Positive and negative multipliers are then meticulously built based on the probabilistic analysis to produce a comparable error distance. The proposed MAC processing provides the energy efficient computing scenario by expanding the range of approximate portions, according to simulation results on various real-world applications. For instance, even when compared to cutting-edge methods, the suggested interleaving scheme reduces the latest CNN accelerator's core-level energy consumption by more than 35% without sacrificing identification accuracy.

Keywords: Approximate computing, convolutional neural network, image processing, low-power circuit design, multiplier.



PAPER ID: E184

AN IOT BASED WOUND DIAGNOSIS USING THINKSPEAK PLATFORM REPORTED ON WHATSAPP

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Abstract—The Project is titled as "Wound Diagnosis System using ThingSpeak". These Skin wounds either minor or chronic may heal up with different time durations. The time duration of healing could not be easily predicted. The wound care domain requires efficient techniques and sensing systems for the identification of characteristics of wound. The design of wound care solution based on a IOT-based sensing. It is an advanced solution for monitoring the wound conditions by the identification of wound biomarkers by using biosensors and design a Thinkspeak system to predict wound healing rate using MatLab.

Keywords: Wound care domain, IOT-based sensing, wound biomarkers, thinkspeak

PAPER ID: E185

SPATIOTEMPORAL ON MICRO GRIDS ANALYSIS BASED FLEXIBLE MACHINE LEARNING BASED CYBERATTACK DETECTION

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Abstract—Since the Internet has grown, cyberattacks have advanced quickly, and the state of cyber security is not promising. With a brief introduction of each Machine Learning and Deep Learning (ML/DL) approach, an overview of how ML and DL are used to network analysis and intrusion detection is provided. The papers that represented each technique were indexed, looked at, and summarized based on the temporal or thermal connections. They talk about the difficulties in using ML/DL to improve cyber security, the value of data in ML/DL techniques, and some of the most popular network datasets, and offer recommendations for future study. The KDD data set is a well-known benchmark in the research of Intrusion Detection Techniques (IDM). Even though significant work is done into enhancing intrusion detection methods, data utilized to develop and evaluate the detection model should also be the subject of research. This is because improved data quality could make offline intrusion detection easier. The four categories of Basic, Content, Traffic, and Host are assessed in this study in relation to the KDD data set. The MODIFIED RANDOM FOREST (MRF) allows for the categorization of all data properties. The study focuses on the two well-known assessment metrics for Intrusion Detection Systems (IDS), Detection Rate (DR) and False Alarm Rate (FAR). This empirical study shows how the four different types of features affect DR and FAR, which may increase the data set's usefulness in achieving the highest DR with the lowest FAR. According to the experimental findings, the suggested strategy effectively achieves 91% classification accuracy with just 12 chosen features, 97% classification accuracy with 36 characteristics, and 98% classification accuracy with all 42 training features.

Keywords: Microgrids, Decision Tree, Random forest.



PAPER ID: E186

MARINE WEATHER PREDICTION USING MACHINE LEARNING

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Abstract—Assessment of marine weather risk is essential for guaranteeing the safety of ships and personnel. The goal of this work is to forecast the chance of dangerous weather conditions, such as storms, strong winds, and rough waves. A potential statistical technique for assessing the danger from maritime weather has recently been identified as logistic lasso regression. A dataset of historical maritime weather data, comprising details on several weather variables and whether or not hazardous weather conditions occurred on each day, is needed to utilise logistic lasso regression for marine weather risk assessment. The dataset is split into training and testing sets, and the accuracy of the logistic lasso regression model is assessed by training it on the training set and testing it on the testing set. A model may be trained to predict the likelihood of hazardous weather based on the present maritime weather conditions. The possibility of hazardous weather conditions developing may be forecasted using the present marine weather variables, which can be used to assess the risk and make choices about vessel operations and crew safety. The quality and amount of the data used to train the model, as well as other elements that may affect maritime weather patterns, have an impact on the accuracy of logistic lasso regression, which has shown promise in the evaluation of marine weather risk. As a result, it's crucial to take into account various statistical techniques and variables when evaluating the danger of maritime weather.

Keywords: Marine Weather, Machine Learning, Lasso Regression, Weather Forecasting

PAPER ID: E187

A SECURE GROUP DATA SHARING IN CLOUD WITH DATA INTEGRITY VERIFICATION USING THIRD PARTY AUTHENTICATION

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Abstract-The Cloud computing provides high performance, accessibility and low cost for data storing and sharing , provides a better consumption of resources .In cloud computing , cloud service providers compromise an abstraction of infinite storage space for clients to mass data. It can help clients diminish their financial overhead of data managements by drifting the managements system into cloud servers. However , security concerns develop the main constraint as we now outsource the storage of data ,which is possibly sensitive to cloud providers. To preserve data privacy , a mutual approach is to encrypt data files before the clients upload the encrypted data into the cloud storage services can help the clients reduce their monetary and maintenance overhead of data managements . It is complex to design a secure data sharing scheme, especially for dynamic groups in the cloud. To overcome the problem ,here propose a secure data sharing scheme for frequently changed groups. In this work, an AES based encryption scheme is proposed which incorporates the cryptographic approaches with Group Data Sharing and also an anonymous control scheme to address the privacy in data as well as the



user identity privacy in current access control schemes . File integrity using TPA verification key and send results to the owner.

Keywords: Cloud Computing, data privacy, data management

PAPER ID: E188

AN EFFICIENT ANALYSIS OF SKIN CANCER DETECTION BY USING CONVOLUTIONAL NEURAL NETWORKS

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*Abstract-*Skin cancer is a type of cancer that grows in the skin, which can beget damage to the girdle, disability, and indeed death. Skin cancer happens when skin cells grow and multiply in an unbridled, unorderly way. Typically, new skin cells form when cells grow old and die or when they become damaged. When this process doesn't work as it should, a rapid-fire growth of cells (some of which may be abnormal cells) results. In Indonesia, skin cancer is the third-leading cause of cancer cases after cervical and bone cancer. The delicacy of opinion and the early proper treatment can minimize and control the dangerous goods of skin cancer. Melanoma isn't as common as rudimentary cell or scaled cell lymphomas but is the most dangerous form of skin cancer. However, tubercles are more likely to spread to organs beyond the skin, making them delicate to treat and potentially life-limiting if left undressed or caught at a late stage. Fortunately, if skin cancer is linked and treated beforehand, utmost are cured. This is why it's important to take many safeguards and to talk with your healthcare provider if you suspect you have any signs of skin cancer. Due to the analogous shape of the lesion between skin cancer and benign excrescence lesions, croakers consuming much further time in diagnosing these lesions. The system developed in this study could identify skin cancer and benign excrescence lesions automatically using the Convolutional Neural Network (CNN). The proposed model consists of three retired layers with an affair channel of 16, 32, and 64 for each sub caste. Independently, data collected from the ISIC dataset is classified into two classes: non-melanoma and carcinoma. The results attained outperformed the performance of the skin cancer bracket system. Melanoma is a type of skin cancer, which isn't that common like rudimentary cell and scaled melanoma, but it has dangerous counteraccusations since it has the tendency to resettle to other corridor of body. So, if it's detected at an early stage also we can fluently treat; else it becomes fatal. Numerous computer-backed individual styles using dermoscopy images have been proposed to help clinicians and dermatologists.

Keywords: Convolutional Neural Network, Grey Scale Con- version, VGG19, Densenet, Pooling

PAPER ID: E193

COST EFFECTIVE PROFIT MAXIMIZATION AND WORKLOAD CONSOLIDATION DATACENTER IN CLOUD

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*Abstract—*Pay-as-you-go adaptive delegation of processing control is possible with distributed computing. As a result, clients can effectively upgrade their clientele and lower their overall operating costs. enabling adjustable scaling and highspeed access. Key evaluation criteria for cloud computing companies include providing lower pricing and accommodating supplementary services. As long as the manager's long-term objectives can be met, this business also produces a consistent flow of income. We offer a novel strategy approval approach to address these issues while taking into account the stock's



vulnerability and the requirement for education, with the goal of boosting cloud provider revenue. Our analysis shows that the strategy-based approach continues to perform noticeably better than the top early climbers in its class.

Keywords: Pay-as-you-go, Trending Tweets, novel strategy approval approach, Enhanced Dynamic Pricing Policy.

PAPER ID: E194**AUTOMATION IN JIGGER DYEING MACHINE***Sasireka M**Department of EIE**Kongu Engineering College**Erode, Tamil Nadu, India.**sasireka.eie@kongu.edu**Rupasri M**Department of EIE**Kongu Engineering College**Erode, Tamil Nadu, India**rupasrim.19eie@kongu.edu**Sanjana G**Department of EIE**Kongu Engineering College**Erode, Tamil Nadu, India**sanjanag.19eie@kongu.edu**Sanjai S**Department of EIE**Kongu Engineering College**Erode, Tamil Nadu, India**sanja.s.19eie@kongu.edu*

Abstract-The jigg or jigger dyeing machine is among the first dyeing equipment used in fabric dying procedures. Jigger machines have the ability to colour woven textiles up to boiling temperatures without creasing. Jigs are more suited for dyeing woven fibres than knit fibres because they exert a large amount of longitudinal pressure on the fabric. Because the fabric is handled in an open-range setting, jigs are perfect for materials that wrinkle when coloured in a rope form jigg or jigger dyeing machine. In jigger machines used for dyeing, the open-range cloth travels from one roller through the dye bath at the bottom of the machine and also onto a controlled take-up roller on the opposite side of the machine. Once the entire piece of cloth has been through the bath, the direction is changed. Every passage comes to an end. The suggested technique is that the open-width cloth taken from the front roller passes through the guiding roller in the dyeing bath during Jig dyeing at a certain temperature. After being flattened, coiled to the back roll, and passed through the spreading frame, the cloth is then submerged in the dye solution. The first roll dyeing is shown there. The two rollers begin to revolve in the opposite way as it nears completion. The cloth then undergoes a second dyeing in the dye bath. Alternate between the two methods up until the process's permitted number of dyeing passes has been achieved. Jigger dyeing reduces the colour difference between the coloured fabric head and tail by allowing the dye to progressively penetrate the interior of the fibre through mutual extrusion between the textile layers. By moving the fabric back and forth, the Jig Dyeing machine functions. Through the use of a dye bath, which is situated at the machine's base, this is accomplished from roller to roller. Workers in an industry might manually change the direction of cloth movement after the second roller was fully loaded. Jig dyeing is a rotational technique, and the length of the procedure varies depending on how many passes or ends of the cloth are passed from roller to roller in the dye water.

Keywords: dyeing machine, automation, fabric, roller, microcontroller, motor driver.

PAPER ID: E195**DESIGN OF ARRAYMULTIPLIER USING6T FULL ADDER***Lalithamani V, Assistant Professor**Hiruthik Vishnu M, Aarthi G, Jaya Sathya k**KIT-kalaignarkarunanidhi Institute of Technology, Coimbatore-641402, India*

Abstract—The chip's complexity is increasing as advances in VLSI technology, enabling for the integration of larger and larger transistors on a single chip. Because of chip has a greater density, the power drained away in it or the heat generated rises, resulting in low-power CMOS VLSI designs. In recent years, low power, fast speed, and small space have become critical design parameters for modern VLSI circuits. Multiplayer is very important in ALU. Multiplayers are a fundamental functional unit in the renovation of DSP architectures.

Keywords: Chip, VLSI, ALU, Multiplayer.



PAPER ID: E197

AUTOMATIC BOTTLE FILLING SYSTEM USING PLC

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Abstract-In this project, a PLC controller, which also acts as the system's brain, controls the filling of the bottle. A stepper motor has been chosen for rotating motion because of its improved performance and simplicity of use. A sensor has been utilized to determine the bottle's location. Because of employing fewer systems overall in our project, the overall cost has decreased somewhat. The PLC has been programmed using ladder logic, the most popular and widely acknowledged language for PLC programming. This system's PLC, a Siemens S7-1200, increases the system's flexibility and ease of use. Designing, building, and maintaining a "automatic bottle filling system with PLC" is the aim of our project. Low power consumption, low operating expenses, low maintenance requirements, precision, and other benefits come with this work. This project is based on industrial automation, a broad application utilised in a variety of industries, including the processing of milk, chemicals, food, and mineral water, among many others. A prototype was made to show off the project. Filling is a task that involves mechanical assistance and is used in many different sectors.

Keywords: *plc, stepper motor, ladder logic, siemens s7-1200, automatic bottle filling milk processing.*

PAPER ID: E199

MULTILEVEL AUTHENTICATION SYSTEM BASED ON PERIOCULAR FEATURES USING DEEP LEARNING ALGORITHM

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*Abstract-*Biometric is an automated process used to recognize humans by measuring their behavioral and physiological characteristics. Biometric systems are generally used either for verification. Proposed system provides a comprehensive implementation of periocular biometrics and a deep insight of various aspects such as utility of periocular region. In this project face and eye points are captured using Grassmann algorithm and Gabor filter for eye features extraction. Each trait is analyzed separately and given its own score. The results are combined using deep learning algorithm to provide a single decision in real time environments.

Keywords: *Biometric, face and eye, Gabor filter*

PAPER ID: E200

INTEGRATED VEHICLE INFORMATION STORAGE DEVICE WITH VIDEO RECOVERY USING ESP32 CAM

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*Abstract-*This paper discusses a method of storing accident data for a vehicle, in which image data taken by a camera during driving is stored in real time. Recently, to acquire data for determining circumstances at the time of a vehicle accident and a fault between parties, research and development on a vehicle black box for recording driving data such as vehicle speed have been conducted actively. It records external circumstances at the time of an accident as image data by using a camera mounted in the vehicle and uses pre- and post-accident external image data as well as driving data, thereby finding out cause of the accident. The accident of the vehicle means an unexpected event which may cause damage to a body of the vehicle or of a passenger. In this proposed method, ARDUINO UNO microcontroller is used to interface with the sensors and to the communication devices. The crash sensor, temperature sensor and gas sensor are used to get the major three road accident information. The SD card module and IOT module are used to store the information locally and globally. The I2C LCD module is used to connect the LCD using ONEWIRE protocol. The LCD is used to update the latest sensor and communication information in the LCD. The GPS device is used to get the information of the location of the vehicle. The GSM is used to send the accident information to the police or respective person care takers.

Keywords: *LCD, GSM, GPS, ARDUINO UNO, SD card Module.*



PAPER ID: E201

IOT BASED ANIMAL HEALTH MONITORING SYSTEM

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Abstract-Real-world items are becoming smarter gadgets thanks to the Internet of Things (IoT), an emerging paradigm. Healthcare, smart grid, and agriculture are just a few of the application domains that the Internet of Things may be used in. This domain has begun to transform the agriculture sector by offering innovative methods for managing greenhouses, monitoring animals, and precision farming. By classifying and integrating previous research in this sector, this article seeks to give a thorough study on the use of IoT in the livestock industry. In order to do this, a thorough analysis of the platforms, topologies, and IoT network architecture used for livestock management has been presented. A number of communication standards and links between IoT- based livestock systems and pertinent technologies have also been investigated. Moreover, a variety of IoT-based livestock monitoring, Applications for monitoring, regulating, and following have been discussed. In addition, it analyses various security concerns in the IoT-based cattle industry and created a collaborative security model to identify and reduce security risks. Finally, relevant open research issues and potential future research paths in the field of IoT-based livestock management have been highlighted.

Keywords: *IoT, livestock, animal monitoring, cloud computing, animal tracking, poultry management, automatic electronic collection.*

PAPER ID: E203

TRAFFI SIGN RECOGNITION WITH ALERT SYSTEM USING CONVOLUTIONAL NEURAL NETWORK

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*Abstract-*The Automatic detection and recognition of traffic signs is critical, and it could be utilized for user assistance to decrease accidents, as well as in driverless cars in the future. Neural networks can be used to make a traffic sign recognition system capable of recognizing and understanding the different traffic signs and help the vehicles. An Autonomous Traffic and Road Sign (ATRS) detection and identification system is developed in this project using a Deep Convolutional Neural Network (CNN). The suggested system detects and recognizes traffic sign images in real time.

Keywords: Automatic detection, Autonomous Traffic and Road Sign, Deep Convolutional Neural Network (CNN).

PAPER ID: E204**DESIGN OF SMART SHOE FOR WOMEN SAFETY***Rajasekar K 1**, Abishaya S 2**, Hareni M 2**, Kavya P 2**1 Assistant Professor,**2 Student**Department Of Electronics And Communication Engineering**K.S. Rangasamy College Of Technology (Autonomous), Tiruchengode, Namakkal.*

*Abstract-*As women's safety continues to be a significant concern in society, we have devised a solution in the form of a smart shoe. Our shoe is intended to provide an extra layer of protection for women, especially when they are walking alone or in a vulnerable situation. This project aims to address the pressing issue of women's safety by proposing a smart shoe with an embedded emergency alert system. The shoe is equipped with advanced sensors and communication technologies such as GPS, GSM, accelerometer, and an Atmega328 microcontroller. The user can trigger an alert in case of an emergency by pressing the emergency button, which activates the shocking unit and sends an alert to the designated emergency contact with the user's location information. The shoe is powered by a lithium-ion battery and has a power supply unit for charging. The Design of Smart Shoe for Women Safety is designed to be comfortable, stylish, and easy to use, providing a comprehensive solution for women's safety. It has the potential to positively impact the lives of women and promote their safety and well-being in today's world where women's safety is a major concern.

Keywords: Women's Safety, Smart shoe, GPS, GSM, Accelerometer Sensor, Atmega328 Microcontroller, Shocking unit, Lithium-ion Battery, Communication technologies, Location tracking, Emergency Press Button, Power Supply, Charging.

PAPER ID: E205**A STUDY OF DIABETIC RETINOPATHY USING EXUDATES : A SURVEY***Mrs. C.Selvarathi,**Assistant Professor,**Department of Computer Science,**M.Kumarasamy College of Engineering,**Mrs. C.Ushapriya**Assistant Professor,**Karur.**Mail: selvarathic.cse@mkce.ac.in*

*Abstract-*From the observation of past 10 year's medical report, about 30% of patients with diabetic acquired great hazard of eye disease. Severe stage of diabetics may causes damage in retina blood vessels. The affected blood vessel further may produces loss of blood and other lymphatic. The swelling on retinal tissue leads to Diabetic Retinopathy (DR). Serious stage of DR leads to blindness. Early detection is essential for the prevention of blindness. Automatic detection is carried by various techniques such as pre-processing, feature extraction, exudates segmentation and classification of



exudates are performed using different approaches. This paper describe various method and algorithm implemented for the early detection of Diabetic Retinopathy (DR).

Keywords: *Diabetic Retinopathy (DR), Hard exudates, Fundus Images, Support Vector Machine (SVM).*

PAPER ID: E207

CLUSTERING TECHNIQUE BASED ON ARSH-FATI FOR DATA TRANSMISSION IN WSN-IOT HEALTHCARE SYSTEM

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Abstract-Nowadays, people heavily uses the Internet for daily basis information updates, where smart devices are connected for information transforming and forms the Internet of Things (IoT) network. In many areas such as agriculture, healthcare, education, transport, etc., a new opportunities are developed for IoT due to its wide expansion of wireless technologies.In this research study, healthcare application is mainly focused by the researcher to minimize the costs of hospital visit, human resource, healthcare provider and insurance, which is offered by the IoT and provides the better quality for healthcare sector. But, increased used of IoT sensors for medical data transmission in e-health applications raised a concern of energy efficiency of battery-powered sensors. This is one of the major barrier to extending the life of the network. Therefore, a new technique called ARSH-FATI based group selection process is proposed to extend network life for effectively solve the current problem. In order to increase network lifetime and achieve better trade- off between performances, the proposed ARSH-FATI uses the exploration and exploitation of search process, while running the algorithm. During the Cluster Head (CH) selection, workload, residual energy and parameters of communication distances are considered by the ARSH-FATI algorithm. The simulations are carried out in Python software and the results showed that the proposed algorithm achieved 86% of Packet Delivery Ratio (PDR), where the existing Particle Swarm Optimization (PSO) achieved 88% of PDR for the sensor node 400.

Keywords: *Medical Data Transmission; Healthcare; Energy Efficiency; Network Lifetime; Cluster Head Selection; ARSH-FATI.*

PAPER ID: E209

ANALYSIS OF EEG SIGNAL USING PRINCIPAL COMPONENT ANALYSIS (PCA) TO REMOVE ARTIFACTS

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Abstract-When conducting an analysis of EEG activity, one of the most common challenges arises in determining how to differentiate between genuine EEG activity and that which has been produced by a number of different external influences. The results of the analysis of the EEG data might be impacted as a result of these anomalies. This study suggests an adaptive principal component analysis-based recursive least squares algorithm for extraction and wavelet denoising, as well as a bandpass filter for pre-processing, in order to get rid of any anomalies that may have occurred. The goal of the algorithm is to derive from a group of random variables with zero means as few decorrelated linear combinations as feasible while maintaining as much of the information contained in the initial variables as is practicable. The EEG data that were collected from eight different subjects served as the basis for the evaluation of the proposed technique. According to the findings of the experiment, the technique that was suggested is capable of successfully removing artifacts from all of the subjects.

Keywords: *Electroencephalography (EEG), Principal Component Analysis (PCA), recursive least squares algorithm, Wavelet Denoising, Python.*

PAPER ID: E210**EEG BASED ON POST-TRAUMATIC STRESS DISORDER DEDUCTION USING MACHINE LEARNING**

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Abstract-Electroencephalogram (EEG) is a test to record all activity in the brain by placing electrodes on the scalp. There are five major frequency bands in EEG delta, theta, alpha, beta and gamma. The main purpose of this project is to study EEG classification for accurate diagnosis of post-traumatic stress disorder, using machine learning to focus on the effects of medication. We are using OPENBCI for this project to read the subject's brainwaves (EEG) in real-time medical data. Machine learning (ML) approaches can be used to enhance the classification of PTSD, forecast outcomes, or choose the best course of action for everyone. Machine learning techniques can be used to analyze large EEG datasets. Receive data from projects to validate against real-time medical records, make more complete fact-based decisions, and better consider treatment contexts to lower readmission rates, reduce errors, and reduce risk. Groups can be better identified, which is essential for providing quality patient care. This project describes the effects of drugs on the development of EEG-based machine learning. This also enables his PTSD diagnosis at the initial screening stage via the Python programming language.

