International Conference on

# Communication, Computing and Industrial Engineering

## (ICCCIE-2022)

Virtual Conference

26th & 27th April 2022

Organized By

**Department of ECE & CSE, NBA Accredited**
**IIMT College of Engineering,**
**Greater Noida ,India**

In Association with

**Institute for Engineering Research and Publication (IFERP)**

# Director's Message

**Prof. (Dr.) S. S. Tyagi**
Director

Greetings to everyone!

Welcome to the two days International Conference on “Communication, Computing and Industrial engineering”, through online mode on 26th & 27th April 2022.

To learn about the opportunities and professional development activities in this field one must take advantage of this conference.

Researchers from the field of engineering and technology will gather virtually for this enthralling meeting. As a result of coming together, this international conference will provide a platform to share knowledge and experiences, which will be a fantastic opportunity.
Best wishes for a successful conference and thanks to all organizers.
Good Luck.

**Prof. (Dr.) S. S. Tyagi**
Director

**Rudra Bhanu Satpathy**
Founder & Chief Executive Officer
Institute For Engineering Research and Publication.

On behalf of **Institute For Engineering Research and Publications (IFERP)** and in association with **IIMT College of Engineering, Greater Noida ,India**. I am delighted to welcome all the delegates and participants around the globe to IIMT College of Engineering, Greater Noida ,India In Association with for the **"International Conference on Communication, Computing and Industrial Engineering "(ICCCIE-22)"** Which will take place from **26th & 27th April 2022**
It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.
I congratulate the reviewing committee, coordinator (IFERP & IIMT) and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants for their virtual presence.

Sincerely,

Rudra Bhanu Satpathy

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# PREFACE

The **International Conference on Communication, Computing and Industrial Engineering (ICCCIE-2022)** is being organized by **IIMT College of Engineering, Greater Noida ,India** in Association with **IFERP-Institute For Engineering Research and Publication** on the 26th – 27th April, 2022.

The **"International Conference on Communication, Computing and Industrial Engineering"** was a notable event which brings Academia, Researchers, Engineers, Industry experts and Students together.

The purpose of this conference is to discuss applications and development in area of "**Communication, Computing and Industrial Engineering**" which were given International values by **Institute For Engineering Research and Publication (IFERP)**.

The International Conference attracted over 120 submissions. Through rigorous peer reviews 71 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

**ICCCIE-22**

# Convenor's Message

**Prof. (Dr.) Seema Nayak**
Convener and HOD ECE

Hello Everyone.

It gives me great pleasure to invite you to the International Conference on “Communication, Computing and Industrial Engineering), which will be held in virtual mode on April 26th and 27th, 2022. The conference is jointly organized by the department of Electronics and Communication Engineering, and department of Computer Science and Engineering.

This conference aims to bring together leading academic scientists, researchers, research scholars, and educators to exchange and share their experiences and research results on all aspects of latest advancements in communication, computing technologies and Industrial Engineering. This conference will provide an interdisciplinary platform to present and discuss the most recent innovations, future trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Electronics and Communication, Computer Science, Robotics, AI and Automation etc.

Papers submitted and accepted by the review committee of ICCCIE-2022, and will be published in peer-reviewed journals.

I hope that you will find the conference informative and enjoyable, and to take the opportunity to establish future international research collaboration, and that you will have a great time.

**Prof. (Dr.) Seema Nayak**
Convener and HOD ECE

# Convenor's Message

**Prof. (Dr.) K. Rama Krishna**
Conference Convenor& HOD, CSE Department
IIMT College of Engineering, Greater Noida

I am pleased to inform that the department of Electronics and Communication Engineering, and department of Computer Science and Engineering of IIMT College of Engineering Greater Noida are jointly organizing an International Conference (ICCCIE-2022) in virtual mode on "Communication, Computing and Industrial Engineering" from 26th April 2022 to 27thApril 2022.

I know that this conference is very relevant to present day scenario in the area Communication, Computing and Industrial Engineering. Events such as this play a vital part in facilitating professionals to share the latest developments and ideas in the fields of Communications, Computing, Robotics, AI and Industrial Engineering.

On behalf of the department and Institute, I would like to extend a warm welcome to the delegates from all over the India providing this opportunity to organize this online conference.

I wish all the participants best of luck and hope to have very useful research debates.

**Prof. (Dr.) K. Rama Krishna**
Conference Convenor& HOD, CSE Department
IIMT College of Engineering, Greater Noida

# KEYNOT MESSAGE

Sustainable Development is the new global mantra. Last few years have seen many unexpected challenges and created awareness regarding complete balanced and sustainable growth. Networking, Collaboration and Innovation are essential ingredients in providing knowledge and skilled economy.

I am delighted to be an active part of International Conference on Communication, Computing and Industrial Engineering (ICCCIE-2022) at IIMT College of Engineering, Greater Noida in association with Institute for Engineering Research and Publication (IFERP) to be held on 26th -27th April 2022. ICCCIE-2022 consists of **4** Tracks dealing with Advance Computing, Electronics and Communication, Computer Science and Engineering and Electrical and Industrial Engineering. This Conference would provide the impetus to Academicians, budding Researchers and Industry professionals for gain and exchange of latest Research trends in various Engineering domains.

I invite you to join me and various renowned experts of various areas for two days of Research trends, discussion on latest advancements and sharing ideas.

I look forward to meeting you all to be an active participant in this renowned Conference.