Keywords: *Electroencephalography (EEG), Post-Traumatic Stress Disorder (PTSD), Machine learning (ML), Python.*



PAPER ID: E211

ELECTROENCEPHALOGRAM (EEG) BASED ON BIPOLAR DISORDER DEDUCTION USING MACHINE LEARING

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Abstract-The usage of portable electroencephalogram (EEG) equipment for clinical and non-clinical purposes has increased recently. Brain wave anomalies are discovered through EEGs. The scalp will be covered in electrodes, which are tiny metal discs with flimsy wires. The electrical charges in the brain are detected by electrodes. A mental condition that affects the brain called bipolar disorder affects over 45 million people worldwide. It causes significant shifts in a person's level of energy, behaviour, and emotional condition which is also known as manic depression. In contrast to what is found in a healthy person, research has demonstrated that bipolar disorder is linked to considerable volumetric changes in neuronal networks in the brain. Bipolar disorder has led to morbidity and death around the globe and is the tenth most frequent cause of frailty in young people. People with bipolar disorder have a 9 –17 year shorter life expectancy than healthy individuals. Although bipolar disorder is a common mental condition, it can be mistaken for depressive disorder, which makes it challenging to treat affected patients. About 60% of bipolar disorder patients receive treatment for depression. Yet, machine learning offers sophisticated abilities and methods for an improved bipolar disorder diagnosis. One of the machine learning algorithms will be applied in this project to conclude the best possible model for diagnosing bipolar disorder. The purpose of this paper is to find a correct classification of bipolar disorder using EEG and machine learning.

Keywords: *Electroencephalogram (EEG), bipolar disorder, machine learning.*

PAPER ID: E212

WOMEN SAFETY SYSTEM USING RASPBERRY PI

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Abstract- We frequently hear about rape, eve-teasing, and molestation cases in public areas of society as crimes against women have been sharply increasing. Building a safety equipment that may function as a rescuer and shield against injury



in the event of a danger is absolutely vital, especially for women, as women's security is currently the most critical worry. A smart device for women's protection that automates the emergency alarm system by using pressure, pulse-rate, and temperature sensors to detect a potential atrocity automatically via outlier detection is proposed in this research. Without the need for a woman to interact with the system during urgent situations, it identifies and transmits notifications for loved ones with their coordinates. It automatically alerts the relatives and the neighbourhood police station of an emergency.

Keywords—IOT, GPS, GSM, Women safety.

PAPER ID: E213

DESIGN OF IOT BASED SAFETY GADGET FOR SPECIAL CHILD SAFETY MONITORING SYSTEM

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*Abstract-*The project's primary goal is to give the child security. As a result of their jobs, parents today find it difficult to supervise and maintain tabs on all of their children's activities. The proposed system will be very helpful for parents in achieving this. The term "Internet of Things" describes a collection of gadgets and systems that are permanently connected to the internet using real-world sensors and actuators. The primary driving force behind this wearable technology is the current, growing demand for safety for both young infants and special needs youngsters. The majority of wearable technology currently on the market focuses on informing the parent through Wi-Fi and Bluetooth of the child's whereabouts, activities, health, etc. The Internet of Things (IoT), Arduino Uno, and SMS sending and receiving capabilities made available by the GSM module through the GSM network will serve as the project's operating systems. Android parental software is created to control and track the device at any time. The GPS module will be used to determine the tiny child's and special child's current position. Wearable technology that notifies parents when a child's safety or health is compromised and monitors their temperature and heart rate. Therefore, this tactic is seen as the children sending their parents or guardians an SMS from their wearable device. This allows parents to monitor what is happening from a distance and respond if something is wrong.

Keywords: *Internet Of things (IOT), Arduino, Heart beat Sensor, Temperature sensor, Panic switch.*

PAPER ID: E215

AUTOMATED HYDROPONIC SYSTEM FOR SMART INDOOR PLANT GROWTH

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Abstract-The implementation of Automation System in Hydroponics Agriculture, it would increase the overall efficiency of the system. This System would contain sensors that detect many factors like Temperature, pH, Humidity would take the necessary counter measures to make the system more stabled throughout the time.In Hydroponics, water plays the key role by providing nutrients, hydration and oxidation.The nutrient water which will be used will have the required amount of nitrates, zinc, iron, micronutrients and macronutrients in a specific level. As these nutrients reaches roots directly, the time required for processes inside the plant is reduced.Thus, the main advantages of this system would be reducing the water.

Keywords— *Hydroponic, Automation, pH, Temperature, Arduino uno.*

PAPER ID: E217

BUS TRACKING SYSTEM FOR ORGANIZATIONS USING ARDUINO UNO

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Abstract-The need for efficient private transportation system such as buses is rapidly. The parents and students need to know the location of the bus to particular station and then plan their journey from their home. In the existing scenario, there is no private messaging and alert system are implanted in bus hence this leads to difficult in tracking the bus. The proposed system consists of RFID which helps to identify the students identity and the IR sensor is used to detect the IN and OUT of the student from the bus. The GSM provides the SMS to the parents. This proposed system helps to easily track the students inside the bus.

Keywords— *RFID, Parent, IR Sensor, GSM*

PAPER ID: E218

IOT BASED WEARABLE CHILD CARE SYSTEM

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Abstract-In recent years, attacks on children have been rising, with victims finding themselves in dangerous situations with limited solutions for connecting with their families. To address this growing issue, this project proposes the development of a smart wearable gadget for kids that leverages modern technologies to guarantee their safety. The wearable will be equipped with an ESP8266, a temperature sensor, and an accelerometer sensor. The app will allow the



child to activate an emergency SMS alert to their parents in case of an unexpected fall. This invention is based on cutting-edge technology, giving parents peace of mind that their kids are safe. The device will also be able to detect changes in temperature, providing an extra level of protection for the child.

Keywords: Child security gadget, Internet of Things (IoT), IoT device, smart wearable gadget.

PAPER ID: E219

SMART TRAFFIC CLEARANCE AND SIGNAL CONTROL SYSTEM USING RSSI AND RFID

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Abstract-Traffic congestion is a significant challenge that affects the response time of emergency vehicles. The delay can result in loss of lives, property damage, and accidents. Therefore, an efficient traffic control system for emergency vehicles is critical. The proposed system is based on Radio Frequency Identification (RFID) and Radio Signal Strength Indicators (RSSI) to monitor and control traffic flow. The system works by installing RFID tags on emergency vehicles, and RSSI receivers on traffic lights and intersections. When an emergency vehicle approaches, the RFID tag sends a signal to the RSSI receiver, which triggers a green light for the vehicle. The system also collects real-time traffic data and adjusts traffic light timings to reduce congestion. Our proposed system provides a comprehensive traffic control solution for emergency vehicles that can significantly improve response times and reduce the number of accidents.

Keywords - Delay, RSSI, V2V, RFID.

PAPER ID: E220

ELECTROENCEPHALOGRAM (EEG) BASED ON BIPOLAR DISORDER DEDUCTION

USING MACHINE LEARNING

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Abstract -The usage of portable electroencephalogram (EEG) equipment for clinical and non-clinical purposes has increased recently. Brain wave anomalies are discovered through EEGs. The scalp will be covered in electrodes, which are tiny metal discs with flimsy wires. The electrical charges in the brain are detected by electrodes. A mental condition



that affects the brain called bipolar disorder affects over 45 million people worldwide. It causes significant shifts in a person's level of energy, behaviour, and emotional condition which is also known as manic depression. In contrast to what is found in a healthy person, research has demonstrated that bipolar disorder is linked to considerable volumetric changes in neuronal networks in the brain. Bipolar disorder has led to morbidity and death around the globe and is the tenth most frequent cause of frailty in young people. People with bipolar disorder have a 9 –17 year shorter life expectancy than healthy individuals. Although bipolar disorder is a common mental condition, it can be mistaken for depressive disorder, which makes it challenging to treat affected patients. About 60% of bipolar disorder patients receive treatment for depression. Yet, machine learning offers sophisticated abilities and methods for an improved bipolar disorder diagnosis. One of the machine learning algorithms will be applied in this project to conclude the best possible model for diagnosing bipolar disorder. The purpose of this paper is to find a correct classification of bipolar disorder using EEG and machine learning.

Keywords: *Electroencephalogram (EEG), bipolar disorder, machine learning*

PAPER ID: E221**IOT TECHNIQUE BASED ON PORTABLE – VENTILATOR FOR CONTROLLING ARDUINO**

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Abstract – Human lungs use the reverse pressure generated by contraction motion of the diaphragm to suck in air for breathing. A contradictory motion is used by a ventilator to inflate the lungs by pumping type motion. A ventilator mechanism must be able to deliver in the range of 10 – 30 breaths per minute, with the ability to adjust rising increments in sets of 2. Along with this the ventilator must have the ability to adjust the air volume pushed into lungs in each breath. Our system makes use of blood pressure sensor along with sensitive heart Beat sensor to monitor the necessary vitals of the patient and display on a webpage using IOT. When any abnormality in the HB or BP the ventilator bag automatically pumping also according the value of the Sensors the inhalation speed also varying correspondingly. The entire system is driven by arduino controller to achieve desired results and to assist patients in COVID pandemic and other emergency situations. The body temperature sensor LM35 used to sense the temperature of the patient and Pressure sensor used sense the Pressure value and Heart beat sensor to pulse of the patient. All the sensor values processed in Atmega328 arduino controller and checking for the threshold settings. If threshold exists the controller will send a signal to the servo motor in the ventilator mechanism. The NodeMCU IOT module used here to send values to cloud server for doctor checkup from remote. All the Values are displaying in LCD.

Key Words: *Arduino, IOT, sensors, ventilator, COVID pandemic*

PAPER ID: E222**AUTOMATIC COFFEE DISPENSER USING ARDUINO UNO**

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Abstract— According to Research made in India, the consumption of coffee amounted to 1.21 million 60-kilogram bags during the year 2022. Since twentieth century, coffee has become a popular drink. The main aim of our project is to offer the best quality and provide convenience for employees to share delicious drink. Decoction dispenser provide the coffee drinkers with option of choosing different flavours of coffee. Coffee machine is always ready to dispense, so that it can provide coffee to everyone, including shift and weekend workers instead of keeping a canteen late hours.

Keywords—*coffee, motor, lcd, buttons, I2C, Arduino UNO*

PAPER ID: E224

HEART DISEASE PREDICTION USING K-NEAREST NEIGHBOUR ALGORITHM

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Abstract-The main cause of death worldwide during the past few decades has been heart disease, also referred to as cardiovascular disease. It comprises a range of conditions that affect the heart. The need for timely access to precise, reliable, and useful procedures for early diagnosis and illness management is linked to a number of risk factors for heart disease. This project's model is built on supervised learning techniques such as Naive Bayes, decision trees, K-nearest neighbours, and random forests, and it exhibits a wide range of heart disease-related variables. It utilises the most recent dataset from the Cleveland database of the UCI heart disease patient repository. The goal of this study is to forecast the patients' risk of developing heart disease. According to the Naive Bayes findings, K-nearest neighbour gets the highest accuracy rating. Medical diagnostics can be enhanced by the use of computer-based systems and algorithms that make choices at the appropriate times. These systems are called decision support systems (DSSs). Therefore, intelligence also plays a role in this.

Keyword-Heart disease signs; prediction; machine learning.

**PAPER ID: E225****WEARABLE DEVICE FOR VISUALLY IMPAIRED**

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Abstract-Every humanity's topmost gift is to see the whole world with his bitsy eye. But one's topmost loss is suffering from sight due to numerous factors in life. Our design frame is to use the sound and the vibration signs to advise the eyeless person about the forthcoming obstacles, As the distance between the glove and the handicap diminishes the rush of both sound and wobbling signal supplements. One similar idea to help eyeless people from murderous accidents and periodic clashes with the objects around them is to give them with an ultrasonic vibrator, which in turn increase as well as decrease the sound rate of the object according to distance of an object is presented, and also a cost efficient module. This design is aimed at designing a flux aid for the visually disabled person. This design was made to design as it's effective, has low force application, short response time and also there's no training demanded..

Keyword-Heart disease signs; prediction; machine learning.

PAPER ID: E226**HI-TECH AGRICULTURE USING AI & CONVOLUTION NEURAL NETWORK***Dr.J.Nandhini**Professor/ ECE**Jai Shriram Engineering
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Abstract —An agricultural smart spraying system is one that targets spray applications of chemicals while ensuring low environmental impact. The targeted sensor forms the basis of precision spraying management for smart sprayers, which often include a targeted detection and spraying system. It is, however, possible to spray excess water. Using moisture sensors and float sensors, the Intelligent Spraying System can avoid the crop from being affected in the earlier stage. It is possible to prevent crops from being destroyed by climate change by using this technology. A CNN algorithm can detect insect disease so that the crop does not be affected. An analysis of the traditional methods for detecting plant diseases and pests is presented in this paper. A major threat to agricultural production lies in the presence of agricultural diseases and insect pests. Pests can cause significant economic losses if they are not detected and identified early. An automated crop disease detection system is presented in this paper using convolution neural networks.

Keywords —AI, Image Processing, CNN

**PAPER ID: E227****CROP PREDICTION AND FIELD MONITORING FOR PRECISION AGRICULTURE***Murali Krishna K**Assistant Professor**Department of ECE**Rajalakshmi**Engineering College,**Thandalam, Chennai,**Tamil Nadu, India**Jogan Daniel A**UG Scholar**Department of ECE**Rajalakshmi**Engineering College**Thandalam, Chennai,**Tamil Nadu, India**Hari S**UG Scholar**Department of ECE**Rajalakshmi**Engineering College**Thandalam, Chennai,**Tamil Nadu, India**Kirthiga S**UG Scholar**Department of ECE**Rajalakshmi**Engineering College**Thandalam, Chennai,**Tamil Nadu, India*

Abstract— The Indian agricultural sector is crucial to the country's economy, but unpredictable climate changes can lead to food scarcity and adversely affect farmers' yields. To address this issue, this project proposes using machine learning techniques, specifically supervised algorithms, to predict the most suitable crop for a specific land based on weather parameters and soil contents, including temperature, humidity, soil pH, nitrogen, phosphorus, and rainfall. The proposed system collects data from various sources and preprocess it to remove missing and redundant attributes, ensuring better accuracy in the prediction. The classification algorithms used in this system effectively predict future crop outcomes. By comparing more than two machine learning algorithms, the system provides more accurate predictions, which will help farmers choose the right crop for their land, ultimately benefiting the Indian agriculture sector and economy. Furthermore, this project also includes an animal detection system that uses ultrasonic sensors to protect crops from predators. The system detects animals within a specified range using an ultrasonic sensor and triggers a buzzer to alert the farmer. If a farmer has registered their mobile number, the system sends them a message through a GSM module. The animal detection system provides farmers with an effective way to detect predators, reducing the risk of losses due to animal attacks. By combining these two solutions, farmers can make informed decisions about crop selection and ensure animal safety, benefiting Indian agriculture.

Keywords— Machine Learning, Crop Prediction, temperature Humidity, pH, animal detection.

PAPER ID: E228**IOT IN AGRICULTURE FOR SMART FARMING***1st Dr.S.Deepa**Associate Professor,**Department of /iECE.**Karpagam College of Engineering**Coimbatore, India**deepa.s@kce.ac.in**3rd Lohit M**Department of ECE**Karpagam College of Engineering**Coimbatore, India**19l221@kce.ac.in**2nd Premkumar K**Department of ECE**Karpagam College of Engineering**Coimbatore, India**19l234@kce.ac.in**4th Nandhakumar G**Department of ECE**Karpagam College of Engineering**Coimbatore, India**19l229@kce.ac.in*



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Abstract-The IoT-based Smart Agricultural Management System is a revolutionary technology that helps farmers to manage their crops more efficiently. The system uses sensors to collect data from the environment and sends it to the cloud for analysis. The data is then processed using machine learning algorithms to provide valuable insights that farmers can use to optimize their farming practices. The system also allows farmers to remotely control irrigation systems and monitor the health of their crops using their smartphones. This paper presents an overview of the IoT-based Smart Agricultural Management System and its key features. The paper also discusses the benefits of using the system for agriculture and the challenges that need to be addressed to ensure its successful implementation. Overall, the system has the potential to significantly improve agricultural productivity, reduce resource consumption, and increase crop yields.

Keywords Agriculture Monitoring, Temperature sensor, Humidity Raindrop sensor, Ultrasonic sensor

PAPER ID: E229

ANALYSIS OF HISTORIC MASONRY BUILDING BASED ON DENSE NET DEEP LEARNING MODEL

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Abstract - Historic structures are tangible reminders of a country's history and culture. Its preservation demands special care since it is crucial from a historical, cultural, and economic standpoint. Finding and analyzing superficial damage to historic structures requires a significant amount of time and effort when using vision-based manual inspection processes. Surface damage detection procedures for historic cultural monuments are now based on in-situ visual examination methods supplemented by specialist equipment. While this technique has significant shortcomings, inspectors without knowledge may inaccurately assess the damage, having a significant detrimental impact on the subsequent structural safety evaluation and repair. This way of conducting a large-scale inspection is inefficient and time-consuming. Furthermore, the subsequent data analysis and processing require a large number of qualified employees, which takes time and a lot of labor. As a result, this approach is insufficient for recognizing historic building problems fast. To identify damages, this research proposes a novel automatic damage detection approach based on an enhanced deep learning neural model based on the DenseNet framework.

Keywords— Crack Detection, Mask R-CNN, Preservation, Segmentation, DenseNet Framework

PAPER ID: E230

RAILWAY TRACK MONITORING FOR ACCIDENTS AVOIDANCE AND SECURITYSYSTEMS

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Abstract-The railway is the most popular transportation system in the world. People from different vocations can afford it. The railway system plays a vital role in commercial as well as for donations and providing a safe traveling experience in ultramodern life. The major problems faced by railwaysystem are wrong signal, wrong track switching, fire



ona running train etc. As a result, a lot of damage has been done in the lucrative sector with many upbringings affecting our progress. In this project, we had planned to implement an adaptive security system that will continuously monitor parameters such as Obstacle detection, fire, smoke level, etc and take adaptive security to rescue the lives and provide information to the concerned authority regarding the issue. With changes taking place in the field of electronics fabrication, units placed within every bogie can be embedded on a single board thereby making it compact size. Human lives that cannot be evaluated will be in trouble due to the above-mentioned problem. So, we got motivated to overcome this problem, at least reduce the above-mentioned problem by using Embedded system design technology.

Keywords— IOT, Ultrasonic Sensor, Vibration Sensor, GSM module, Fire Sensor, Proximity Sensor, RF module

PAPER ID: E235

IoT BASED ADVANCED IRRIGATION SYSTEM WITH DIGITAL IMAGE PROCESSING TECHNIQUE

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Abstract - Internet of things (IoT) is a promising technology which provides efficient and reliable solutions towards the modernization of several domains. IoT based solutions are being developed to automatically maintain and monitor agricultural farms with minimal human involvement. Irrigation is a critical aspect of crop production that directly affects the yield and quality of plants. Accurate measurement of plant dimensions such as height and width is essential for optimizing irrigation practices. Traditional methods of plant measurement are time-consuming and labor-intensive, making them impractical for large-scale applications. In recent years, digital image processing techniques have emerged as a promising alternative for nondestructive and efficient measurement of plant dimensions. This study aimed to develop a method for irrigation scheduling using digital image processing of plant height and width. The proposed method involved capturing images of plants at regular intervals and processing them using computer vision algorithms. The plant height and width were calculated based on the segmentation of plant pixels from the background. The measured plant dimensions were then used to estimate the water requirements of the plant and optimize the irrigation schedule. Experimental results demonstrated the effectiveness of the proposed method for accurate and efficient measurement of plant dimensions. The developed technique has the potential to revolutionize irrigation management by providing a low-cost, non-invasive, and automated solution for plant monitoring and irrigation scheduling.

Keywords: *IoT, Irrigation , Digital image processing, Height and Width, Plant.*

PAPER ID: E237

V2V ROAD MISHAP REGULATING USING VISIBLE LIGHT COMMUNICATION

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Abstract-The latest technology called as LI-FI which has been developing a lot in few years. Traffic congestion and tidal flow management are two major problems in modern urban areas which lead to road accident and loss of life. Using the concept of LI-FI two vehicles are communicated with the help of LEDs bulbs with the help of transmitter and receiver circuit. A very chip device called as ultrasonic sensor which is used to measure the distance and also to detect any obstacles is used here just to communicate the two vehicles when they come in contact in some range which is preferred for the ultrasonic sensor. Using this LI-FI the data are transmitted from one vehicle to another. The data that is transmitted through LIFI can be any data like audio, video or text. This system aims at communicating with the vehicle in



its surrounding with the help of its location to indicate their proximity. In this way the drivers can communicate with each other and act according to the situation. Visible light communication(VLC) is act as medium of this lift technology to send a data at high speed between two devices. VLC are conducted to overcome the radio spectrum congestion.

Keywords- LIFE Visible, light, LED

PAPER ID: E238

LOW POWER AND HIGH SPEED EVALUATION OF NEURAL NETWORK BY APPROXIMATE 4:2 COMPRESSOR

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Abstract - Now a days Machine learning and the automation technique has been one of the important applications used for approximate circuit. In this, a 4:2 compressor is approximated by using the concept of probabilistic pruning method, which removes the unwanted elements to reduce errors. And the trained neural network is performed using machine learning algorithm and it is applied by truth table of proposed 4:2 compressor. The proposed compressor has consisted of only 18 transistors, where it consumes less energy of 0.2013 no with minimum silicon area of 12.42 micrometre square. And to train the neural network, the Verilog module is utilized by using the Xilinx ISE design suite . And all the simulations are done by using Cadence Virtuoso The error analysis of simulation has been performed by using MATLAB application.

Keywords— Probabilistic pruning, Artificial Neural Network, 4:2 compressor.

PAPER ID: E239

TOXIC GAS DETECTION AND MONITORING USING INTERNET OF THINGS

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Abstract - In working environment, the toxic gas leakage accidents are the main reason for workers health and also causes death. The Toxic gas can be detected and monitored by recent technologies using Internet of things. This project is mainly used to reduce the industrial accidents and hazardous. This process is monitored by Internet of things. Arduino Micro controller board is connected with gas sensor, Flame sensor and Temperature senor. The alert message is display by LCD through Arduino. The alert signal arises when the gas level increases above the normal gas level. This can be done by internet receiver channel. The sensor will receive the information about the gas level and it is stored in internet. This will used for analyzing and processing the safety regulations in industrial environment.

Keywords – Gas senor, Alarm, LCD, Internet of Things, Arduino Microcontroller Board.



PAPER ID: E240

A CERTAIN INVESTIGATION ON INTEGRATED SOLUTION FOR BLIND NAVIGATOR USING IOT

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Abstract – The Blind Navigator is a system designed to assist visually impaired individuals in navigating their environment using earphones. The system uses a combination of GPS, obstacle detection, and audio cues to provide realtime navigation information to the user. The user wears a pair of earphones connected to a smart phone app that receives the GPS location and provides audio cues to guide the user along their desired route. In addition, the app uses obstacle detection technology to detect obstacles in the user's path and provides warnings through the earphones. The pulse rate sensor and temperature sensor can be used to identify the health condition for emergency purpose and alert if any health issues will be find. The Blind Navigator system provides a convenient and reliable means for the visually impaired to navigate their environment independently, safely, and confidently.

KeyWords: GPS, Obstacle detection (Ultrasonic sensors), Ear Phones(Audio Cues)

PAPER ID: E241

WIRELESS CONTROLLED ROBOTIC WEEDING VEHICLE FOR EFFICIENT AND ENVIRONMENT – FRIENDLY FARMING

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Abstract—This paper addresses a system which can be implemented in agriculture process for weeding purpose. Weed removal is an important part of agriculture process and it is necessary because weed affects plant growth as well as fights with main plant for different factors such as space, nutrients, water and sunlight. Weeding is a crucial part of crop maintenance in agriculture, but it can be a time consuming and labor-intensive process. To address this challenge, we propose a mobile controlled weeding vehicle. The vehicle was equipped with sensors and camera that captures images from fields and microcontroller that transmitting data's to operator's system. Computer vision algorithms used to identify and locate weeds and this system was controlled by a mobile application that allows user to monitor and control the vehicle remotely. To ensure that the vehicle is effective at removing weeds, we implemented a control system that uses machine learning algorithms to optimize the weeding process. The mobile controlled weeding vehicle offers a convenient and efficient solution for farmers looking to weed the field with reduced their workload and this is a micro-volume weed cutting vehicle for early stage weed control.

Keywords—Agriculture automation, weed cutter, motion and path planning, precision agriculture.

**PAPER ID: E242****IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION**

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Abstract— A child safety monitoring system is a device or software designed to ensure the safety of children. It enables parents, guardians, or caregivers to monitor and track the activities of children, whether they are in or out of the house. The system utilizes various technologies, such as GPS tracking, cameras, and sensors, to monitor children's movements, location, and activities. The primary purpose of child safety monitoring systems is to prevent potential risks and accidents that could harm children. The system alerts parents or caregivers when children are in potentially dangerous situations or locations, such as near a swimming pool, leaving the house, or wandering away in public areas. Moreover, child safety monitoring systems can provide peace of mind to parents, particularly those who have busy schedules or work long hours. It can also help parents identify patterns of behavior and track the progress of their child's development. Overall, child safety monitoring systems are valuable tools for parents and caregivers to ensure their children's safety and wellbeing. They provide an additional layer of protection and support, particularly in today's digital age, where children are exposed to various online risks and dangers.

Keywords--GSM, GPS, UVSensor, Temperature Sensor, Heartbeat sensor.

PAPER ID: E243**MACHINE LEARNING BASED MULTISTAGE CATEGORIZATION OF STANDARD SEGMENTATION MODEL FOR IDENTIFYING LUNG CANCER**

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Abstract-The incidence of lung cancer is rising, and it is the major cause of cancer-related death. Successful treatment is more likely if lung cancer is diagnosed at a less advanced stage, when the tumor is still tiny and has not spread. Smokers and ex-smokers who are in the symptom-free stage are encouraged to get screened for lung cancer. X-rays are used to make cross-sectional images of the chest in the diagnosis of lung cancer. Symptoms to detect the disease are often non-existent in the early stages, making prediction is extremely challenging. Several computer-aided diagnostic methodologies and systems have been proposed, developed, and produced to detect the size and location and these methods leverage computer technology in various ways. The challenging characteristics of the lung cancer include high variability nodule classification and low decision making. In this paper machine learning based Multistage Categorization of Standard Segmentation (ML-MCSS) model has been proposed to assist clinicians deal with ambiguous pulmonary nodules found on the spot or through screening. Furthermore, the disease prediction accuracy of newly presented Logistic



Segmentation Algorithms (LSA) is compared to that of the benchmark and data collected manually. The experimental results provides the step-by-step analyses of each method and their collective shortcomings were highlighted.

Keywords- *Machine learning, pulmonary nodules, Diagnostic methodologies, logistic segmentation, benchmark, computer aided, cross sectional.*

PAPER ID: E245

ASSISTIVE SYSTEM FOR VISUALLY IMPAIRED USING CNN

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Abstract— The objective of this work is to propose a human computer interface for The ability to live without being controlled by any action, judgment and any outside factors including any opinions and regulations is defined by the term Independent. But in reality physical movement for traveling or simply walking through a crowded street pose a great challenge for a visually impaired person. Also they must learn every detail about the home environment such as placement of tables; chairs etc. to prevent injury. Because of this disability they have to sacrifice their independence in daily living by depending on the sighted people in every busy place like bus, footpaths, railway stations etc. This paper aims to design an artificial navigating system with adjustable sensitivity with the help of ultrasonic proximity sensor and a GPS module to assist these blind persons to walk fearlessly and independently in both indoor and outdoor environments. This system can detect any type of upcoming obstacles and potholes using the reflection properties of ultrasound. Attachment of the system to the clothes, shoe, body area and as well as to the walking stick make its utilization more versatile and reliable.

Keywords—*sensors, GPS module, embedded systems*

PAPER ID: E246

IOT EQUIPPED AND AI ENABLED NEXT GENERATION SMART AGRICULTURE FOR PLANT DISEASE PREDICTION

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Abstract: The Smart agriculture technique have recently widespread interest by farmers. This is driven by several factors, which include the widespread of economically priced, low powered internet of things based wireless sensors to monitor remotely and report the condition of climate, crops ad field. This enables efficient management of resources like minimizing water requirements, man power and minimizing the use of toxic pesticides. Internet of Thighs (IoT) is one of such emerging technology which can be used in Agriculture. The implementation of IoT technology in agriculture to help farmers increase their productivity and reduce the cost of production. This system can be used to monitor irrigation, soil moisture, the humidity of the environment, soil nutrients and process data to study further. The recent boom in AI can



enable the farmers to deploy autonomous farming machinery's and make better prediction of the future based on past and present condition to minimize the crop diseases and pest infestation.

Keywords: IoT enabled smart sensor, plant disease prediction using AI, CNN Algorithm.

PAPER ID: E247

SMART GLOVE FOR GUIDING PHYSICALLY CHALLENGED PEOPLE USING GESTURE CONTROL MODULE WITH ARDUINO

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Abstract –“Development of Arduino-based Smart Gloves for Dumb and Deaf Communication Using Gestures” This research proposes an Arduino-based smart glove system for communication between dumb and deaf individuals using hand gestures. The system uses flex sensors to detect hand movements and Proportional Integral Derivative (PID) algorithms to recognize the voltage for already stored different gestures, which are then translated into text or speech messages. This project aims is to lower this barrier in communication by using Smart Gloves. The results show that the system is accurate and reliable, and can be used to improve communication between dumb and deaf individuals. With the help of these gloves disabled person can also get chance to grow in their respective career. Using such devices by disabled person also makes nation grow.

Keywords: *Arduino, PID algorithm, Smart gloves, Flex sensors etc...*

PAPER ID: E248

IOT BASED COVID PATIENT HEALTH MONITOR IN QUARANTINE

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Abstract--Now a days on the platform of COVID we require special Covid 19 Quarantinecentres setup in order to treat covid patients Because covid is so contagious, it is crucial to isolate these patients, but doctors must also keep an eye on their well-being. It is getting more challenging to monitor the health status of many isolated patients due to the rising number of instances. One issue isthe requirement for doctors to regularly check on their patients' health. There are more and morepatients for the doctors to keep track of. 3]For the sole purpose of monitoring, doctors are at danger of infection. The system then transmits this data over the internet using WIFI transmission by connecting to WIFI internet connection. The data is transmitted and received over IoT-by-IoT Gecko platform to display data of patient remotely. In order to address this problem, we developed a remote Internet of Things-based health monitor system that enables remote monitoring.

Keywords: *covid, health, WIFI, IOT*



PAPER ID: E250

RIDING ASSISTANT FOR BIKE USING OBJECT DETECTION AND AVOIDANCE ALGORITHM

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Abstract--Drunken driving is one of the leading causes of road fatalities. One serious road accident in the country occurs every minute. The main reason for these accidents is Drunken Driving, Speeding/ Reckless Driving, Rain or Wet Roads, Potholes and Bad Road Condition, Breaking Traffic Rules, Tailgating, etc. These accidents are minimized by using MINIMI DEVICE. This device is programmed to manage all the driving conditions and human errors using sensors. We use Jetson nano as a microcontroller that detects and measures the approximate distance between the vehicle and the objects in front using OpenCV and a machine learning algorithm. Using this device, we can make accident-free roads.

Keywords—Assistance, Machine learning, Optical, Embedded systems, Detection, Self driving, Avoidance

PAPER ID: E251

SMART SOLAR PANEL CLEANING SYSTEM

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Abstract--The majority of the energy used by all life forms on Earth comes from the sun. Additionally, it serves as the foundation for all energy sources other than atomic Energy. But compared to other energy sources, solar technology has not advanced as much. It has numerous difficulties, including expensive costs, erratic and unpredictable nature, storage requirements, and poor efficiency. By tackling the problem of dust accumulation on solar panel surfaces, which reduces plant output and lowers overall plant efficiency, this research aims to increase the efficiency of solar power plants. It suggests creating a system to regularly clean the built-up dust from solar panels' surfaces and preserve the output of solar power plants. Solar panels need to be cleaned frequently due to the frequent dust storms in the Gulf region, particularly in Saudi Arabia. As cleaning solar panels by hand is dangerous for people in the hot sun, this initiative also tries to minimise



human involvement in the process. To guarantee the effectiveness of the cleaning, wiping substance must be employed in the mechanism's conception.

Keywords: Efficiency, Solar panel, micro controller.

PAPER ID: E252**AI BASED PICK MY COURSE CHATBOT**

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Abstract: The project aims to create an interactive chatbot called "Pick My Course Bot" that helps students choose their career path. Using artificial intelligence and machine learning, chatbots are trained to understand user requests and respond correctly, providing necessary information and recommendations. The goal of this project is to improve students' decision-making process by providing them with access to collective knowledge and providing support at any time. Using chatbots, students can make informed decisions about career paths while avoiding the common problem of choosing a path influenced by friends or family. Chatbots provide a better experience, increasing students' chances of choosing the right course. The motivation for this project is to improve career decision-making and increase students' awareness of different career fields. In conclusion, this project provides a valuable solution to the problems students face when choosing a career by providing reliable information and guidance.

Keywords—Chatbot,Career path,Artificial intelligence,Educational guidance.

PAPER ID: E324**PUBLIC HEALTH MONITORING SYSTEM APPROACH WITH MEDKIT**

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Abstract—This paper presents an approach for public health monitoring based on Medikit, a mobile application for collecting health data. Medikit utilizes the available mobile phone and Wi-Fi networks, and a web application for health monitoring. The data collected from the users are analyzed and visualized in order to gain insights about the user's health



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condition. The system includes a set of modules for data acquisition and analysis, and a graphical user interface to display the results. The results are also presented in a web portal for easy access by both the users and public health officials. This approach provides an effective solution to monitor public health, and the results can be used to develop strategies for targeted health interventions.

Keywords—Public health monitoring, Medikit, Mobile phone, Wi-Fi, Web application.

**PAPER ID: I101****DESIGN OF RECONFIGURABLE ANTENNA FOR 5G APPLICATION**

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Abstract - One of the biggest challenges in modern communication systems is to provide a single antenna for different applications. Existing antenna systems are limited to some applications. Existing antenna systems are limited to some applications. So it is important to design a reconfigurable antenna for multiple applications. The purpose of this paper is to design a reconfigurable antenna that operates in the resonance frequency of 3.5 GHz. The total size of the antenna is 50 × 52 mm². It is printed on a low loss 1.524 mm Rogers TMM4 laminate with a dielectric of 4.5 and a loss tangent of 0.002 was used to fabricate the prototype. We used the commercially used software ANSYS HFSS (Electromagnetic Simulator) to simulate the reconfigurable antenna and to determine the electromagnetic characteristics of this antenna such as S Parameter, VSWR and gain of the antenna. Due to the reason of congestion on the electromagnetic frequency spectrum, frequency reconfigurable antennas have received much attention due to their salient feature of using spectrum very efficiently. Cognitive radio utilizes frequency re-configurable narrow band antennas to work at some unoccupied spectrum. Besides compact size, easy fabrication and low profile structures, other features are also required, such as good frequency selectivity and stable radiation patterns at all frequencies. An antenna reconfiguration can be achieved by employing micro-electro- mechanical systems switches (MEMS), varactor diodes or PIN diodes as tunable components. Various methods have been introduced to achieve the reconfiguration for maintaining the compactness of the antenna. In this work a CPW-fed antenna with switching capabilities is presented and is shown in Figure 1. The resonance at 4.27 GHz is achieved by providing an extra path to travel on the patch using additional meander lines. Later on PIN diodes are activated to switch the resonance frequency to 3.56 GHz.

Keywords- Frequency, WBAN, Link budget, M-ary FSK,M-ary PSK .

PAPER ID: I102**HIGH PERFORMANCE TERAHERTZ ANTENNA DESIGN USING GOLD PATCH FOR WIRELESS BODY AREA NETWORKS**

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Abstract- Wireless body area networks (WBAN) are used extensively because of the increasing use of wireless networks and various IoT devices. A Wearable Patch antenna is used to develop various WBAN applications. In wireless communication, due to the paucity of available spectrum, the need for high data rate should be considered in the future convincing systems. Benefiting from a much wider bandwidth, terahertz (THz) connectivity becomes the promising technology for future 6G networks. Therefore Terahertz (THz) frequency band is considered in this paper and the gold patch material is used for antenna design in WBAN system. The proposed model is based on the evaluation of the link budget and the path attenuation. A compact size rectangular patch antenna with inset feed is analyzed and designed for signal transmission in wireless body area networks. The operating frequency of the antenna is considered to be 0.75 THz. The proposed antenna is designed and simulated by using High-Frequency Structure Simulator (HFSS) and the proposed antenna attains better gain, VSWR and return loss. In WBAN, the amount of transmitted power at various distances between the transmitter and receiver is analyzed by using various modulation techniques.

Keywords - Frequency, WBAN, Link budget, M-ary FSK,M-ary PSK .

**PAPER ID: I103****DESIGN OF A LOW-PROFILE DUAL-POLARIZED STEPPED SLOTTED ANTENNA ARRAY FOR BASE STATION**

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Abstract - In this letter, a microstrip-fed dual-polarized stepped- impedance (SI) slot antenna element with a low profile is first proposed. The antenna is composed of two pairs of SI slots excited by two orthogonal stepped microstrip feed lines. The broadband characteristic is achieved by combining the fundamental and spurious resonances of the SI slot resonators, while the good cross polarization is mainly due to the introduction of the shorting pins. Secondly, based on the proposed antenna, a four-element antenna array is designed, constructed, and measured for base-station applications. Measured results demonstrate the bandwidths (return loss dB) of the antenna array are 46.9% (1.55–2.5 GHz) and 38.7% (1.69–2.5 GHz) for Port 1 and Port 2, respectively. The isolation between the two ports is greater than 35 dB, whereas the cross polarization level maintains lower than 27 dB across the entire operating band. In addition, the antenna array prototype achieves average gains of 13.5 and 13.9 dBi for horizontal polarization and vertical polarization, respectively.

Keywords- Antenna array, dual-polarized slot antenna, high isolation, low profile, stable gain, wide band.

PAPER ID: I104**WIRELESS CELL PHONE DETECTION SYSTEM**

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Abstract- It has been some decades since human beings start using mobile phones. They have been minimizing and modernizing our costs and communication styles. They are primarily designed for voice communication. In addition to the standard voice function, new generation mobile phones support many additional services, and accessories such as SMS for text messaging, email, packet switching for access to the internet, gaming, Bluetooth, camera with video recorder and mms for sending and receiving photos and video, mp3 player, radio and GPS. As long as the mobile network is there our mobile phone wouldn't stop communicating with the nearest cell (network station or tower) but when we receive a call, try to call for someone or connect to the internet our mobile receive a higher frequency signal from the previous one that's when we say our mobile phone is in active mode. Mobile phone detectors are devices that can detect active mobile phones around them by using antenna based detection system. As started earlier when mobile phones are active there exist a radio frequency signal transmitted and received by the transceiver and the mobile, thus mobile phone detectors detect are designed to detect this kind of signal by their antenna and use it as an input then give us an output whether by a speaker alarm, buzzer or any output device. In plane stations they also can be used to test whether the device in the hand of the customer are mobile phone or not, for the sake of security.

Keywords- Bluetooth; USB; Micro USB; Communication; Mobile phone.

**PAPER ID: I105****TSUNAMI ALERT AND DETECTION**

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Abstract - Tsunami early warning systems have provided to be the extreme importance after the tsunami that hit Japan in March 2011. This research article presents a case study based on the tsunami detection using Bottom Pressure Rate (BPR) measurement and the post the analysis using the SAR datasets. A final decision based system using BPR has been studied to carry out the measurements of tsunami wave parameters. SAR based study has also been carried out for the post tsunami studies. Wiener filters are utilized to remove the speckle noise presents in imagery. Future scope of this work has also been proposed. The early detection and warning systems have shown and proven an ultimate importance, especially after the destructive tsunami that hit Japan in March 2011. The purpose of this research is to notify and enhance the existing tsunami results for the detection and early warning prediction with the suitable accuracy .Most of the current tsunami under water seismological algorithms has been developed since the 1960s when the giant Chilean earthquake generated in Pacific Ocean.. The coastal based radar monitoring systems are implemented in various countries to detect the tsunami wave's arrival near to the coast and to analyze and present the report to the disaster management team for the quick and sudden action to save various lives.The main components for an end-to-end system of tsunami are to yield real-time surveying, seismic and tsunami activities alert, punctual decision production and advisories, and dissemination of warnings and information.

Keywords- Remote sensing; Tsunami damage detection; Epicenter; BPR.

PAPER ID: I106**SPECIAL TRAFFIC SYSTEM FOR EMERGENCY VEHICLES**

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Abstract- Traffic congestion problem is a phenomena which contributed huge impact to the transportation system in country. A traffic light controller system is designed in order to solve these problems. This system was designed to be operated when it received signal from emergency vehicles based on radio frequency transmission and used the PIC 16F877A micro controller to change the sequence back to the normal sequence before the emergency mode was triggered. This system will reduce accidents which often happen at the traffic light intersections because of other vehicle had to huddle for given a special route to emergency vehicle. As the result, this project successful analyzing and implementing the wireless communication; the radio frequency transmission in the traffic light control system for emergency vehicles. The prototype of this project is using the frequency of 434 MHz and function with the sequence mode of traffic light when emergency vehicles passing by an intersection and changing the sequence back to the normal sequence before the emergency mode was triggered. In future, this prototype system can be improved by controlling the real traffic situation, in fact improving present traffic light system technology. The circuit of this project is designed and constructed roughly using the entire chosen component during this phase. The components are assembled on a breadboard to ensure that the circuit work properly A radio frequency signal begins as an electrical alternating current signal that is originally generated by a transmitter. This AC signal is sent via a copper conductor which usually a coaxial cable and radiated out of an antenna element in the form of an electromagnetic wave. Changes of current flow in the antenna produce changes in the electromagnetic fields around the antenna. After consideration is done, there is a section where the component should be look and fully understood about their advantages and disadvantages. The component must be chosen properly before it will be proceed to design process. If the component is not compatible due to disadvantages, then it will go back to the consideration component process again.

Keywords- PIC 16F877A, Radio Frequency (RF), Sequence Control, Traffic Light.



PAPER ID: I107

ELECTRICITY ENERGY METER USING IOT

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Abstract- In this project, we will learn how to make our own IOT Based Electricity Energy Meter using ESP32 & monitor data on the Blynk Application. Earlier we built GSM Prepaid Energy Meter. With the current technology, you need to go to the meter reading room and take down readings. Thus monitoring and keeping track records of your electricity consumption is a tedious task. To automate this, we can use the Internet of Things. The Internet of Things saves time and money by automating remote data collection. Smart Energy Meter has received quite a lot of acclaim across the globe in recent years. We need to select the current sensor as well as the voltage sensor so that the current & voltage can be measured and thus we can know about the power consumption & total power consumed. The best current sensor available in the market is SCT-013. This is SCT-013 Non-Invasive AC Current Sensor Split Core Type Clamp Meter Sensor which can be used to measure AC current up to 100 amperes. Similarly, the best voltage sensor is the AC Voltage Sensor Module ZMPT101B. The ZMPT101B AC Voltage Sensor is the best where we need to measure the accurate AC voltage with a voltage transformer. Using the SCT-013 Current Sensor & ZMPT101B Voltage Sensor, we can measure the all required parameters needed for Electricity Energy Meter. We will interface the SCT-013 Current Sensor & ZMPT101B Voltage Sensor with ESP32 Wifi Module & Send the data to Blynk Application. The Blynk Application Dashboard will display the Voltage, Current, Power & total unit consumed in kW.

Keywords- Microcontrollers modem, GSM, GPS

PAPER ID: I108

DESIGN OF SQUARE SHAPED DUAL BAND OPERATING ANTENNA FOR USING WLAN AND BLUETOOTH APPLICATION

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Abstract- With improving technological needs in the field of communication the demand for dual band patch antenna is increasing rapidly. The objective of this work is to design the dual band patch antenna applicable for WLAN and Bluetooth. The antenna design proposed is simulated using CST software studio .A square patch antenna with small Hexagon slot has been imprinted on Roger substrate material whose relative permittivity is 2.2 and the thickness of the substrate material used is 0.508mm.The dimensions of the antenna is 35mm x 35 mm.Inset feed is employed in the proposed square shaped dual band patch antenna. The proposed square shaped patch dual Band antenna element operates in 4.75 – 5.25GHz band and 2.32 – 2.67GHz band with the return loss of -20dB & -18dB. The VSWR values are less than 2 for both the Bands. The major highlights of the proposed structure are that it offers better return loss characteristics, gain and better operational bandwidth

Keywords- VSWR, WLAN, Bands, & Antenna.



PAPER ID: I109
WIRELESS CHARGER

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Abstract- Complete circuit is divided into two parts, one is transmitter section and other is receiver section. Transmitter section Consists of microcontroller to generate the frequency of 40 KHz at which LC tank circuit will oscillate. Specific 40 KHz Frequency is used, because low frequency is not capable to deliver that much of power to the tank circuit. Microcontroller programmed in Timer mode 1(16 bit) which generate 40 KHz at respective port. But the output of Microcontroller is 5V 50mA. It is not sufficient to oscillate tank circuit. So there is a power MOSFET to amplify the Microcontroller output. N-Channel MOSFET is preferred as it has mobility of 1300v/m². Mobility is directly Proportional to amount of current handle by the device (up to 25A output current). Output of power MOSFET is given to LC tank circuit, which consist of capacitor and inductor in parallel. Capacitor stores the energy in the form of electric field and inductor stores the energy in the form of magnetic field. When voltage of 18V 3A appears across the capacitor, it start charging. When it gets fully charged it stops charging From source and starts to discharge through inductor. As inductor opposes the any change in current, and stores the Energy in the form of magnetic field. When another coil placed in that magnetic field, electromagnetic force gets Induced in to that coil, this is called inductive coupling which results in wireless power transmission. Coil output is then regulated by voltage regulator. This supplies the power to super capacitor bank. Two super Capacitors are connected in series to increase the voltage at output with parallel connection to increase the storage Capacity. Each super capacitor value is 4uf, 5.5v. Bank of super capacitors produces 11V voltage at the output. Super Capacitors are used for fast charging in less time. Super capacitor produces 11V but mobile required 3.7V, so again Voltage regulator is used. Then voltage regulated from 11V to 3.7V at the output. Then this voltage is applied to the Mobile. And once mobile placed on charging pad it gets charged within fractions.

Keywords- Super capacitor, LC tank circuit, MOSFET.

PAPER ID: I110

WIRELESS CONTROLLED DISTRIBUTION TRANSFORMER LOAD MANAGEMENT SYSTEM

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Abstract- The aim of this application is to reduce the manual effort needed to manage transactions in a company. Vehicle Management System has three types of monitoring. Goods loading, goods height and persons in goods garage. Notification will send through wireless network to Users. Application provides an interface to users to view the details like the Trans Vehicle details, goods loading and height of goods, Details in Daily Reports. The main aim is to monitor the goods loading in commercial goods vehicle. Things to check are goods loading, goods height and persons in goods garage area in vehicle.

Keywords- Vehicle, goods, wireless network and monitoring.



PAPER ID: I111

VOICE CONTROLLED CAR USING ARDUINO UNO FOR BLIND PERSONS

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Abstract- A special condition of the coefficients at each subcarrier's In-phase and Quadrature-phase (IQ) channels should be satisfied to utilize the single carrier effect of DFT spreading. An Identically Time-Shifted-Multicarrier (ITSM) algorithm with preprocessing method is proposed in DFT spread Partial Transmit Sequence (PTS) with preprocessing for low PAPR and high spectral efficiency in FBMC-OQAM system. The four candidate versions of the DFT-spread ITSM and preprocessing based FBMC waveform are generated in PTS and one with minimum peak power is selected to reduce PAPR. The virtual symbols are introduced with less time duration to increase the spectral efficiency. The foremost computation parts such as DFT and IDFT are united for multiple candidate generation. Also, under frequency selective channels, The neighboring data symbols cause interference to the pilot symbols in PTS with FBMC-OQAM systems and reduce the performance of the channel estimation. In order to overcome this situation before the receiver filtering process, the interference of the virtual symbols as a pilot in an over sampled frequency domain in PTS is analyzed. A virtual pilot symbol configuration is proposed for manipulating the interference analysis, with relevant filter coefficients to cancel the Inter-Carrier Interference (ICI). The simulation results for an Identically Time Shifted Multicarrier algorithm in DFT spread FBMC with PTS technique is obtained and are compared with conventional virtual symbols PTS with segment based optimization method. The results show that, the proposed method offer slow PAPR of 3.3 dB whereas the existing method is 4.5 dB for 10-3 Complementary Cumulative Distribution Function (CCDF).Also, the proposed system provides more spectral efficiency of 3.8 (bits/sec/Hz) compared to the existing method which show slow as 2.5 (bits/sec/Hz) as both are measured for 30 dB SNR at N=1024. Hence the proposed scheme offers better performance compared to the existing method.

Keywords- Channel estimation, FBMC-OQAM, ITSM, PAPR, Preprocessing, Spectral efficiency.

PAPER ID: I112

ACCIDENT DETECTION AND NOTIFICATION USING GPS

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Abstract - Everyday many lives are lost due to accidents on roads. Normally death happens due to the injury suffered by the passenger in the road accident but most of the time it also has been seen that the information of the accident, reach the emergency department very late, consequently the injured person could not sustain. So there must be an automatic system in every car . If the driver has just hit the wall in some cases like parking the driver will press the key. This will let the little controller know that this is a normal risk and that the system will not send an SMS .But if the driver is not in a position to press a button or if the accident is a serious accident the driver will not press the key and the system will send an SMS. The microcontroller detects links to GPS modems. It will then send this information to the GSM modem. The GSM modem issued to send this information via SMS. An SMS will be sent to a member of the driver's family so that they can take immediate action to help people who have been traumatized by the accident.

Keywords- Microcontrollers modem, GSM,GPS..



PAPER ID: I113

SYSTEM ON-CHIP (SOC) DESIGN OF SIGNAL PROCESSING UNIT FOR WEARABLE CARDIOVERTER DEFIBRILLATOR

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Abstract- In today's modern lifestyle, stress has become a major part. Due to changing lifestyle and food habits, cardiac problems have become a major threat to human life. Cardiac arrest, arrhythmias and dysrhythmias are some of the common medical complications witnessed in humans. They are the medical complexities, wherein the heart beats at an abnormal rate. Defibrillators play a major role in treating cardiac problems. It is intended to treat arrhythmias and dysrhythmias. One of the recent advancements in the field of wearable defibrillators is the wearable cardioverter defibrillator (WCD). The project aims at developing an SoC for signal processing of this wearable defibrillator application. Instead of having individual modules, integrating them to a single one will reduce the size of the defibrillator, thereby reducing the cost and weight too

Keywords- *defibrillator; wearable; integration.*

PAPER ID: I114

SMART AIR MONITORING SYSTEM BASE DON IOT

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Abstract- Bad air quality can aggravate asthma and other respiratory disorders, irritate the eyes, nose, and throat, induce shortness of breath, and have negative effects on the heart and cardiovascular system. Long-term exposure to contaminated air can result in more severe issues. The smart air quality monitoring equipment from Smarter Technologies can identify noxious gases, contaminants, and carbon dioxide levels while transmitting real-time data to a management dashboard. This offers better situational awareness, increased visibility, and earlier warnings about pollution hotspots. A web server and the Internet are utilized to monitor the air quality using an IOT-based air pollution monitoring system. When the amount of dangerous chemicals including CO₂, smoking, alcohol, benzene, NH₃, and NO_x is high enough, it will sound an alarm when the air quality drops below a specified threshold. An essential instrument for enhancing air quality, safeguarding public health, and ensuring rules are followed is air quality monitoring. It can also be used to locate the origins of pollutants. So, installing an air quality monitoring system aids in detecting the presence of pollutants, improving the living environment for people. By maintaining a calm atmosphere or as necessary, this has an effect on their health as well as lowering the likelihood of any health

Keywords- *IOT,Smartairmonitoring,CO₂,NH₃,NO_x.*

**PAPER ID: I115****LOW POWER APPROXIMATE MULTIPLEXER USING COMPRESSOR**

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Abstract- To reduce the power consumption, the design of approximate multiplier appears as a promising solution for many error-resilient applications. In this paper, we propose a low-power high-accuracy approximate 8×8 multiplier design. The proposed design has two main features. First, according to the significance, different weights utilize different compressors (in different levels of accuracy) to accumulate their product terms. As a result , the power consumption can be saved with a small error. Second, for the middle significance weights, we use high-order approximate compressors (e.g., 8:2 compressor) to reduce the logic of carry chains. To our knowledge, the proposed design is the first work that successfully uses high-order approximate compressors in the approximate multiplier design. Compared with an exact multiplier, experimental results show that the proposed approximate multiplier can achieve both low power and high accuracy. Approximate computing has been considered to improve the accuracy-performance trade-off in error tolerant applications. For many of these applications, multiplication is a key arithmetic operation. Given that approximate compressors are a key element in the design of power-efficient approximate multipliers, we first propose an initial approximate 4:2 compressor that introduces a rather large error to the output. However, the number of faulty rows in the compressor's truth table is significantly reduced by encoding its inputs using generate and propagate signals. Based on this improved compressor, two 4×4 multipliers are designed with different accuracies and then are used as building blocks for scaling up to 16×16 and 32×32 multipliers. According to them an relative error distance (MRED), them accurate of the proposed 16×16 unsigned designs has a 44% smaller power-delay product (PDP) compared to other designswithcomparableaccuracy.Theradix-4signedBoothmultiplierconstructedusingthe proposed compressor achieves a 52% reduction in the PDP-MRED product compared to the approximate Booth multipliers with comparable accuracy. The proposed multipliers outperform other approximate designs in image sharpening and joint photographic expertsgroup(JPEG)applicationsbyachievinghigherqualityoutputswithlowerpowerconsumptions

Keywords- Compressor, Multipliers, Accuracy and Power.

PAPER ID: I116**SIMULATION OF MODERN TRAFFIC LIGHTS CONTROL SYSTEMS USING MODULESIM SOFTWARE**

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Abstract- Within the project “OIS” (optical information systems) new traffic control mechanisms had to be invented and tested. One of the most important topics was to optimize the flow over a junction which can be measured using induct loops. For this purpose, an agent based traffic lights logic algorithm was used, which uses the length of a jam in front of a traffic light as input. As we had no possibility to test the traffic lights control within the reality, the improvement of the flow throughput of such junctions was shown using the open source traffic Simulation “SUMO” (Simulation of Urban Mobility) . This publication describes the algorithm itself and how it was embedded within the simulation. Simulations are often used to test new systems before implementing them into the real world. This also counts for traffic simulations. The main idea is that each traffic light is trying to solve the jams in his front by itself. To achieve this, he looks into the incoming lanes and measures the jam lengths on these lanes. If at one of these lanes the jam gets longer, this lane gets green for a longer time. This is done by increasing a green phase’s duration only if a jam is longer than a threshold. Furthermore, the jam has to occur for a certain amount of time. There are further boundaries for the duration of a phase – beside the standard value given at the begin, a phase must not be longer or shorter than predefined thresholds. Beside the advantage to be very simple, the agent based traffic lights logic can be set on top of existing traffic lights and tries to adapt them to the current traffic amount.



Keyword- Optimize, thresholds, lights, and Simulations.

PAPER ID: I117

HEARTBEAT DETECTION USING ARDUINO

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Abstract - Heartbeat Sensor is an electronic device that is used to measure the heart rate i.e. speed of the heartbeat. Monitoring body temperature, heart rate and blood pressure are the basic things that we do in order to keep us healthy. In order to measure the body temperature, we use thermometers and a sphygmomanometer to monitor the Arterial Pressure or Blood Pressure. Heart Rate can be monitored in two ways: one way is to manually check the pulse either at wrists or neck and the other way is to use a Heartbeat Sensor. In this project, we have designed a Heart Rate Monitor System using Arduino and Heartbeat Sensor. You can find the Principle of Heartbeat Sensor; working of the Heartbeat Sensor and Arduino based Heart Rate Monitoring System using a practical heartbeat Sensor.

Keywords—Heartbeat sensor, Sphygmomanometer, Arduino, Thermometer.

PAPER ID: I118

AMBULATORY SECURITY CAMERA

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*Abstract - A Surveillance or Closed-Circuit Television (CCTV) System is made up of one or many security cameras that capture and send video to a Network Video Recorder (NVR) or a cloud-based server, which records the video footage and presents them on a monitor or other connected device. Here we are using the moveable camera which can move left or right. The position of the camera is moved on the track based on the movement of the *human* being (or) any object. Hence by using our idea we can overcome our old style immovable fixed camera and ensure more safety by immune to block*



of camera site and anti-breaking of camera and it can also move various region in a room or in a place. The main objective is to create a safe environment, theft reduction and providing evidence.

Keywords – CCTV, NVR, Movable camera, Cloud server.

PAPER ID: I119

SMART LOCKING SYSTEM

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Abstract - Every person wants his house, Office to be secured Security is becoming necessary as the possibilities of intrusion are increasing day by day. In this project, door security system has been designed that has a unique feature. Arduino was used, which is considered one of the modern programmable devices and we also used wireless Bluetooth device so as to control door Here, our application uses Arduino as it's controller as a communication link between mobile application which we developed using Android application. In this project aims to develop a door security system using sensor, servo motor data from all these sensors is continuously received and processed by Arduino UNO board which act as microcontroller. A LDR sensor measures intensity of a particular place, while ultrasonic sensor works to measure distance by sending small pulse. The Bluetooth module is used to control the door through the application door developed by us, thus the system ensures home safety as well as security.

Keywords – LDR, Arduino, Controller.

PAPER ID: I120

5G ANTENNA DESIGN

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Abstract - The intensive research in the fifth generation (5G) technology is a clear indication of technological revolution to meet the ever-increasing demand and needs for high-speed communication as well as Internet of Thing (IoT) based applications. The timely upgradation in 5G technology standards is released by third generation partnership project (3GPP) which enables the researchers to refine the research objectives and contribute towards the development. The 5G technology will be supported by not only smartphones but also different IoT devices to provide different services like smart building, smart city, and many more which will require a 5G antenna with low latency, low path loss, and stable radiation pattern. This paper provides a comprehensive study of different antenna designs considering various 5G antenna design aspects like compactness, efficiency, isolation, etc. This review paper elaborates the state-of-the-art research on the different types of antennas with their performance enhancement techniques for 5G technology in recent years. Also, this paper precisely covers 5G specifications and categorization of antennas followed by a comparative analysis of different antenna designs. Till now, many 5G antenna designs have been proposed by the different researchers, but an exhaustive review of different types of 5G antenna with their performance enhancement method is not yet done. So, in this paper, we have attempted to explore the different types of 5G antenna designs, their performance enhancement techniques, comparison, and future breakthroughs in a holistic way.

Keywords – 5G, 3GPP, Antenna, IoT, High speed communication.

PAPER ID: I121

SMART SOLAR GRASS CUTTER

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Abstract - This research paper related to the grass cutter machine. The presented work consists of two main things as the first thing is related to the movement of vehicle and the second thing is associated with the cutting of grass. The normal grass cutters have been broadly used recently by the workers in gardening of lawn. However, the manual operated grass cutters are absorbing a very large amount of energy and making air pollution, grass cutter also generate so much of noise and vibration. To avoid those problems, we are design smart and automatic solar grass cutter. This devised can powered by solar energy and electrical supply also. It is smartly controlled that's why has been named as smart solar grass cutter that



has three main systems which are as smart control system, solar system, and the grass cutter. In this project, solar energy is used as main power source for smart solar grass cutter.

Keywords—Grass cutter, Solar energy, smart control system.

PAPER ID: I122

IOT BASED THREE PHASE POWER FAILURE MONITORING

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Abstract - Now-a-days technology has developed to a large extend. At the same time the need for systems with automation and high security are preferred. This is an advanced system that monitors power failure. There are three phases R, Y and B when any one of the phases detects failure it notifies the concerned authority with the help of text message. This IoT system is connected with the NodeMCU and the wi-fi is connected for configuration purpose. When any of the phase is disconnected due to failure, LCD will indicates and an alarm will be given by the buzzer. Our system sends SMS to the authorized number about the disconnected phase. After the phase fault is rectified, the NodeMCU and IoT will stops sending notification to the user. This work presents the advanced IoT based concept of power failure monitoring. It is used to monitor the failure of any of the phases of a three phase power system and sends an alert message to a registered number in case of a fault. The monitoring of the system done with the use of NodeMCU and IoT. The system continuously monitors the each phase power of the three phase power supply and alerts the user with an SMS and a buzzer is also set up. Thus protecting the machines from single phasing and protects it from damage of the windings and the machines.

Keywords – NodeMCU, LCD, IoT, SMS, Security.



PAPER ID: I123

DUAL MONPOLE ANTENNA WITH EBG ARRAY FOR MUTUAL COUPLING REDUCTION

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Abstract - In this paper, mutual coupling reduction between elements of UWB MIMO antenna using small size uniplanar EBG is presented. Proposed UWB antenna geometry consists of two circular shaped monopole radiator switch a Slot in ground plane for proper impedance matching. A UC-EBG (Uniplanar Electromagnetic Band Gap) cell of Size 6.8 mm × 6.8 mm is inserted between the antenna elements in 4 × 1 array configuration to improve the isolation. Bandgap of the UCEBG is determined using dispersion diagram and suspended strip line method. The Proposed antenna is fabricated on 1.6 mm thick, low cost FR4 substrate, possessing an overall size of 27.2 mm × 46 mm. The antenna has been fabricated and experimentally verified. The antenna shows simulated and measured –10 dB impedance bandwidths of 14.6 GHz (3–17.6 GHz) and 14.8 GHz (3.6–17.9 GHz) respectively. UCEBG structure exhibits multiple stop bands and suppresses E-plane coupling over these bands. Isolation Better than –18 dB is achieved over the complete impedance bandwidth. Radiation efficiency and peak gain of the antenna varies from 78% to 96.7% and 1.4 dB to 4 dB respectively. MIMO parameters, i.e. error correlation coefficient (ECC) better than 0.018 and Total active reflection coefficient (TARC) better than –26 dB is achieved over the impedance bandwidth.

Keywords—HFSS, TARC, MIMO, UC-EBG, UWB.

PAPER ID: I124

SUN TRACKING SOLAR PANEL USING ARDUINO

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Abstract - Solar panel has been used increasingly in recent years to convert solar energy to electrical energy. The solar panel can be used either as a stand-alone system or as a large solar system that is connected to the electricity grids. The earth receives 84 Terawatts of power and our world consumes about 12 Terawatts of power per day. We are trying to consume more energy from the sun using solar panel. In order to maximize the conversion from solar to electrical energy, the solar panels have to be positioned perpendicular to the sun. Thus, the tracking of the sun's location and positioning of the solar panel are important. The goal of this project is to design an automatic tracking system, which can locate position of the sun. The tracking system will move the solar panel so that it is positioned perpendicular to the sun for maximum energy conversion at all time. Photo resistors will be used as sensors in this system. The system will consist of light sensing system, microcontroller, gear motor system, and a solar panel. Our system will output up to 40% more energy than solar panels without tracking systems.

Keywords – Solar panel, Terawatt, Photo resistor, Microcontroller.

PAPER ID: I125

AUTOMATIC WHEEL CHAIR USING VOICE RECOGNITION

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Abstract - This paper presents an automatic wheel chair using voice recognition. A voice controlled wheelchair makes it easy for physically disabled person who cannot control their movements of hands. The powered wheel chair depends on motors for locomotion and voice recognition for command. The circuit comprises of an Arduino, HM2007 Voice recognition module and Motors. The voice recognition module recognizes the command by the user and provides the corresponding coded data stored in the memory to Arduino Microcontroller. Arduino Microcontroller controls the locomotion accordingly. The wheelchair also has provision for joystick for physically disabled people who can move their hands. A voice controlled wheelchair prototype was developed using a commercially available manual wheelchair to assist people with both upper and lower limb disabilities. An Arduino microcontroller processes the voice command from the speech recognition module and controls the motor movement of the wheelchair.

Keywords - Voice recognition module, Ultrasonic Sensor, joy stick and Arduino board.

**PAPER ID: I126****OBSTACLES AVOIDING USING ARDUINO WITH VOICE CONTROLLER**

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Abstract - The project is design to build an obstacle avoidance robotic vehicle using ultrasonic sensors for its movement. Arduino is used to achieve the desired operation. A robot is a machine that can perform task automatically or with guidance. The project proposes robotic vehicle that has an intelligence built in it such that it directs itself whenever an obstacle comes in its path. This robotic vehicle is built, using Arduino. An ultrasonic sensor is used to detect any obstacle ahead of it and sends a command to the Arduino. Depending on the input signal received, the Arduino redirects the robot to move in an alternate direction by actuating the motors which are interfaced to it through a motor driver. At the same time, we can control steering gear to realize the obstacle avoidance function. The robot car uses front axle steering, rear wheel drive arrangement. Four drive tires are driven by two DC motors with gear reduction mechanisms.

Keywords - Proposes robotic, Ultrasonic sensor, Steering gear.

PAPER ID: I127**RAIN DETECTION WITH AUTOMATIC CLOSE OF WINDOW USING RAIN SENSOR IN IOT**

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Abstract - A simple Rain Detection System can be easily built by interfacing an Arduino with Rain Sensor. The sensor will detect any rainfall falling on it and the Arduino board will sense it and can perform required actions. A system like this can be used in many different fields, such as agriculture and automobile fields. Rainfall detection can be used to automatically regulate the Irrigation process. Also, continuous rainfall data can help farmers use this smart system to automatically water the crop only when absolutely required. Similarly, in the automobiles sector windshield wipers can be made fully automatic by using the rain detection system. And the Home Automation Systems can also use rain detection to automatically close windows and adjust room temperature. Also, note that the rain sensor module is also referred to as a raindrop sensor or rain gauge sensor or rainwater sensor based on usage, but they all refer to the same sensor used in this project and they all work on the same principle. We have also built a simple Rain Alarm and a automatic car wiper by using 555 Timer only, you might want to check that as well if you do not want to use an Arduino. That being said, let's get back to this project and start building our Arduino Rain Gauge.

Keywords – Rain detection, Rain sensor, Arduino, Rain gauge.

PAPER ID: I128

SMART SECURITY SYSTEMS FOR TRAIN USING IOT

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Abstract - Train accidents are one of the major issues in recent times. The objective of this project is to create a Security System for the trains. We made a continuous observation on trains with Gas sensors which measure the leakage of any harmful gases. In this system, we implement a smart fire detection system that would not only detect the fire using integrated sensors but also alert proper owners, emergency services and nearby stations. The proposed model in this system employs different integrated detectors. The signals from those detectors go through the system algorithm to check the fire's potentiality and then broadcast the predicted result to various parties using the Wi-Fi module. To get real-life data without putting human lives in danger, an IoT technology has been implemented to provide the fire department with the necessary data. Using the IoT devices like the Wi-Fi module, we continuously monitor the train to save the human lives by providing the data collected from the gas sensor and temperature sensor. As soon as the fire is detected, the sprinkler we implemented will automatically be turned on, which reduces the effect caused by fire.

Keywords—Gas sensor, Wi-Fi, Integrated sensors, IoT.



PAPER ID: I129

CHATBOT USING ARTIFICIAL INTELLIGENCE

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Abstract - This report presents the design and development of a chat bot based on Artificial intelligence. The output of our project will be a chat bot which will be deployed to the college website. This will be more convenient to the users to get the query resolved without having to travel to the college or waiting in queues which will save their time and money. The query can be answered at any time in the day or night without having to keep in mind the college working h This paper presents an automatic wheel chair using voice recognition. A voice controlled wheelchair makes it easy for physically disabled person who cannot control their movements of hands. The powered wheel chair depends on motors for locomotion and voice recognition for command. The circuit comprises of an Arduino, HM2007 Voice recognition module and Motors. The voice recognition module recognizes the command by the user and provides the corresponding coded data stored in the memory to Arduino Microcontroller. Arduino Microcontroller controls the locomotion accordingly. The wheelchair also has provision for joystick for physically disabled people who can move their hands.

Keywords – Chat bot, Pattern Matching, Human Computer Interaction (HCI), Artificial Intelligence, Machine Learning, tensorflow, python, Chatter bot.

PAPER ID: I130

ACCIDENT PREVENTION SYSTEM

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Abstract - The project is design to build an accident avoiding robot using ultrasonic sensors and Arduino. A robot is a machine that can perform task automatically or with guidance. The project proposes robotic that has an idea to built it such that it directs itself whenever an object comes in its way. An ultrasonic sensor is used to detect any object. It is an intelligent device that can automatically sense the object in front of it and avoid them by turning itself in another direction. This design allows the robot to navigate in an unknown environment by avoiding collisions.

Keywords—Ultrasonic sensor, Arduino, navigation.

PAPER ID: I131
ALCOHOL DETECTION SYSTEM

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Abstract - The Alcohol Detection System is a project aimed at detecting alcohol in a person's breath and preventing them from driving if they are under the influence. The system is designed to be installed in cars and uses sensors and algorithms to determine the level of alcohol in the driver's breath. The system is equipped with a display screen that provides real-time feedback to the driver and alerts them if they are over the legal limit. The primary goal of this project is to reduce the number of drunk driving accidents and increase road safety. The system can also be used in other settings, such as workplaces or events, to ensure a safe environment for everyone. The Alcohol Detection System uses infrared spectroscopy or fuel cell technology to detect alcohol in the breath sample. The system's accuracy and precision are highly dependent on the sensor technology used. The system can also be integrated with other driver-assistance systems such as lane departure warning, forward collision warning, and automatic emergency braking. The Alcohol Detection System can also be customized to meet the specific needs of different organizations or industries. The system's cost and complexity depend on the technology used and the degree of integration. The system's calibration and maintenance are critical to ensure accurate and reliable results.

Keywords – Alcohol detection system, Display screen, spectroscopy.

**PAPER ID: I132****RECTANGULAR MICROSTRIP PATCH ANTENNA**

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Abstract: The purpose of this paper is to design a micro strip rectangular antenna in Advance Design System Momentum (ADS). The resonant frequency of antenna is 5.2 GHz. The reflection coefficient is less than -10dB for a frequency range of 3 GHz to 6 GHz. The proposed rectangular patch antenna has been devise using Glass Epoxy substrate (FR4) with dielectric constant ($\epsilon_r = 4.4$), loss tangent ($\tan \delta$) equal to 0.02. This rectangular patch is excited using transmission lines of particular length and width. Various parameters, for example the gain, S parameters, directivity and efficiency of the designed rectangular antenna are obtained from ADS Momentum.

Keywords: Antenna, ADS Momentum, FR4.

PAPER ID: I133**DESIGN OF LOW POWER 1-BIT FULL ADDER**

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Abstract: Full adder is the primary logic units in many digital circuits. A novel full adder circuit design has been presented in the article which is based on gate diffusion input (GDI) technique. In previous method, the adder has been designed by XOR-XNOR module. This improves delay, power consumption and computational complexity. In our proposed design, a variety of power reduction techniques will be infused for making efficient full adder design. For that the entire implementation will be performed spice simulation. For validating full adder performance, the parameters like PDP (Power Delay Product) will be measured at standard 90nm CMOS process.

Keywords: Full Adder, Gate Diffusion Input, Power Delay Product.

PAPER ID: I134**HUMAN FOLLOWING ROBOT**

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Abstract: Humanoid robotics is an emerging research field that has received significant attention during The past years and will continue to play an important role in robotics research and many applications of The 21st century and beyond. In this rapid moving world, there is a need of robot such a “A Human Following Robot” that can interact and co-exist with them. Because of its human following capability, These robots can work as assistants for humans in various situations and it can also acquire or monitor Certain information associated with the human subject. In this paper we present a prototype that uses Arduino Uno along with basic sensors such as ultrasonic and IR sensor All the processing is carried out By the microprocessor while the control of the motors is carried out by the controller. This robot can Further be modified by using many technologies such as Bluetooth, Pixy Camera etc.

Keywords: Artificial Intelligence, Human following, Human tracking, Ultrasonic Sensor, IR Sensor, Arduino Micro



Controller.

PAPER ID: I135

WEBPAGE DEVELOPMENT ON HALL BOOKING SYSTEM

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Abstract: “HALL BOOKING SYSTEM” is a web based application that works within a centralized network. This project presents a review on the software program “Hall Booking System” as should be used in an organisation or university, a facility which is used to reserve Halls, cancellation of reservation and different types of route enquiries used on securing quick reservations. MYSQL is built for managing and computerizing the traditional database, Structured Systems Analysis and Design Methodology (SSADM), Data Analytics was adopted. In addition, Angular was used for the front-end of the software while the back end was designed using MySQL, Javascript. It is recommended that despite the present functionality of the designed software, an additional functionality such as the use of E-mail to send Hall Bookings and notifications to the User about status of a bookings and approval and highly authenticated process should be implemented into the system.

Keywords: MYSQL, Javascript, angular, SSADM

PAPER ID: I136

VOICE AUTOMATION CAR

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Abstract: Voice Controlled CAR is a mobile robot whose movement can be controlled by the commander by giving specific voice commands. The speech is received by a microphone and processed by the Bluetooth module (hc-Speech recognition is a technology where the system understands the words given through speech. 05). When a command for the robot is recognized, then Bluetooth module sends a command message to the Arduino. The Arduino analyses the message and takes appropriate actions. The RF transmitter of the Bluetooth can take either switch press or voice commands which are converted to encoded digital data for the advantage of adequate range (up to 100 meters) from the robot. The receiver decodes the data before feeding it to another microcontroller to drive DC motors via motor driver IC for necessary work. This technology has an advantage over long communication range as compared to RF technology. Further the project can be developed using IoT technology where a user can control the robot from any corner of the world. The goal of this project is to introduce hearing AI sensor and also the speech recognition to the mobile robot such that it is capable to interact with human through Spoken Natural Language (NL).

Keywords: Speech Recognition, Microcontroller, Arduino, Bluetooth, Android.



PAPER ID: I137

HUMAN BODY POSTURE ANALYZER

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Abstract: The human body is made up of many different systems that work together to achieve good posture. As we grow and develop, we learn from and respond to information that is sent from various sources, including visual, vestibular (sensory) and proprioceptive (movement sensations from muscles and tendons) input. Damage to any of these systems, through injury or disease, can affect our ability to interact with the information and maintain good posture. However, always maintaining good posture can be difficult for anyone! The major problem is the spinal pain caused by the poor sitting posture on the office chair. The dynamic detection of human motion is important, which is widely applied in the fields of motion state capture and rehabilitation engineering.

Keywords: ADXL335 Accelerometer, Arduino UNO, Buzzer

PAPER ID: I138

DESIGN AND ANALYSIS OF SINGLE BAND MONOPOLE ANTENNA FOR WLAN APPLICATION

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Abstract: This paper presents the performance and comparison Of single band patch antenna operating at 5.488GHz (HFSS) Under flat and bend condition of different radius of 40mm, 50mm And 60mm. A 1.5mm Rogers RT5880 is used as a substrate and Copper is used as a conductive material. The relative permittivity And tangent loss of the substrate is 2.2 and 0.0009 respectively.The designed antenna has a compact size (38*48*1.5 mm³). For Optimum bandwidth and better radiation pattern a truncated Ground surface is used. The designed antenna efficiently operates(95.07%), giving sufficient bandwidth, directivity, gain and Return loss of 941.7 MHz, 4.86 dBi, 4.64 dB and -28.68 Respectively. The designed antenna is low profile, lighted weight, Compact size, and perfectly matched which result in HFSS is 1.03. The proposed antenna works well for HFSS and wearable Electronics.

Keywords: ANSYS HFSS applications, wearable antenna, wireless Communication.

PAPER ID: I139

DESIGN OF TRI-BAND ANTENNA FOR WIMAX APPLICATION

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Abstract: Antennas are the most crucial components needed to build a communication link in today's modern wireless sector. Because of its compact profile, less weight, and limited power handling capacity, microstrip antennas are suitable for aircraft and mobile applications. To achieve increased gain and bandwidth for dual band and tri-band operation, these antennas can be constructed in a wide range of configurations.This paper introduces a compact tri-band antenna for WiMAX applications. The basic structure of the proposed antenna dimensions 17.25mm x 25.69mm x 1.6mm. The designed antenna exhibits multiband behavior and produces three distinct resonant frequency bands. The antenna's first band resonates at -19.15 GHz with a return loss of 5.40dB, while its second band operates at two different resonating frequencies -19.48GHz&-21.58 GHz with a return loss of 7.06dB & 7.63dB respectively. The suggested antenna also supports WiMAX standards because it resonates at -14.71 GHz in its third band with a return



loss of about 9.78 dB. FR4 works as the substrate material for the proposed triple band antenna.

Keywords: Tri-band antenna, WiMAX, air craft, mobile application

PAPER ID: I140

CNC CONTROLLER

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Abstract: CNC machine is typically an electromechanical product mainly composed of a machine body and the computer numerical control system (CNC). The first benefits offer by any kind of CNC machine is improved automation. CNC machining offers a reliable solution for rapidly manufacturing the parts. The current approach, using an index able tool, managed to eliminate multiple set-ups of the work piece. The visibility programme is an effective method to identify orientations for finishing operations. The CNC controller works together with a series of motors and drive components to move and control the machine axes, executing the programmed motions. On the industrial machines there is usually a sophisticated feedback system that constantly monitors and adjusts the cutter's speed and position. The ability to interpret technical drawings and specs. Ability to characterize material machine ability, tool holding, tool cutter presentation and select of appropriate coolants for CNC manufacturing. Other, non-technical skills such as team-building, problem-solving, and written and oral communication skills.

Keywords: The computer numerical control system, Team-building, Machine ability

PAPER ID: I141

AUTOMATED PAPER VENDING MACHINE

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Abstract: The usage of paper is inevitable, and its demand is increasing steadily particularly in the places such as educational institutions, government offices, etc. At the same time, time is a precious thing that one does not want to waste in any way. In stationary shops it is quite difficult to buy papers during rush time period and the counting of the paper depending on the requirement would cause further time delay and there is a chance for the error in the manual counting of paper. To avoid these problems this project titled "Automatic Paper Vending Machine" is proposed to deliver the paper to the public by using the sensors and microcontrollers based on the Mechatronics principles. It will be cheaper and more economic for the bulk production and it will be very useful for the college and school students. Here it is designed to deliver inputting the respective coin in the system. It will help us to save more time and manual work will be nullified.

Keywords: A4, Vending machine, sensor, DC Motor, Arduino,



PAPER ID: I142

VEHICLE STARTER USING ARDUINO UNO

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Abstract: The paper presents the “Vehicle starter using Arduino UNO”. The system mainly designed for accessing vehicle by authorized people. The presented design prevents the user’s vehicle from unauthorized access. For real time implementation of the vehicle stater system, the Arduino UNO is the heart of the system. The fingerprint sensor (R305) is connected to the microcontroller in which n-number of authorized person’s fingerprint are registered. The output module motor is connected to controller which is enabled whenever authorized finger print is detected. The overall system requires as power supply a power supply as +5V. By implementing our proposed model, no one can access our vehicle without are knowledge. this will lead to reduction of theft rate of vehicle.

Keywords: Power supply, Arduino UNO, fingerprint sensor(R305), Motor.

PAPER ID: I143

SMALL SIZE RF ANTENNA FOR UAV APPLICATION

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Abstract: Owing to remote control and independent flying, commercial usage of unmanned aerial vehicles (UAVs) has recently been progressively extending from military use. Considering drones could be employed for remote sensing, communications broadcast. RF antenna is with compactness, light weight aeronautical design, and high penetration are essential due to the peculiarities of the operating conditions in UAVs. The main purpose of implementing Radio frequency (RF) is for high frequency antenna. This article is focused on the design of an ultra-wideband antenna for use with Unmanned Aerial Vehicles (UAVs). This antenna eliminates the problem of aerial vehicle drag. Low-profile construction is created by the RF Antenna. This antenna is designed to be light weight and compact. This antenna is manufactured of Rogers Duroid 5880LZ material and has dimensions of 29mm× 39 mm. The thickness of the material is 1.6mm. The feed used for the Roger Duroid material is inset feed. The antenna study reveals that the ultra-wideband productivity of S11< -10dB from 2.4 GHz to 6.5 GHz. Radiation pattern performance is satisfactory up to 5.8 GHz. The antenna generates a gain of 1.48. The highest radiation is provided by the RF antenna. Using a UAV model, the novel unique antenna was simulated and evaluated to access its performance

Keywords: Antenna, UAV Application, RF Antenna, Inset feed .

PAPER ID: I144

DESIGN AND IMPLEMENTATION OF MICROSTRIP FILTER USING FOR UWBAN APPLICATION USING CST

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Abstract: This paper presents a new compact microstrip filtering antenna with modified shaped slots to improve the impedance bandwidth. The proposed microstrip filtering antenna consists of three parts: the monopole radiating



patch antenna; the Stepped Impedance Resonator (SIR) filter; and the feeding microstrip line. The designed structure is achieved on one-sided glass epoxy FR-4 substrate with dielectric constant $\epsilon_r = 4.4$ and thickness $h = 1.6$ mm. The design procedure of the proposed filtering antenna starts from the second-order Chebyshev low pass filter (LPF) prototype. The achieved results show an excellent performance of S11-parameter with broadside antenna gain on +z-direction. Having two transmission zeros at 5.4 GHz and 7.7 GHz, good skirt selectivity and a wide-band impedance bandwidth of about 1.66 GHz makes the designed filtering antenna suitable for high-speed data communications. Both the simulation results generated by using the Computer Simulation Technology (CST) software package and the measurement achieved by using a vector network analyzer (HP 8510C) and the anechoic chamber show good agreement.

Keywords: Microstrip filtering antenna, The Stepped Impedance Resonator, Low pass filter

PAPER ID: I145**PCB DESIGN FOR SINGLE BOARD STEREO AMPLIFIER**

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Abstract: Normally amplifiers are used to increase the amplitude of the signal waveform thus converts low power signal to high power signal. In amplifiers the circuits are designed in the separate manner which means the separate circuits are designed for subwoofer , display etc, In this project the circuits are designed one one single circuit that is the whole circuit . so that this is called monopoly circuit design of the amplifier . the main advantages of this design is that the circuit reduces the wire connections inside the circuit because in other amplifier circuits for one and another circuit the wire connections are given for the supply of the power but in this circuit whole circuit is in one board so that the wires are reduced and twisted connections are reduced . In heat wise the circuit produces less heat than the normal amplifiers . In size wise the circuit are designed monopoly so that the circuit reduces the size of the amplifier . In cost wise the circuit makes less cost due to the designing in one single board, the cost of the board will be reduced to half . The main objective and advantage of the project is that the amplification will be increased by 5% than the normal amplifiers . By using the mono board there is a possibilities of connections of IR blasters , USB, AUX cable can be connected through this amplifier, SD card can be inserted and be accessed through it also pendrive can be accessed ,mic option will be provided . so that the main objective is that the circuit will be totally different comparing the all other amplifiers so that this type of amplifier design will increase the amplification.

Keywords: Subwoofer, IR blasters , USB, AUX cable

PAPER ID: I146**TRAFFIC SYSTEM FOR EMERGENCY VEHICLES**

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Abstract: Traffic congestion problem is a phenomena which contributed huge impact to the transportation system in country. A traffic light controller system is designed in order to solve these problems. This system was designed to be operated when it received signal from emergency vehicles based on radio frequency (RF) transmission and used the Programmable Integrated Circuit (PIC) 16F877A micro controller to change the sequence back to the normal sequence before the emergency mode was triggered. This system will reduce accidents which often happen at the traffic light intersections because of other vehicle had to huddle for given a special route to emergency



vehicle. As the result, this project successful analyzing and implementing the wireless communication; the radio frequency (RF) transmission in the traffic light control system for emergency vehicles. The prototype of this project is using the frequency of 434 MHz and function with the sequence mode of traffic light when emergency vehicles passing by an intersection and changing the sequence back to the normal sequence before the emergency mode was triggered. In future, this prototype system can be improved by controlling the real traffic situation, in fact improving present traffic light system technology. The circuit of this project is designed and constructed roughly using the entire chosen component during this phase. The components are assembled on a breadboard to ensure that the circuit work properly. A radio frequency (RF) signal begins as an electrical alternating current (AC) signal that is originally generated by a transmitter. This AC signal is sent via a copper conductor which usually a coaxial cable and radiated out of an antenna element in the form of an electromagnetic wave. Changes of current flow in the antenna produce changes in the electromagnetic fields around the antenna. After consideration is done, there is a section where the component should be look and fully understood about their advantages and disadvantages.

Keywords: PIC 16F877A, Radio Frequency (RF), Sequence Control, Traffic Light.

PAPER ID: I147**DESIGN OF SMALL AUDIO BUG DEVICES**

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Abstract: FM bugger is a device which generates frequency modulated signal. It is one element of a radio system which, with the aid of an antenna, propagates an electromagnetic signal. Standard FM broadcasts are based in the 88 - 108 MHz range. The signal (from the microphone) is fed into the audio frequency (AF) for amplification then to the modulator which combines the modulating signal with the carrier wave transports the modulated signal through (RF) for final amplification to the antenna. Fm receivers can be operated in the very high frequency bands at which AM interference is frequently severe, commercial FM radio stations are assigned frequencies between 88 and 108 MHz and is the intended frequency range of transmission. The FM bugger is a device which gives the information of one person to another in the remote location. Normally bugger is used for finding out the status of the person like where he is going, what he is talking etc. This FM bugger circuit is kept in a place where there is need of listening to a conversation. You can listen to this conversation using the normal FM radio set but a receiver circuit is designed for this project. The project enhances one's practical skill and it involves both the electronics and telecommunication engineering fields. Theoretical knowledge such as circuit theory, electronic circuit and principles of telecommunication learned through several courses offered by the electrical and telecommunication program is applied in the project.

Keywords: FM bugger, FM broadcast, AM interference.

PAPER ID: I148**REMOTE CONTROLLER**

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Abstract: Humanoid robotics is an emerging research field that has received significant attention during The past years and will continue to play an important role in robotics research and many applications of The 21st century and beyond. In this rapid moving world, there is a need of robot such a "A Human Following Robot" that can interact and co-exist with them. Because of its human following capability, These robots can work as assistants for humans in various situations and it can also acquire or monitor Certain information associated with the human subject. In this paper we present a prototype that uses Arduino Uno along with basic sensors such as ultrasonic and



IR sensor All the processing is carried out By the microprocessor while the control of the motors is carried out by the controller. This robot can Further be modified by using many technologies such as Bluetooth, Pixy Camera etc.

Keywords: Artificial Intelligence, Human following, Human tracking, Ultrasonic Sensor, IR Sensor, Arduino Micro Controller.

PAPER ID: I149

DETECTION OF BREATH COUNT USING BIOSENSOR

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Abstract - IoT has played an essential role in many industries over the last few decades. Recent advancements in the healthcare industry have made it possible to make healthcare accessible to more people and improve their overall health. The next step in healthcare is to integrate it seamlessly with IoT-assisted wearable sensor systems in the healthcare industry have made it possible to make healthcare accessible to more people and improve their overall health. The next step in healthcare is to integrate it seamlessly with IoT-assisted wearable sensor systems. It compiles various communication technologies and the devices commonly used in IoT-assisted wearable sensor systems and deals with its various applications in healthcare and their advantages to the world. A comparative analysis of all the wearable technology in healthcare is also discussed with a tabulation of various research and technology. Rapid assessment of breathing patterns is important for several emergency medical situations. In this research, we developed a non-invasive breathing analysis system that automatically detects different types of breathing patterns of clinical significance.

Keywords - Internet of Things, healthcare, sensors, wearable devices, healthcare monitoring.

PAPER ID: I150

DESIGN AND IMPLEMENTATION OF ULTRASONIC RADAR

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Abstract - Radar is an electronic device which utilizes electromagnetic waves to determine the altitude, range, direction, or speed of both moving and immovable objects. In contrast, ultrasonic waves are used instead of electromagnetic waves in ultrasonic radar. The low power consumption , low cost and ease of implementation are considered the main features of the ultrasonic radar to be devoted in several applications such as security purposes, object detection and avoidance systems in robotics. This work presents a design and implementation of ultrasonic radar for distance measurements. The design consists of an ultrasonic sensor, an Arduino board as a controller, a servo motor and a java application. The detection range of the proposed system is tested up to 500 cm with the angle of rotation from (0 to +180) and (180 to 0) degrees for different types of obstacles or objects (sponge, wood an aluminum). The design is built using open source hardware (Arduino Uno 328) which is coded via Micro C environment as a software entity. The effectiveness of the proposed design is measured using a statistical analysis of the distance error between the radar and the obstacles. The results obtained for all types of obstacles are tabled and graphed to prove that a very



small error can be achieved using the proposed design.

Keywords - Radar, Ultrasonic waves, , Servo motor, Distance and angle measurement

PAPER ID: I151

DESIGN AND SIMULATION OF FREQUENCY SELECTIVE SURFACE (FSS) ANTENNA USING HFSS

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Abstract - Frequency selective surfaces (FSSs) are traditionally formed by two-dimensional periodic arrangement of metallic elements on a dielectric substrate. Depending on the geometry and arrangement of the metallic unit cell, the array might show different functionalities such as band-pass or band-stop spatial filter, absorber, reflect array, and so on. Metamaterials inspired frequency selective surfaces operate based on a different principle that allows superior performance over the traditional structures. For instance, instead of using fully resonant elements as the unit cell of the FSS, nonresonant unit cells with small dimensions are used. The electrical size of the unit cells is decreased to less than 1/4 and even in some cases smaller than 1/10. These miniaturized elements act as lumped capacitors or inductors and are arranged in a way that they couple to the incident electromagnetic wave. An advantage of this type of FSS is that its frequency behavior can be accurately modelled using lumped element circuit model. Therefore, FSSs with specified functionalities can be designed by the aid of standard circuit-based filter theory. Furthermore, other metamaterials inspired FSSs with different improved functionalities and tunability have also been designed and implemented, such as low-profile second-order band-pass FSS, dual band FSSs with close band spacing, FSS with quasi-elliptical frequency response, and FSSs for high-power microwave and terahertz applications. This chapter will review the progress of the metamaterials inspired FSSs.

Keywords - Antenna array, dual-polarized slot antenna, high isolation, low profile, stable gain, wide band.

PAPER ID: I152

BLUETOOTH CONTROLLED DATA LOGGER ROBOT FOR SOIL TESTING

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Abstract - A Bluetooth controlled data logger robot for soil testing would be a robot equipped with sensors to measure various soil properties such as moisture, temperature, and pH. The robot would use Bluetooth technology to communicate with a nearby device, such as a smartphone or computer, to collect and store data. The robot could then transmit this data to the device for analysis, allowing for efficient and accurate monitoring of soil conditions. This type of robot could be useful for agriculture, environmental research, and other applications where monitoring soil conditions is important. Bluetooth controlled Robot car is controlled by using Android mobile phone , the same robot car can also be used to control via gesture, obstacle and rf etc. An application has to be downloaded from playstore to control the car in forward, backward, left and right directions. This project provides an solution for testing of soil.

Keywords - Arduino UNO, LDR , Soil moisture sensor, Temperature and Humidity sensor

**PAPER ID: I153****WEATHER FORECASTING USING PYTHON**

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Abstract - Weather forecasting is the application of science and technology to predict the state of the atmosphere for a given location. Ancient weather forecasting methods usually relied on observed patterns of events, also termed pattern recognition. For example, it might be observed that if the sunset was particularly red, the following day often brought fair weather. However, not all of these predictions prove reliable. Here this system will predict weather based on parameters such as temperature, humidity and wind. User will enter current temperature; humidity and a(dataset). The role of the admin is to add previous weather data in database, so that system will calculate weather (estimated rainfall in inches) based on these data. Weather forecasting system takes parameters such as temperature, humidity, and wind and will forecast weather based on previous record therefore this prediction will prove reliable. This system can be used in Air Traffic, Marine. Agriculture, Forestry, Military, and Navy etc. Here we will discuss the task of weather forecasting using Python.

Keywords - Weather forecasting, temperature; short range, governments, tropical storms. Challenging task, forecasting

PAPER ID: I154**VLSI IMPLEMENTATION OF TURBO CODE FOR LTE USING VERILOG HDL**

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Abstract - Turbo codes are error correction codes that are widely used in communication systems. Turbo codes exhibits high error correction capability as compared with other error correction codes. This paper proposes a Very Large Scale Integration (VLSI) architecture for the implementation of Turbo decoder. Soft-in-soft out decoders, interleaver and Deinterleaver is used in the decoder side which employs Maximum-a-Posteriori (MAP) algorithm. The number of iterations required to decode the information bits being transmitted is reduced by the use of MAP algorithm. For the encoder part, this paper uses a system which contains two Recursive convolutional encoders along with pseudorandom interleaver in encoder side. The Turbo encoding and decoding is done using Octave, Xilinx Vivado tools. The system is implemented and synthesized in Application Specific Integrated Circuit (ASIC).

Keywords - Turbo codes, Channel coding, Interleaver, SISO, Iterative decoder, MAP, Cadence, Xilinx Vivado.

PAPER ID: I155**LOW COST ANESTHESIA INJECTOR BASED ON AVR PROCESSOR**

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Abstract - In the hospital when any major operation is performed the patient must be in anesthetized condition. If the



operation lasts for a long time, say for suppose for 4 or 5 hours, complete dose of anesthesia cannot be administered in a single stroke. It may lead to the patient's death. If lower amount of anesthesia is administered, the patient may wakeup at the middle of the operation. To avoid this, the anesthetist administers for milliliters of anesthetics per hour to the patient. If the anesthetist fails to administer the anesthesia to the patient at the particular time interval, other allied problems may arise. To overcome such hazardous problems the design of an automatic operation of an anesthesia machine based on a microcontroller is effective. In general, Anesthesia provides depression on Central Nervous System of patient to lose his consciousness and ease to further treatment. Local anesthetic affects sensation at the applied region and aids to surgical operation performed. To maintain the anesthesia levels considering the patient's health anaesthesiologist works as multi task feedback controller to regulate drugs titration. In Automatic Anesthesia Controller, anesthesia levels are controlled as well as feedback is regulated by microcontroller considering the physiological parameters of patient specially including heart beat. Automatic Anesthesia Controller designed of microcontroller aids in controlling anesthesia levels during surgery, Heart Beat Sensor to calculate heart rate of patient and mechanical arrangement of syringes for the provision of anesthesia to patient. In this system a keypad is provided along with the microcontroller and syringe infusion pump. The anesthetist can set the level of anesthesia in terms of milliliters per hour to administer anesthesia to the patient with the help of keypad. After receiving the signal from the keypad, the microcontroller controls the signal to desire level and fed into the DC motor to drive the infusion pump in proper manner.

Keywords - Anesthesia, Drug titration, Microcontroller, Syringe Pump, Stepper Motor etc.

PAPER ID: I156

DRIVER ANTI SLEEP SENSOR

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Abstract - The driver anti-sleep sensor is a technological innovation designed to improve road safety by detecting the level of drowsiness in drivers and alerting them before they fall asleep while driving. The sensor uses a combination of physiological and behavioral indicators such as eye movements, steering patterns, and head position to determine a driver's level of alertness. The driver anti-sleep sensor operates by continuously monitoring the driver's vital signs, which are transmitted through sensors embedded in the steering wheel or seat. The data collected is then analyzed by a computer algorithm, which uses machine learning techniques to predict the driver's level of alertness. The driver anti-sleep sensor has the potential to reduce the number of road accidents caused by driver fatigue, which is estimated to be responsible for up to 20% of all road accidents. The technology can be installed in vehicles of all types and could be particularly useful for long-distance truck drivers, shift workers, and those who have to work long hours. The driver anti-sleep sensor is a promising technology that has the potential to improve road safety and save lives.

Keywords - Eye movements, Steering patterns, head positions, embedded in steering wheel or seat.



PAPER ID: I157

REFLECTED INTELLIGENT SURFACES (RIS)

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Abstract - Reflected Intelligent Surfaces (RIS) is a novel technology that has garnered significant interest in recent years. RIS refers to a surface that is capable of intelligently reflecting electromagnetic waves to improve wireless communication. This technology has the potential to significantly improve wireless communication systems by reducing signal loss and enhancing signal quality. RISs consist of a surface of passive elements that are capable of reflecting and modifying the path of electromagnetic waves. The surface is typically composed of a large number of tiny elements that can be controlled to reflect the signal in a specific direction, thereby increasing signal strength and reducing interference. The benefits of RIS technology are numerous, including the ability to improve signal strength, reduce signal interference, and increase coverage area. RISs can also be used to create new applications, such as wireless power transfer and localization systems. Despite its promising potential, the implementation of RIS technology is still in its early stages, and many challenges need to be addressed, such as the development of efficient algorithms for signal processing and control of the RIS surface. In conclusion, RIS technology holds great promise for enhancing wireless communication systems. With continued research and development, RISs could become a standard feature in future wireless communication systems.

Keywords - Reflected Intelligent Surfaces, RIS, electromagnetic waves, wireless communication, signal loss, signal quality, passive elements, coverage area, wireless power transfer, localization systems, efficient algorithms, future wireless communication systems.

PAPER ID: I158

TRIPE-BAND MIMO ANTENNA FOR 5G MOBILE APPLICATIONS

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Abstract - In this paper, a multiple input multiple output (MIMO) 4-antenna array is proposed and designed for 5G mobile terminal communication. The antenna array is composed of four triple-band antennas placed along the long edges on both sides of the terminal. It adopts a bent structure to achieve miniaturization and can cover the ISM (Industry Science Medicine) frequency band of 2370-to-2450MHz, and the 5G operating frequency bands of 3510-to-3610MHz and 4830-to-5080MHz allocated by the Ministry of Industry and Information Technology. The proposed antenna array achieves >40% total antenna efficiency, and >-15dB isolation between each two ports. The measurement results of the fabricated antenna array demonstrate in-line performance based on the simulation results, offering a feasible approach for 5G mobile terminal applications.

Keywords - 5G communication, triple-band, miniaturization, mobile terminal.

**PAPER ID: I159****DESIGN OF DIGITAL FILTERS AT 60 GHz**

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Abstract - Digital filters are mandatory for digital signal processing. This paper presents a digital filter that dispels the unwanted signals or noise from the required signal and enhances the performance of the signal. The extracted features of the digital filter have been analyzed to improve the output of the signal by using the IIR Butterworth filter. It provides different designed parameters for the IIR filter to achieve the desired result. Ansys tool is considered to find out the different responses of a digital filter. About eight parameters, such as phase response, magnitude response, magnitude and phase response, step response, group delay, pole/zero plot, phase delay, and impulse response, are used to analyze the filter responses. Some selected audio signals are used for observing the empirical response of the high-pass, low-pass, band-stop filter, and band-pass filter. A special tool is developed for this observation.

Keywords - Digital Filters, Signal Processing, Responses, Impulse, Delay.

PAPER ID: I160**ALCOHOL SENSING ENGINE LOCK WITH GPS**

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Abstract - The design and implementation of an Alcohol Detection with Engine Locking for cars using the Arduino-UNO as the controlling unit is done. The system will continuously monitor the level of alcohol concentration by alcohol detection sensor and thus turn off the engine of the vehicle if the alcohol concentration is above the threshold level. We try to tackle the problem of loss of life and property due to drunken driving. In our project, we have used Arduino Uno microcontroller attached to an alcohol sensor which detects the presence of alcohol by analyzing breath of a person driving the vehicle. Engine of the vehicle is turned off. This model will also send a message to the registered mobile number with the location of the vehicle using the SIM800L.

Keywords - Arduino UNO, Buzzer, LED, SIM800L, MQ-3 Sensor, DC Motor.

PAPER ID: I161**HEART BEAT SENSOR BY USING ARDUNIO**

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Abstract - Heartbeat Sensor is an electronic device that is used to measure the heart rate i.e. speed of the heartbeat. Monitoring body temperature, heart rate and blood pressure are the basic things that we do in order to keep us healthy. In order to measure the body temperature, we use thermometers and sphygmomanometer to monitor the Arterial Pressure or Blood Pressure. Heart Rate can be monitored in two ways: one way is to manually check the pulse either at wrists or neck and the other way is to use a Heartbeat Sensor. In this project, we have designed a Heart Rate Monitor System using Arduino and HeartbeatSensor. You can find the Principle of Heartbeat Sensor, working of the Heartbeat Sensor and Arduino based Heart Rate Monitoring System using a practical heartbeat Sensor.



Keywords - Arduino UNO, 16x2 LCD display, 10 kohm potentiometer, Heartbeat sensor, Jumper cables.

PAPER ID: I162**RF BASED REMOTE CONTROL FOR HOME APPLIANCES**

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Abstract - This remote presented here is to control independent home appliances through RF based remote system. From any place without any line of sight around the house, RF based wireless remote-control system can change the state of the electrical appliances either in on state or off state. The controlling circuit is built with RF transmitter and RF Receiver modules which are operating at 434 MHz along with encoder IC HT12E and decoder IC HT12D with few passive components. The four different channels at the encoder are used as input switches and the four channels at the decoder output are connected to the appliances through a relay. Here the transmission technique is amplitude shift keying (ASK) and the circuit is powered with 9 V. The main objective of this work is to build the circuit without any programming skill and to make it work without line-of-sight requirement using the RF technology.

Keywords - ICHT12E, ICHT12D, RF transmitter, RF receiver, Relay.

PAPER ID: I163**FOOD QUALITY MONITORING SYSTEM BY USING ARDUINO**

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Abstract - Food safety and hygiene is a major concern in order to prevent the food wastage. The Quality of the food needs to be monitored and it must be prevented from rotting and decaying by the atmospheric factors like temperature, humidity and dark. Therefore, it is useful to deploy quality monitoring devices at food stores. These quality monitoring devices keep a watch on the environmental factor that cause or pace up decay of the food. Later, the environmental factors can be controlled like by refrigeration, vacuum storage etc. In this paper, a similar food quality monitoring device will be designed that will keep watch of environmental factors like temperature, humidity, alcohol content and exposure to light.

Keywords - Arduino UNO, ESP8266 Wi-Fi Modem, DHT-11, MQ6, IoT device

PAPER ID: I164**METAMATERIAL BASED SUPERSTRATE MIMO ANTENNA FOR WLAN APPLICATION**

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Abstract - The implementation of metamaterial based superstrate inspired multiple input multiple output (MIMO) antenna with enhanced isolation and gain. Superstrate consist of novel hexagonal nested loop double negative



(DNG) metamaterial is placed above the MIMO antenna and it exhibits isolation performance better than over the entire WLAN band with a remarkable peak gain. Superstrate reduces the mutual coupling (MC) between the antenna elements by absorbing the near field component of the magnetic field. The effort has been made to develop a novel metamaterial inspired superstrate structure placed above the two elements MIMO antenna to enhance the gain and to improve the isolation between closely spaced antenna elements. Reflection coefficient, transmission coefficient and radiation properties further confirm the performance of the proposed design for wireless applications.

Keywords - Meta material, Double Negative Material (DNG), Unit cell, Mutual coupling (MC).

PAPER ID: I165

PROPAGATION AND NETWORK ANALYSIS FOR A DIPOLE BASED MASSIVE MIMO ANTENNA FOR 5G BASE STATIONS

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Abstract - In today's fast-paced world, where everyone/everything is moving towards an online platform, the need to provide high-speed data to all is inevitable. Hence, introducing the emerging 5G technology with orthogonal frequency division multiplexing integrated with massive MIMO technology is the need of the hour. A 640 port Massive MIMO (mMIMO) antenna with high evenly spread gain and very low delay, along with a practically possible data rate operating in the mm waveband, is proposed for a 5G base station. The individual antenna element consists of a dipole ($\lambda=0.5\text{cm}$) designed to operate at 57GHz. Placing the cylindrical MIMO antenna array (8x20) facing the four directions forming the m-MIMO antenna (160x4) at the height of 3m from ground level for simulation. Achievement of a maximum gain of 23.14dBi ($\theta=90^\circ$) and a minimum data rate of 1.44Gbps with -10dB bandwidth of 2.1GHz (256-QAM) approximately a distance of 478m from the 5G Base station. The m-MIMO structure gives an Envelope Correlation Coefficient of 0.015. The propagation analysis is carried out to substantiate the performance of the proposed system based on field strength and received power. Network Analysis for better reception performance is carried out by changing the antenna height placement, altering the down tilt of the antenna array, and sweeping the polarization angle of the antenna array.

Keywords - 5G antenna; m-MIMO; Dipole array; Maximum Gain.

PAPER ID: I166

DESIGN OF CIRCULARLY POLARIZED ANTENNA WITH LOW RETURN LOSS

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Abstract: This paper presents a novel design for a circularly polarized antenna that achieves high gain with low return loss. CP antennas are also favorable in situations where polarization mismatch may degrade the performance of communication system. Simulation results demonstrate that the proposed antenna achieves a high gain of 10 dB and a low return loss of -20 dB over the frequency range of 2.4 GHz to 2.5 GHz. A defected ground plane is employed in the design which results in reduction of surface waves leading towards higher gain of antenna. The proposed design provides favorable characteristics for various lightweight applications including miniaturized drones. This design has



various wireless communication applications, such as satellite communication systems, RFID, and wireless sensor networks. To validate the prototype, measured results are compared with simulation outcomes and good agreement is obtained.

Keywords: Circular Polarization, Radio Frequency Identification.

PAPER ID: I167
GAS DETECTOR FOR COAL MINING

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Abstract: Biogas is a crucial component of both the rural new energy development and Sustainable development of the Country. Most of the people are willing to generate the methane gas by organic wastages from home. This project describes the Gas detector device using Internet of Things. It has a PIC Microcontroller with Gas and Temperature sensors. This detector device can also suitable for gas leakage problems and Underground mines. Ambient gas detection and measurement had become essential in diverse fields and applications, from preventing accidents, avoiding equipment malfunction, to air pollution warnings and granting the correct gas mixture to patients in hospitals. Gas leakage can reach large proportions, affecting entire neighbourhoods or even cities, causing enormous environmental impacts. This project elaborates about the gas detector and automatic alarming system using Internet of Things. Key Words: PIC Microcontroller, Internet of Things, Gas sensor.

Keywords: rural new energy.

PAPER ID: I168
AUTOMOBILE SPEED LIMITER

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Abstract: Now-a-days road accidents are occurring frequently, due to rash driving of people. By observation most of the accidents occurs at school zones, parks, hospitals, hill areas and highways. Even police also can't monitor all such kind of accidents. So, in order to reduce the number of accidents and to control the vehicle speed the highway department has placed the sign boards. But it is difficult to observe such kind of signboards and hence accidents will occur. This paper provides a new way for controlling the speed of the vehicle without harming others. In this paper, we are using RFID module to limit vehicle speed. The RF transmitter is placed at first and last of the restricted areas and RFID receiver should be placed inside the vehicle. The vehicle speed was obtained by speedometer which is available in vehicle. And that speed is compared and monitored by the controller. If the vehicle speed exceeds the limited speed, it automatically controls the speed of the vehicle according to that particular zone. Hence, automatically the speed is reduced. If there is any emergency, a switch will be available in the vehicle. When the switch is ON, the speed is not controlled automatically. The vehicle which is switched ON, that vehicle number was stored in cloud. Here the main purpose of cloud is it loads the route map of the vehicle.

Keywords: Microcontroller unit;cloud;RFIDModule.

**PAPER ID: I169****AUTO VISITORS COUNTER WITH LIGHT CONTROLLER USING ARDUINO**

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Abstract: The fear of theft and burglary always annoys many people. When lock and keys become less safe, one can seek the help of electronic security systems. Such a portable security system is described here. This electronic setup auto activated whenever the intruder enters to the unauthorized no entry area. It auto activate the landline number and redial the last dialed number from the conventional telephone. All we need is to do minor changes to activate this telephone as it works as to become auto dialer circuit. Thus, whenever the intruder enters to the area, it activates the sensor circuit of either sound activation or infrared light beam obstruction circuit, the redial circuit become active and give a ring tone to the receiving end. It may be a mobile phone or any landline phone or even police control room.

Keywords: Arduino board, Security systems, I2R Sensor, Jumpers

PAPER ID: I170**PIEZOELECTRIC WHEEL**

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Abstract: A piezoelectric wheel is a novel device that utilizes the piezoelectric effect to convert mechanical energy into electrical energy. The device consists of a wheel with embedded piezoelectric materials that generate electrical energy when subjected to mechanical stress. The generated electrical energy can be used to power various electronic devices and systems, such as sensors, actuators, and wireless communication modules. The piezoelectric wheel has the potential to be used in various applications, such as in the automotive industry, where it can generate electricity from the rotational motion of wheels and reduce the load on the vehicle's battery. The device also has potential applications in the field of renewable energy, where it can be used to harvest energy from wind turbines, water turbines, and other rotating machinery. Overall, the piezoelectric wheel is a promising technology with a wide range of potential applications in various fields.

Keywords: Piezoelectric wheel, alternative energy, quartz , tire, economical.. Concerns for depletion of fossil fuels.

PAPER ID: I171**AUTOMATED INTRAVENOUS DRIP MONITORING SMART HEALTHCARE SYSTEM**

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Abstract: Health care being the most important aspect in heading toward a contented life also plays an essential role in India's progress. These days, automating the health monitoring devices leads to a drastic change in medical sphere as it ensures the safety of the patients and even helps in reducing the stress of doctors and nurses. In this field, intravenous remedy plays an important role as it is the system wherein the liquid substances are directly inserted into the patient's



vein via an IV tube but it could also worsen the situations if not taken proper care. Thus, this paper emphasizes on the necessity to overcome such a consequence by introducing a solution to it. Hereby an automatic intravenous drip monitoring system is developed which directly sends an alert message to the assigned nurse when the fluid level of the bottle reaches a certain limit. This system measures the weight of the saline bottle with the help of a load cell and then using an automatic alerting and indicating device namely GSM sends the alert signal. This system would be a significant serve to build a different approach toward the intravenous therapy.

Keywords: *GSM, Intravenous Therapy.*

PAPER ID: I172**RFID BASED PETROL PUMP AUTOMATION SYSTEM**

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Abstract: Now a days everything has been digitized in many existing systems, almost all petrol pumps have a controlling unit to form the tasks like managing the electrical pump, drive the display, measure the flow & accordingly stop the electrical pump. But still a person is required to collect the money and there is a possibility of many human errors. With the help of this petrol pump automation system, we are using RFID card to access petrol at different petrol stations of different petrol companies across the country and here. Whenever we want to fill the tank from the fuel dispenser, we just have to place the RFID card near the RFID reader. Then the micro-controller reads the data from the RFID reader and performs the action according to the customer requirements. This digital petrol pump system also provides the security for the customers for filling petrol at the Petrol stations by avoiding the involvement of human beings, hence reduces the risk of carrying money every time. This petrol pump system consists of Atmega328 micro-controller, RFID module, LCD display, Keypad, Ac pump and alarm. When RFID reader, reads the card it asks for the 3-digit password, if we enter wrong password more than twice it raises an alarm. And when the right password is entered into the system, the system asks for the amount and it also shows the balance amount. On entering the amount, the motor starts and petrol gets filled in the petrol tank from the fuel dispenser, RFID is a versatile and trending technology which is used in many real time applications. In this proposed work, RFID system is a micro controller-based system that reduces the man power and dispenses the accurate amount of fuel. Also, if the customer tries to swipe the unauthorized card, the RFID system rejects the card. In this way, the system is very secured..

Keywords: *RIFD, Arduino, Transformers*

PAPER ID: I173**REAL TIME FACE ACCURACY SCANNER**

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Abstract: In order to recognize an individual, the most important thing that we consider is face. There-fore, face is an individual identity of everyone and recognition of face helps in authenticating a person's identity. Facial recognition is a category of biometric recognition system that maps an individual's entity to the training features. The proposed software uses deep learning techniques to compare live features of captured images from videos to the face print of training set to verify one's identity. Face recognition systems can successfully match the training features in photos, videos or in real-time. Geometric, photometric stereo and localization are the different approaches of facial recognition. In this paper, we trained Elman Neural Network to recognize faces within intended limits. The Elman neural network with its good dynamic properties and strong global stability is most widely used to solve problems containing nonlinear, dynamic, and complex data. This system detects and recognizes multiple facial features for batch input in dynamic formats like videos. It is recorded with 94.6% of accuracy towards facial recognition thereby enhancing the



pixel's inception rate.

Keywords: Automatic face recognition, biometric identification, biometric authentication; identity verification.

PAPER ID: I174**IOT BASED ANTENNA POSITIONING SYSTEM**

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Abstract: IoT has become one of the most important technologies of 21st century. Internet of Things (IoT) refers to a physical device that is connected to the internet that is collecting and sharing data, it is possible to turn anything into the part of IoT. Now that we can connect everyday objects, kitchen appliances, cars, thermostats. Baby monitors to the internet via embedded devices, different sensors. Communication is possible between people, processes, and things. IoT devices are designed to be small, have a long wireless range, and have a long battery life. However every single Internet of Thing (IoT) device needs an antenna. The antenna is the means by which an IoT device receives and sends a signal to the outside world and therefore is the fundamental element of an IoT device. So it is very important to have proper antennas. The antenna is crucial it may make or break the communication with devices. A correct positioning of antenna will give you good wireless range or it will cause your devices to not even be reachable in the field. So for the proper positioning of antennas is necessary for the wireless communication. This system is used to direct the antenna direction in correct position. This system is difficult to achieve if antenna is placed in the wrong direction. The important features of this system are as follows: Parameters Stored: the user can select among the parameters like angle and direction in order to position the antenna with great ease through this application. Direction Specified: the user need to specify the direction whether clockwise or anti-clockwise direction. In this system, accelerometer sensor is situated on the antenna to get its acquired position and the motors will change the direction clock-wise or anti-clockwise through the Blynk app that is nothing but IoT. Antenna is moved by user command received through position Blynk app. Blynk is an IoT platform aimed to simplify building mobile and web applications for the IoT. It is used for connecting devices to the cloud, designing apps to remotely control and monitor them. The Blynk app act as remote and is used to send the signal to the MCU through the internet. According to commands received from Blynk direction of antenna will be changed as per specified direction of motor. This will result to positioning of antenna at required position

Keywords: IoT, antenna.

PAPER ID: I175**LOW POWER MULTIPLIER DESIGN**

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Abstract: The primitive constraints in any VLSI system design are power, delay and area. Systems based on CMOS logic consume more power and area. Higher power dissipation will have a direct effect on the lifetime and performance of digital systems. Adders and multipliers form the core of almost all the digital systems like Microprocessor, Digital Signal Processors (DSPs), etc., so the adders and multipliers need to be optimized in terms of power, area and delay for an efficient and cost-effective processor design. This paper presents an approach for implementing 8-bit Array multiplier, Wallace Tree multiplier and Vedic multiplier using modified Gate Diffusion Input (m-GDI) technology and



comparative analysis against area, power and delay. From the analysis, it is found that multipliers, which are built on m-GDI logic, occupy less area, dissipate less power and experience less delay than the multipliers based on CMOS logic, GDI logic and Booth multiplier. Also among the three m-GDI based multipliers, Vedic multiplier performs better in terms of area, speed and power than array multiplier and Wallace tree multiplier.

Keywords: Channel estimation, FBMC-OQAM, ITSM, PAPR, Preprocessing, Spectral efficiency.

PAPER ID: I176

AN EFFICIENT LOW POWER CMOS IMPLEMENTATION OF THE SRAM CELL

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Abstract: A Static Random Access Memory (SRAM) is designed to provide a direct interface with the CPU at speeds not attainable by DRAMs and to replace DRAMs in systems that require very low power consumption. The design difficulty of the SRAM is that data will be lost if SRAM is not powered, it does not offer to refresh programs and has a low storage capacity. The previous method deals with designing of 13T SRAM with bit-interleaving logic at 55nm for reducing an error. Further, the design will be improved by incorporating special technique at channel length of 45nm for reducing power as well as error. The entire design will be planned to implement in SPICE simulation tool and performance parameters like power, delay, and Power Delay Product (PDP) will be measured to validate the proposed design

Keywords: SRAM, Low-power, CMOS, Channel length, Read/Write cycles.

PAPER ID: I177

WIRELESS SECURED COMMUNICATION USING CRYPTOGRAPHY

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Abstract: Small embedded devices such as microcontrollers have been widely used for identification, authentication, securing and storing confidential information. In all these applications, the security and privacy of the microcontrollers are of crucial importance. To provide strong security to protect data, these devices depend on cryptographic algorithms to ensure confidentiality and integrity of data. This project is about designing and providing an effective communication between two army stations so that the transfer of crucial information is secured. Cryptography is about constructing and analysing protocols that prevent third parties or the public from reading private messages. Encryption is the process of encoding messages in such a way that third parties cannot read it, but only authorized parties can. In an encryption scheme, the message or information is encrypted using an AES algorithm, turning it into an unreadable cipher text. The AES algorithm will take less time and it is impossible to break the encryption algorithm without knowing the exact key value. This algorithm can be applied for data encryption and decryption in any type of public applications for sending confidential data. AES is a symmetric-key algorithm. In symmetric key cryptography method the same key is used to sending and receiving entities. The sender and receiver are being used for an encrypt/decrypt information with same key. In symmetric key cryptography ciphers are generated by substitution and transposition methods, but these ciphers can be obtained by recursive methods applied by introducer. AES is considered to be one of most capable encryption algorithm in cryptography and can be implemented in hardware or software. Hardware implementation would be faster and secure as compared to software implementation. AES is based on a design principle known as a substitution-permutation network. In AES data transfer process is possible only if the authorized user at receiver wants to access the



information and information is securely transferred from the transmitter to the receiver. Hence the possibility of hacking is minimal compared to other algorithms

Keywords: Cryptography, AES algorithm, encryption, decryption, symmetric key

PAPER ID: I178

GESTURE CONTROLLED BLUETOOTH SPEAKER

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Abstract: Today, nearly everyone has Bluetooth enabled devices that carry their music wherever they go. Our project was to create a gesture-controlled bluetooth speaker using two Raspberry Pis, where users can use hand gestures to control music playback. Additionally, the speaker emits LED lighting that visually suggests to users the state of the speaker. The speaker performs every functionality we planned to implement perfectly, we did not take into account the fact that human hands have gaps between the fingers. To detect the volume, we are using an ultrasonic sensor that detects the hand distance in centimeters. To improve our project, we would firstly like to add an amplifier circuit for our bluetooth speaker. Currently, the speaker isn't very loud, and the sound quality would be much better with an audio amplifier. The speaker sometimes does not recognize gestures made by hands perfectly, and thus we are currently using a piece of paper to control the speaker reliably. We believe this is because our hands are not continuous, flat objects, and that the gaps between our fingers make it hard for the sensors to detect gestures. To fix this issue, we can possibly mount the beam-break sensors differently so that the sensors can detect the palm instead of fingers. To improve the visual effects, we can modify the LED strip control to change its colour based on the beat of the music while music is playing, as the LED strips only change brightness and displays random colours when a song is played. The brightness of the LED strip also correlates linearly to the volume of the audio.

Keywords: Raspberry, LED Strip, Ultrasonic Sensor

PAPER ID: I179

RFID BASED ATTENDANCE SYSTEM USING ARDUINO WITH DATA LOGGER

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Abstract: The concept of avoiding fire accidents by automatic fire stopper helps to achieve the goal of protection of train from big accidents. This invention also helps to provide property protection for rail vehicles and infrastructures. Fire protection in locomotives has been greatly refined over the past few years to increase the high level of protection in the rail vehicles. This active system which will enhance the safety of people and self protect the rail vehicles. The top priority of the fire protection is to save the passengers and employees. The proposed system is designed by using RF module which is used to detect the fire accidents in rail vehicles and inform the authorities regarding fire in train with minimum delay and water sprinkler gets opened automatically to safe guard the property and human lives.

Keywords: RF Transceiver.



PAPER ID: I180

RFID BASED ATTENDANCE SYSTEM USING ARDUINO WITH DATA LOGGER

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Abstract: In this project, we have designed RFID RC522 Based Attendance System Using Arduino with Data Logger. MFRC522 RFID Reader is a very simple yet effective module. It is an RFID module and is used for scanning RFID cards. It's a new technology and is expanding day by day. Nowadays it is extensively used in offices where employees have issued an RFID card and their attendance is marked when they touch their card to the RFID reader. We have seen it in many movies that when someone places one's card over some machine then the door opens or closes. In short, it's a new emerging technology which is quite useful. In this project, we will make RFID MFRC522 based Time Attendance System Using Arduino Board. When you swipe an RFID tag next to the RFID reader, it saves the user UID and time in an SD card. It also shows if you are late or in time accordingly to a preset hour and minute. For this, we are interfacing the MFRC522 RFID SPI module with Arduino. We are also interfacing SD Card Module as a Data logger where the data is saved in text format. Similarly, RTC Module DS3231 or DS1307 is used to store time information.

Keywords: Arduino board, Security systems, I2R Sensor, Jumpers.

PAPER ID: I181

CALL DETECTOR CIRCUIT USING PCB

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Abstract: Call Detector Circuit are useful electronic circuits that can detect the presence of any transmitting RF mobile device nearby and gives a visual indication with respect to it. Basically, Cell-phone detector is a Frequency Detector or a Current Voltage Converter Circuit. With the development of communication technology, the requirement for cell phones has expanded dramatically. A cell phone generally transmits and receives indicators in the frequency range of 0.9 to 3GHz. We can detect the presence of phone by RF. By using PCB we can design the call Detector Circuit.

Keywords: PCB, Call Detector, Radio Frequency..



PAPER ID: I182

A SMART HOME SECURITY SYSTEM USING IOT

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Abstract: In today's world, there is an increasing demand for security systems that provide both high-level security and convenience to users, particularly for securing homes. People are now seeking advanced security systems that can effectively enhance their safety and offer them peace of mind. The goal of this project is to design an advanced security system comprising an automatic door lock mechanism and an intruder alert system that uses facial recognition technology. By recognizing authorized faces, the system will prevent unauthorized individuals from gaining access to homes and buildings. Any attempted unauthorized access will trigger the intruder alert system, which will immediately notify the concerned authorities. The proposed system will significantly improve the security measures in homes and buildings, reducing the risk of burglary and theft. Moreover, it will provide the users with enhanced convenience and peace of mind.

Keywords: PIR sensor, IoT, RFID, Intrusion, Wi-Fi, Home automation.

PAPER ID: I183

APP DEVELOPMENT FOR STRESS MANAGEMENT

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Abstract: Nowadays, stress is a growing problem, which affecting many people all over the world and in the most times has negative results. According to the World Health Organization mental health problem and stress-related disorders are the biggest overall cause of early death in Europe and for that reason it is important for people learn how to deal with it. Stress management is a wide spectrum of techniques aimed at controlling a person's level of stress, especially chronic stress, usually for the purpose of improving everyday functioning. Mobile applications for mental health have a potential to be effective in monitoring or improving symptoms of certain mental disorders, such as anxiety, stress, depression. Our idea of creating this mobile app contains three modules. First module comprises video-based activities and mind relaxing books. Next module is that they interact with strangers and last module is the person can consult with a psychiatrist. A happy mood and a positive outlook have both been linked to decreased stress. The tool used for app development is MIT APP INVERTOR. MIT App Inventor is an online platform designed to teach computational thinking concepts through development of mobile applications. It uses a block-based programming on Google Blockly and inspired by languages such as Star Logo TNG and Scratch. To aid in development and testing, App Inventor provides a mobile app called the App Inventor Companion that developers can use to test and adjust the behavior of their apps in real time. Components are core abstractions in MIT App Inventor. Our mobile wellbeing app represents a promising approach to encourage stressed people for healthy lifestyle anywhere at any time.

Keywords: Android App, MIT App Inventor, Stress Management.

**PAPER ID: I184****IOT BASED FOOD SPOILAGE DETECTION USING ARDUINO**

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Abstract: In the modern era of technology and with increasing dependency on smart techniques like mobile phone, there is requirement of solving daily life tasks in a quick and easy ways. The smart technology is becoming then end of hour to take control over the different tasks at home and industries. This paper is based on food detection system using Arduino. The system proposed is based on detection and recognition algorithms. The main function of the algorithm is to automatically detect the smell and generates message trouser that the food is spoiled. The paper deals with the technologies that use Arduino which employs the programming and sensors. The key feature of computer vision is Arduino for reasons like marketability & law-abiding apps. And secondly after lot of research the accessibility of realistic technologies. This area of research is to find an important place among different type of researchers and scientists like computer, food & different organizations. The microcontroller panel has the capability to perform functions which include interpreting inputs and outputs and make the sensor to activate. Generally, food is stored in the refrigerator that lowers down the bacteria rate of production. Certain items which are perishable or not used for long term storage are to be detected and informed to the user. This paper is basically discussed to solve the food spoilage through sensors by continuously sensing the signals from the food and also sending the alert message to the registered mobile phone.

Keywords: Spoiled food detection, Arduino, MQ3 gas sensor, DHT-11 Sensor, LCD display, WiFi ESP8266, LED.

PAPER ID: I185**DATA ANALYTICS IN RENEWABLE ENERGY**

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Abstract: This system shows a Data Analytic of renewable energy. This dataset is very extensive on Energy and is the collection of key metrics. Data analytics on renewable energy helps us to know about the current availability of energy sources required for future use. For that we have done our project using Jupiter notebook. Nowadays the renewable energy gets degraded by maximum uses of renewable energy on industries and we are facing many difficulties like insufficient of energy for production. To avoid that condition, we are going to create a data set based on all types of renewable energy with corresponding countries. The Jupiter notebook is ability to collect data and to properly use it for better decision-making is a key feature. The renewable energy sources like wind energy, solar energy, geothermal energy and biothermal can be used to overcome energy shortage in India. Today, renewable account for about 33% of India's primary energy consumptions. India is increasingly adopting responsible renewable energy techniques and taking positive steps towards carbon emissions, cleaning the air and ensuring a more sustainable future. The Jupiter notebook is ability to collect data and to properly use it for better decision-making is a key feature. In this paper, efforts have been made to summarize the availability, current status, major achievements and future potentials of renewable energy options in India. This paper also assesses specific policy interventions for overcoming the barriers and enhancing deployment of renewables for the future.

Keywords: Renewable Energy, Data Analytics.



PAPER ID: I186
GAS LEAKAGE ALERT SYSTEM

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Abstract: A carbon monoxide(CO) leakage alert system is designed to detect the presence of carbon monoxide gas in a given environment and alert individuals of potential danger. The system uses MQ-7 Gas Sensor Module for Carbon Monoxide monitor and identify any levels of CO beyond the safety threshold. When high levels of CO are detected, an alarm is triggered, and an alert message is sent to designated individuals or emergency services. The system can be used in various settings, including residential homes, commercial buildings, and industrial facilities, to prevent CO poisoning and ensure the safety of occupants. A carbon monoxide leakage alert system is an essential tool for detecting and preventing carbon monoxide poisoning, a potentially life-threatening situation.

Keywords: CO, MQ-7 Gas Sensor.

PAPER ID: I187
SMART LOST AND FOUND SYSTEM

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Abstract: The proposed lost and found system aims to streamline the process of reclaiming lost items by providing a centralized and organized platform for both the finder and owner of the lost item. The system involves the placement of a designated box where individuals who find lost items can deposit them, along with an appropriate entry of the item's name. This allows the owner of the lost item to quickly and easily locate it when they come to retrieve it. In order to retrieve their lost item, the owner must first check the box for their item's name and provide identification to confirm ownership. This helps ensure that the item is returned to the rightful owner and not taken by someone else. By providing a simple and effective system for retrieving lost items, the proposed lost and found system aims to reduce the time and effort required for both the finder and owner of the lost item. This system can be implemented in a variety of settings, such as schools, airports, and public spaces, where lost items are frequently reported. It can also be adapted to include additional features such as a database of lost and found items, or a notification system that alerts owners when their lost item has been found. Overall, the proposed lost and found system has the potential to make the process of reclaiming lost items more efficient and convenient for both the finder and owner of the lost item. This could have a positive impact on the overall experience of individuals in public spaces and reduce the burden on staff who handle lost and found items.

Keywords: Centralized, designated box, identification.



PAPER ID: I188

SMART NOTICE BOARD

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Abstract: Notice board is an essential information displaying system in our day to day life. We can see notice boards by papers in various places like, educational institutions, railway stations, offices etc. So, we can say that Notice boards are the places to leave public information such as advertisements, announcement of various events which provide attention to the public. Few of the common problems by using the current noticeboard, it consists of printing documents and then physically a person goes to the location of the board and changes the notice and organizes them in the required order. This notice boards requires pins, hence with every new notice paper, pins and clips have to be maintained as well. It takes time and large amount of human labor to well maintain a noticeboard. It will consume a lot of time and also the usage of man-power. In conventional Analog type of notice boards, paper is the main medium for the exchange of information. We know that information counts are large and uncountable. So, there is a usage of huge amount of paper for displaying that uncountable information. The problems faced by the wooden or conventional type notice boards can be solved by the implementation of our digital notice board. It will bring an advanced way of passing notices around the world in a much easier and efficient way. It does not consume a large time and man power. We use and make an efficient notice board which not only displays the message on an LCD, but also speaks the message out through a speaker. Also, only respective person can send the information to the display. This system is brought forward to tackle problems like disabilities like not being able to hear or see. Unlike a regular notice board, our system provides the information to all kinds of people. In this paper, we propose a new concept of noticeboards based on Internet of Things (IOT) technology that make the process of displaying a notice very efficient and easy process. To update a board, a person is needed to log into our system and write message.

Keywords: LCD display, IoT.

PAPER ID: I189

WOMEN SECURITY WITH ALERT SYSTEM BASED ANDROID APP

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Abstract: The security of women is a critical issue faced by society. Crimes against women such as eve teasing, sexual assaults, domestic violence are increasing in number day by day. When it comes to security concerns, a smart phone can be one the easiest way of gaining help. This project strives to create an android app which can help to protect women in any situation she might face in her day-to-day life. We have created a simple Android application which comprises various safety measures which can be used by women with a few clicks on the screen, to get quick and easy access to help or to avoid and escape a harmful situation. It uses GPS location tracking to provide a simple and fast way for the registered contacts to know that the user is in trouble and for them to reach the user easily. It also provides safety features such as a voice recording which can help a woman or the police for identification or situational evidence, a siren to alert the public of any misbehavior, emergency helpline numbers which can be used to directly connect via call to emergency services according to the situation faced by women for their safety.

Keywords: SOS, voice recorder.

**PAPER ID: I190****IOT BASED COAL MINE SAFETY MONITORING AND ALERTING SYSTEM***L.Ramesh**Assistant Professor**K.Sathishkumar**UG Scholar**R.Selvakumar**UG Scholar**T.Sridhar**UG Scholar**S.Vigneshwaran**UG Scholar**Department of Electronics and Communication Engineering**M.Kumarasamy College of Engineering, Karur*

Abstract: Safety is the most vital part of any type of industry. In the mining industry safety and security is a fundamental aspect of all. To avoid any types of accidents mining industry follows some basic precautions. Still accidents take place in underground mines due to rise in temperature, increased water level, and methane gas leakage. Here we provide safety to worker. When worker in danger he can press panic switch inform security. To enhance safety in underground mines, a reliable communication system must be established between workers in underground mines and fixed ground mine system. The communication network must not be interrupted at any moment and at any condition. A cost effective Zigbee based wireless mine supervising system with early-warning intelligence is proposed in this project. Worker status can be monitor over IOT. The average geothermal gradient of the coal-bearing strata is $2.88\text{ }^{\circ}\text{C}/100\text{ m}$ while the average geothermal gradient of the non-coal strata is $2.52\text{ }^{\circ}\text{C}/100\text{ m}$. The average surface temperature gradient of the coal strata is $3.23\text{ }^{\circ}\text{C}/100\text{ m}$ and the average floor temperature of Coal Seam 3 is $41.38\text{ }^{\circ}\text{C}$. The oxygen content of coal ashes ranges from about 40 to 54%. Clearly, in determining the organically bound oxygen in coals, not only the oxygen in the water removed as moisture from “as received” samples, but also that in the mineral matter in the dry coal, should be subtracted from the total. Mine air should not contain less than what percentage of Oxygen is 19.5%.

Keywords: Coal Mine Safety, Monitoring System, IOT, ZigBee, Smart Helmet.

PAPER ID: I191**CLASSIFICATION OF BABY CRIES USING MACHINE LEARNING ALGORITHMS***S.Mohanraj**Assistant Professor**P.Srivishnu**UG Scholar**C.Suvetha**UG Scholar**S.Varshayini**UG Scholar**R.Vignesh**UG Scholar**Department of Electronics and Communication Engineering**M.Kumarasamy College of Engineering, Karur*

Abstract: In this Paper we Predicting child cry, predicting when a child will cry can be challenging because there are many factors that can contribute to a crying baby. With the help of machine learning algorithms, it is possible to develop a predictive model that can identify the reason for baby crying. To develop a predictive model for child crying, you would need to gather a dataset of recordings of crying episodes and non-crying episodes. You would also need to collect data on various factors that could contribute to crying, such as the child's age, feeding patterns, sleeping patterns, and other environmental factors. Once you have collected your dataset, you can use machine learning algorithms such as CNN to train a predictive model. The model will learn to identify patterns in the data that are associated with crying episodes and use these patterns to make predictions about whether a child is likely to cry and with careful data collection and the use of machine / Deep learning algorithms, it is possible to develop a predictive model that can be useful for parents and caregivers who want to prevent crying of baby.

Keywords: Child monitoring, CNN, Predicting.

**PAPER ID: I192****LEAF DISEASE CLASSIFICATION USING MACHINE LEARNING***S.Mohanraj**Assistant Professor**K.Sowmiya**UG Scholar**V.Suhashraj**UG Scholar**S.K.Tarun**UG Scholar**J.S.Kavin Adhithiya**UG Scholar**Department of Electronics and Communication Engineering**M.Kumarasamy College of Engineering, Karur*

Abstract: A quick and accurate crop leaf detection is more important to increase the agricultural yield in an eco-friendly manner. Preventing and monitoring leaf diseases plays crucial role for providing nutritious food. Since they may damage the plants, decrease the food supply and chain while also raising food prices. We resent an overview of recent research in the field of leaves of the plant disease classification using Machine learning (ML). This page includes a survey of studies that presented different approaches, assesses them in terms of dataset, number of photos, number of classes, algorithms utilized, etc. Convolutional neural network (CNN) models were used, and success was had overall. The best algorithms are then recommended for use in common systems, mobile/embedded devices, drones, robots, and unmanned aerial vehicles (UAV). We talked about the performance metrics used, highlighted some of the drawbacks, and reviewed the work that needs to be done in the future to expand the real-time automated crop leaf disease detection system. In order to eventually achieve quick and precise disease identification, this data collection will help in the development and application of machine learning-based automated plant disease categorization algorithms. For a while, we keep adding pictures to the pilot data set. For next Kaggle competitions and to investigate more sophisticated techniques for disease categorization and quantification, a larger, more thorough expert-annotated data set is needed.

Keywords: CNN model, Image classification.

PAPER ID: I193**CREDIT CARD FRAUD DETECTION USING MACHINE LEARNING***S.Arunprathap**Assistant Professor**Y.Sudharsun**UG Scholar**G.Sukeendhar**UG Scholar**K.Mokith**UG Scholar**E.Naveen**UG Scholar**Department of Electronics and Communication Engineering**M.Kumarasamy College of Engineering, Karur*

Abstract: Due to the rapid growth of the E-Commerce industry, the use of credit cards for online purchases has increased dramatically. In recent years, credit card fraud is becoming a major complication for banks as it has become very difficult for detecting fraud in the credit card system. To overcome this hardship Machine learning plays an eminent role in detecting the credit card fraud in the transactions. Modeling prior credit card transactions with data from ones that turned out to be fraudulent is part of the Card Fraud Detection Problem. In Machine learning the machine is trained at first to predict the output so, to predict the various bank transactions various machine learning algorithms are used. The SMOTE approach was employed to oversample the dataset because it was severely unbalanced. This paper the examines and overview the performance of K-nearest neighbors, Decision Tree, Logistic regression and Random forest, XGBoost for credit card fraud detection. The assignment is implemented in Python and uses five distinct machine learning classification techniques. The performance of the algorithm is evaluated by accuracy score, confusion matrix, f1-score, precision and recall score and AUC-ROC curve as well.

Keywords: Credit cards, Logistics, Support vector machines, Decision trees, Data mining, Bayes methods, Neural networks.



PAPER ID: I194

INVESTIGATION OF COMPACT QUAD BAND ANTENNA LOADED WITH HEXAGONAL SRR METAMATERIAL FOR UWB APPLICATIONS

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Abstract: Many methods have been suggested during the past ten years to enhance the performance of the antenna. The use of metamaterials in antenna structure is one such method. A subclass of antennas known as metamaterial antennas makes use of metamaterials to improve the performance of electrically tiny or downsized antenna systems. The word "meta," which comes from Greek, means "beyond," and these materials offer qualities not found in common materials. For use in wireless access technologies, a suggested antenna includes slots and split-ring resonator (SRR) metamaterial unit cells to achieve quadband operational characteristics. UWB is a fundamentally different communication method compared with main stream methods like Wi-Fi. Increasing bandwidth can be done using the SRR Metamaterial. UWB uses very low power and the high bandwidth is ideal for delivering a lot data from transmitter to other devices.

Keywords: CST Software, quad band, UWB, meta.

PAPER ID: I195

DESIGN OF TRI-BAND ANTENNA LOADED WITH HEXAGONAL METAMATERIAL FOR UWB APPLICATIONS

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Abstract: Over the last decade, numerous techniques are proposed to improve the performance of the antenna. One such technique is the use of metamaterials (MTMs) in antenna design. Metamaterial antennas are a class of antennas which use metamaterials to increase performance of miniaturized (electrically small) antenna systems. "Meta" a Greek word defines "beyond" the materials provide properties beyond conventional materials. A multiband antenna with the incorporating complementary split-ring resonator (CSRR) metamaterial unit cell and slots to achieve triband operational characteristics for application in wireless standards is proposed. The type of feed preferred is Coplanar waveguide (CPW). The triband coplanar waveguide fed metamaterial antenna is proposed. The proposed antenna serves the criteria for multiband applications with an additional feature of increased bandwidth at the zeroth mode. The average efficiency of the proposed design is more than 70% for all resonant modes. The radiation characteristics (gain/efficiency/patterns/impedance matching) are shown in the stable and improved form at achieved wireless modes.

Keywords: CST Software, Triband, VSWR, Return Loss, Gain.



PAPER ID: I196

ELECTRICITY THEFT DETECTION USING IOT

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Abstract: Electricity theft is a significant problem faced by utility companies, which results in financial losses and jeopardizes the reliability of the power supply. In countries like India, these situations are more often, if we are ready to prevent these thefts, we will save a lot of power. The electrical power theft detection system is used to detect unauthorized tapping on distribution lines. Implementation of a neighborhood of this system might be a distribution network of the electrical power supply system. In this project, we propose an electricity theft detection system using IoT technology. The system consists of a smart meter, a microcontroller, and a wireless communication module. The smart meter collects the energy consumption data and sends it to the microcontroller. The microcontroller analyzes the data to detect any anomalies in energy usage. If the system detects any abnormal energy consumption patterns, it sends an alert to the utility company to investigate further.

Keywords: Smart meter, Microcontroller, IoT, Wireless module, Thermal imaging cameras.



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PAPER ID: I197
BLUETOOTH BASED NOTICE BOARD

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Abstract --- This deals with an innovative rather an interesting manner of intimating the message to the people using a wireless electronic display board which is synchronized using the Bluetooth technology .Now-a-days information displaying is going digital with a high speed. This will help us in passing any message almost immediately without any delay just by sending a SMS which is better and more reliable than the old traditional way of passing the message on notice board .This proposed technology can be used in colleges many public places, malls or big buildings to enhance the security system and also make awareness of the emergency situations and avoid many dangers. Using Bluetooth module display the message onto the display board. The main objective of this paper is to develop a wireless notice board that displays messages sent from the user. Notice Board is primary thing in any institution/ organization or public utility places like bus stations, railway stations and parks. In the last couple of decades, communication technology has developed by leap sand bounds. It has already established its importance in sharing the information right from household matters to worldwide phenomena. In this paper, we present the development of an SMS controlled E-notice board which can be updated automatically and remotely. The system was implemented using a BLUETOOTH Module IC controlled by a Microcontroller and an LCD display.

Keywords—LCD display , Arduino, Bluetooth HC05

PAPER ID: I198
AUTOMATIC ATTENDENCE REGISTER SYSTEM

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Abstract - An automatic attendance system is an educational ERP system that records the students' and faculties attendance in an institution. Unlike the conventional attendance system, the automatic attendance software enables the faculty to record, store, and monitor students' attendance history & manage the classroom efficiently. In this project using face recognition the attendance will be monitored by face shape, eye edges and nose corners. All the data will be already pre-inbuild and store in database. If student entered in the classroom the faces of the student will be captured and the features of the particular student will be checked with the pre-inbuild data's in the database. If the data's in the database is matched, the system will mark as present for the student else the system shows no data is matched with the data's in database. This system will be useful to take attendance in schools and colleges.

Keywords- Attendance register, python module, database.

PAPER ID: I199**DESIGN AND IMPLEMENTATION OF AN AUTOMATIC CHANGE OVER SWITCH FOR INDUSTRIAL APPLICATION**

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Abstract- An automatic phase change over switch is designed primarily to disconnect load from its power source and transfer it to a standby source say generator, in case there is a power outage. This operation connects the power supply from the generator to the load after a predetermined time interval. This is intended to normalize the current from the generator. Switching is possible through the use of the relays. The switching process is done in a controlled manner so as to prevent the false starting of generator at very short power outages. Once the supply is restored, the load is transferred back to mains supply. The entire process is controlled by a control unit that keeps sensing to detect that whether the main supply is available or not. Most households, offices, small and medium scale enterprises (SMEs) and multinationals depend on the electrical generator as alternative power supply, hence the need for an automatic changeover switch to facilitate automatic changeover between the mains supply and a generator. Thus, this project sets to present the design and implementation of an automatic changeover switch with a generator trip-off mechanism. The system uses relays, integrated circuits, transistors and electromechanical devices. The design was simulated with the aid of Multisim software and the prototype circuit was implemented. The experimental results from the prototype corroborate with the stimulated results.

Keywords - Power supply, Automatic switch, Trip-off mechanism, Multisim, Electro-mechanical devices.



PAPER ID: I200
AUTOMATIC TICKET DISTRIBUTER

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Abstract - Bus transportation is one of the main transportation systems in India. The passengers are increasing day by day, so it is important to make their journey more comfortable and easier. Therefore, we are introducing a system called E-Ticket which helps the passengers to get the ticket in one swipe. The system contains components like Arduino, LCD, Sim Module, RFID Reader/Writer. When the passengers swipe the card while they are entering and exit the location is read and the distance will be calculated and the amount is directly paid through net-banking. The information acknowledged to the passengers to their mobile phone and receipt. The system is also used to calculate the number of passengers inside the bus.

Keywords- Arduino, LCD, Sim Module, RFID Reader/Writer.

PAPER ID: I201
BANDWIDTH ENHANCEMENT OF PATCH ANTENNA FOR ULTRA WIDEBAND APPLICATION

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Abstract - Wireless technology is one of the main areas of research in the world of communication systems today and a study of communication systems is incomplete without an understanding of the operation and fabrication of antennas. This was the main reason for our selecting a project focusing on this field. In this project a simple structure of Ultra-Wideband (UWB) antenna is proposed. The antenna offers excellent performance for UWB system, ranging from 3 GHz to 10 GHz. The antenna exhibits a 10 dB return loss bandwidth over the entire frequency band. The antenna is designed on



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FR4 substrate and fed with 50 ohms micro-strip line. This antenna is composed of a modified shaped patch with a partial slot ground plane and a height of 1.6 mm that shields the low-cost substrate material FR-4 with a relative permittivity of 4.4 and loss tangent of 0.002 that makes it suitable for UWB operations. 50Ω microstrip transmission line used as feed current and observe the simulated results in HFSS software. With a decent impedance match and constant radiation pattern the presented antenna has comprehensive bandwidth of 14 GHz (0.96 GHz to 15 GHz) which makes the antenna appropriate for various ultra-wideband applications. It is found that the frequency band depends on the width of the partial ground width, the width of the feed line and position of the feed line.

Keywords – UWB, HFSS, Wireless technology.

PAPER ID: I202 SMART WHEEL CHAIR

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Abstract- Many people are suffering of temporary or permanent disabilities due to illnesses or accidents. For cases of difficult or impossible walking, the use of a wheelchair is becoming essential. Manual or electrical wheelchairs are satisfying for most of the low and medium level disability case where patients can use the wheelchair independently. However, in severe cases, it is difficult or impossible to use wheelchairs independently. In such cases wheelchair users often lack independent mobility and rely on somebody else handle the wheelchair. Researchers involved in wheelchair are aiming at designing smart wheelchairs to solve such problems. This paper is to review the recent studies on smart wheelchair systems. It aims to evaluate the current available technologies and to discuss new future directions for our ongoing research project.

Keywords-Home Automation, Bluetooth module, Voice Recognition Mode, Disabilities.

PAPER ID: I203 EARTHQUAKE DETECTION USING ML CONCEPT

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Abstract- Earthquakes are one of the major disasters affecting major part of the earth. The geographical statistics of the India have found and show that almost 54% of the land is vulnerable to earthquake .Then the circum-pacific seismic belt is found along the rim of pacific ocean is the place which faces the largest amount of earthquake nearly this place face the 81% of largest earthquake in the world .In our project we are going to find the possibilities of upcoming earthquake in the places were earthquake have already occurred through image processing in open-cv .By Image processing the images of the earthquake scale reading there are three scale reading to measure earthquake the three magnitude scales (ML,MB and MS). The moment magnitude scale captures all the different seismic waves from an earthquake, giving a better idea of the shaking and possible damage. The goal of this project is to predict the magnitude of earthquake for a region given by the user with the help historical data. As we know that the destruction caused by earthquakes is massive and causes loss of lives every year. There are several ways Geologist use to predict earthquakes. The results so far have been successful in telling where an earthquake has more probability to occur but when it will happen is still under research. This application will ask the user to enter the range of latitude and longitude for the region where they want to know if earthquake can occur. Based on these co-ordinates it will use the data set and apply Regression algorithms to make the prediction.

Keywords: *Earthquake, image processing, dataset, regression.*

**PAPER ID: I204
IOT BASED FINGERPRINT DOOR LOCK SYSTEM**

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Abstract — Traditional key based door locks are now slowly going out of the trend and Electronically controlled door locks are getting popular in the market with increasing IOT based Environment. People are now building IOT controlled home which not only gives easiness to control. The devices but also add more security to you. In this project, we are going to build a Biometric Lock using Arduino uno with Bluetooth Module, Solenoid Lock, and Android Phone. Apart from Hardware, a mobile application is also used to scan and verify the fingerprint and send the Confirmation ID to Arduino through Bluetooth module hc-05. Here we will use Smart Phone ,Finger Print Sensor To lock and unlock the door lock. All the functions are controlled by the Arduino. Fingerprint of a person is unique and it improves Security. The input Fingerprint print is matched with the saved data and the door is unlock if they match , else the door lock will not open.



Keywords — Arduino uno, Bluetooth module hc-05.

PAPER ID: I205
IR BASED IRRIGATION SYSTEM USING ARDUINO

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Abstract— Automated irrigation system using arduino microcontroller proposes an automated irrigation using arduino microcontroller system which is effective and can be used farm field or average home garden. the proposed system is developed to automatically water the plants. the automated irrigation system is fully functional prototype which consist of pump, relay and microcontroller . Relay module which used to control the on and off switch of the water pump. the relay model will switch on the water pump automatically to start the watering process. The growing water demand has raised serious concern to the future of irrigated agriculture in many parts of the country. Therefore, the knowledge of crop water demand is an important practical consideration to improve the water use efficiency in irrigation practices. The traditional irrigation systems provide unnecessary irrigation to one part of a field while leading to a lack of irrigation in other parts. Changing environmental conditions and shortage of water have led to the need for a system which efficiently manages irrigation of fields. The aim of this paper is to review the need of soil moisture sensors in irrigation, sensor technology and their applications in different aspects of agriculture

Keywords—IR receiver module, Arduino, smart irrigation, IR sensor

PAPER ID: I206
ARDUINO BASED WEATHER STATION

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Abstract— A weather station is a facility located either on land or sea consisting of instruments and equipment which can be used to measure atmospheric conditions so as to provide weather forecasts information and to study the weather. The existing instruments used for measuring the weather elements are expensive which led to the development of a low-cost Arduino-based weather station. The developed low-cost weather station consists of three separate modules which are data collection, data storage, and data communication. These modules communicate serially with each other and are controlled by three separate microcontrollers (Arduino Uno). The data collection module is interfaced with a set of sensors that collects temperature and humidity. The weather data were viewed in real-time through a graphical user interface (GUI) located at the central station. The developed weather station was able to measure the temperature and humidity of a controlled environment, giving the reading at interval of five minutes. It was observed that the average temperature from results obtained(27.360C) with the developed low-cost Arduino based weather station falls within the range of the Accurate weather readings (24.00-28.000C). Also, the average humidity of the developed low-cost Arduino based weather station (80.41%) falls within the range of the Weather spark humidity (78-82%). Therefore, this system can be adopted as a weather station facility. The design can be extended to be web-based in the future to make it available worldwide.

Keywords- *Arduino Uno, Humidity, Temperature, Weather Station.*

PAPER ID: I207
GSM BASED SUBSTATION MONITORING AND CONTROLLING SYSTEM

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Abstract-The purpose of this project is to acquire the remote electrical parameters like Voltage, Current and Frequency and send these real time values over GSM network using GSM Modem/phone along with temperature at power station. User can send commands in the form of SMS messages to read the remote electrical parameters. This system also can automatically send the real time electrical parameters periodically (based on time settings) in the form of SMS. This system can be designed to send SMS alerts whenever the Circuit Breaker trips or whenever the Voltage or Current exceeds the predefined limits. This project makes use of an on-board computer which is commonly termed as microcontroller. This on-board computer can efficiently communicate with the different sensors being used. The controller is provided with some internal memory to hold the code. This memory is used to dump some set of assembly instructions into the controller. And the functioning of the controller is dependent on these assembly Instructions. The controller is programmed using Embedded C language. Monitoring and controlling of substations are essential task for supplying healthy power to the consumers in this automated era. Depending on the voltage levels and end users, there are transmission or distribution substations those supply electrical power to various loads. Remote monitoring and control make these substations to be operated through wireless communication technologies like GSM. This project makes use of an onboard computer which is



commonly termed as microcontroller. This onboard computer can efficiently communicate with the different sensors being used.

Keywords-GSM Module ,On-board computer ,Substation ,Microprocessors and Controllers.

PAPER ID: I208

IOT BASED WEATHER MONITORING SYSTEM USING ARDUINO

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*Abstract-*Arduino measures 4 weather parameters using respective 4 sensors in IOT Weather Reporting System Project. These sensors are a temperature sensor,humidity sensor, light sensor, and rain level sensor. These 4 sensors are directly connected to Arduino Uno since it has an inbuilt Analog to Digital converter. Arduino calculates and displays these weather parameters on an LCD display. Then it sends these parameters to the Internet using IOT techniques. The process of sending data to the internet using Wi-Fi is repeated after constant time intervals. Then the user needs to visit a particular website to view this data. The IOT enabled weather monitoring system project connects and stores the data on a web server. Thus the user gets Live reporting of weather conditions. Internet connectivity or Internet connection with Wi-Fi is compulsory in this IOT weathermonitoring project. IOT – The Internet of Things proves really effective in such scenarios. We can upload these weather parameters data to the cloud using internet connectivity over a WiFi module through wireless communication and using the Internet of Things. Thus this project is also categorized under Wireless communication projects.

Keywords-Arduino Uno, Raspberry Pi, LCD Display.

PAPER ID: I209
LIVE PEOPLE COUNTER

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Abstract -The system is designed for optimum energy usage and is very beneficial in case if we want to count the number of people going to attend a particular event or any function thereby helps in collecting data by counting the number of people. This is done by simply incrementing (also decrementing) the counter. The system uses InfraRed Sensor pairs in order to fulfil this purpose and thus saves a large amount of energy. Each pair consists of 2 sensor pairs placed at a certain distance from one another in the opposite direction. The IR transmitter is used to transmit IR rays straight to the receiver which receives the input and feeds this to an Arduino nano Microcontroller. As soon as a person enters the area where the system is placed, it is detected by the IR sensor module and this info is fed to the microcontroller. The microcontroller process this input received. At this time the system also counts the number of people present and increments a counter on each arrival, this count is displayed on a LCD display.

Keywords-Arduino Nano,Live Counter,People,Infrared Sensor.

**PAPER ID: I210
MACHINE LEARNING BASED VEHICLE PERFORMANCE ANALYZER**

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Abstract — In today's world the production of automobile vehicle is immense and the companies producing the vehicle are numerous, because of this situation the identification of best vehicle based on the performance is difficult. To make this easy for every people, we attempt to make a performance analyser which will help of people to find the best vehicle based on the performance as key feature. Machine learning algorithm used to work in the performance analyser with Python. We collect the data set based on their vehicle characters and people expectation. In this dataset of vehicle are training model from various resources. The dataset describes the various characteristics and features of the vehicle which are used for training the model. In this project is used for the purpose of classification of vehicle based on the performance. The model obtained from the project and the people to select the right vehicle based on their own requirement.

Keywords — Automobile vehicle, Machine learning algorithms, Data Collection, Python, etc



PAPER ID: I211
OBSTACLE AVOIDING CAR

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Abstract— Obstacle detection and avoidance can be considered as the central issue in designing mobile car. This technology provides the robots with senses which it can use to traverse in unfamiliar environments without damaging itself. In this paper an Obstacle Avoiding car is designed which can detect obstacles in its path and around them without making any collision. The integration of three ultrasonic distance sensors provides higher accuracy in detecting surrounding obstacles. Depending on the input signal received, the micro-controller redirects the robot to move in an alternate direction by actuating the motors which are interfaced to it through a motor driver. This implementation was done using an ultrasonic wave sensor, which measures distance by sending pulses. Also, the movement of the servo motor (for sensor movement) and the DC motors (for wheel movement) are controlled by the motor driver shield in order to enable the obstacle avoidance function. The commands are sent to the Arduino microcontroller chip which serves as the main control of the robot car, as it controls the sensor and car movement. The implemented robot car was able to successfully detect and avoid obstacles within the line of sight of the Ultrasonic sensor used.

Keywords—Ultrasonic sensor, Motor drive, Arduino UNO, Motor, Wheel.

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SMART SHOES FOR VISUALLY CHALLANGED PERSONS

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Abstract — Good Vision is one of the gift from the God, vision enable a person to know about his surroundings. But Unfortunately millions of people are deprived of this gift. Lack of Vision add to low esteem in visually impaired person making them conservative because they are not able to interact with world in a manner others do. In taking all these point in consideration a cheap, friendly user wearable Shoe is proposed that aid blind people in doing everyday stuffs and make them self-Independent. This Shoe enable both partially and totally blind person to self-navigate in an unknown environment. The Proposed shoe comes with feature such as Obstacle detector sensor, Water Sensor, Wireless Charging, GPS Tracking. The model discloses an intelligent shoe for the blind to go out. The intelligent shoe comprises a vamp and a sole. The front end of the sole is provided with an ultrasonic sensor. The ultrasonic sensor is connected with a micro motor. The intelligent shoe has the characteristics that the intelligent shoe has an obstacle avoidance function. Smart shoes is a smart footwear technology. That uses the ultrasonic sensor and Arduino nano for sensing the object, thus it help the blind persons to move or travel safely.

Keywords — GPS Tracking, Obstacle detector sensor, Ultrasonic sensor, Arduino nano.