Best Wishes

**Dr. Sailesh Iyer**
Professor and Dean, CSE/IT Department, Rai School of Engineering, Rai University
President RU IIC and RU Nodal officer-GSIRF
Ahmedabad, India.

International Conference on

# *Communication, Computing and Industrial Engineering*

# (ICCCIE-2022)

## Virtual Conference, 26 th & 27 th April 2022

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# ABSTRACTS

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*International Conference on*
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**26th & 27th April 2022**

# Efficient Car Parking System Using IoT

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## Abstract
The concept of smart cities has gained a lot of traction in recent years. Smart cities are a concept that now looks to be feasible, thanks to the advancement of the IoT. In the realm of IoT, consistent efforts are being made to increase the efficiency of urban infrastructure. IoT is self-addressing issues such as traffic congestion, limited automotive parking spaces, and road safety. Throughout this article, we attempted to create an IoT based efficient parking system that can be applied anyplace, including malls, societies, and schools. The proposed excellent Parking system entails the deployment of an IoT module on-the-spot that will monitor and signalize the condition of accessibility of every parking place. Every automobile parked is protected thanks to a secure parking system. A high-level read of the system design is also described in the paper. The paper concludes with a discussion of the system's operation in the context of a use case that demonstrates the accuracy of the proposed model.

## Keywords
IoT, pic16f877a, car parking, IR




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# Innovative Approaches to Classical and Quantum Reflected Binary Code Generation using Pascal Triangle, Reversible N-Input C-Gate and Reversible N-Input Q-Gate

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**Abstract:** There are numerous classical approaches employed by researchers in the generation of gray code sequences, however currently there is no straightforward method or model for generating quantum gray codes. This paper seeks to present three innovative approaches to generating quantum gray codes. The first approach employs the principle of the Pascal triangle and vectors which are very important concepts drawn from the field of algebra. The second approach known as the "N-input Reversible C-Gate" is based on a reversible XOR gate, a vital concept in classical circuit model of computation. The third approach known as "N-input Reversible Q-Gate" is based on a controlled NOT gate which is a key concept drawn from the field of quantum circuit model of computation. Finally, we assess the performance of the proposed and existing approaches by measuring execution time in terms of number of bits and comparing the results. The Pascal triangle approach to quantum gray code generation requires a longer time to execute as the number of bits rises, according to simulation data and results. The evaluation also shows that the N-input Reversible C-Gate and N-input Reversible Q-Gate gate performs faster than that of the Pascal triangle approach and some of the other existing algorithms.

**Index Terms:**
Controlled NOT Gate, N-input Reversible C-Gate, N-input Reversible Q-Gate, Reversible XOR Gate

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# Pharmacy Information Systems: A Systematic Review

**[1]Peter Nimbe, [2]Prosper Kandabongee Yeng, [3]Isaac Kofi Nti, [4]Benjamin Asubam Weyori, [5]Samuel Boateng, [6]Adebayo Felix Adekoya, [7]Owusu Nyarko-Boateng, [8]Patrick Kwabena Mensah, [9]Mighty Abra Ayidzoe, [10]Faiza Umar Bawah, [11]Nicodemus Songose Awarayi, [12]Vivian Akoto-Adjepong, [13]Promise Ricardo Agbedanu, [14]Jacob Mensah, [15]Emmanuel Adjei Domfeh**

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**Abstract**— A pharmacy information system is a system that manages the supply and organization of pharmaceuticals and has a variety of purposes. It can work in tandem with the laboratory and an inpatient hospital's computerized physician order input system. It has some components beneficial and vital to the rendering of services to patients, consumers, or customers. It is a pivotal part of hospitals, clinics, medical centers, and community pharmacies. This paper presents an insight into pharmacy information systems (PIS) using the PRISMA technique with results registered and analyzed. The literature is analyzed based on some parameters or categorizations accompanied by graphical and tabular representations. A brief survey of PIS's in Ghana is also presented and gaps are identified. Subsequently, a framework or model is proposed to help improve the functionality of PIS's in Ghana

**Index Terms—**Pharmacy Information Systems, Medication Management Systems, Drug Dispensing, Inpatient and Outpatient Management, Pharmacy Information Network, Prescription Input




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# Accessible Healthcare Through Locally Available Technology

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**Abstract:** We are going to develop a web app where consulting doctors, ordering medicines, making appointments for the Lab tests and other health related facilities will be connected and centralized, thus allowing the patients to access facilities that wouldn't otherwise be possible. This application spans across multiple user types, including patient, doctor, diagnostics labs, and pharmacies, therefore covering all the bases required for an end-to-end system. Careful consideration has been given to the application's accessibility in rural areas, and has been designed in such a way that makes it easy, and sets it apart from all the competitors.

**Keyword:** Healthcare, Diagnostic Lab, Django, SQL

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# Authentication Techniques in eProcurement System: A Review Paper

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**Abstract:** E-government can provide citizen with better and/or more convenient services as oppose to traditional government services. Using electronic approach in completing a procurement process opens up a lot of issues regarding security. Transparent nature of the process at hand is requiring a sophisticated security system. Unauthorized access or different intrusion types are presenting a legitimate threat. Threats include unauthorized access, data leakage, malicious codes, phishing etc. Effective response to cyber attacks either natural or human-induced damages requires rapid analysis of attacks and other data acquired both before and after the event. Such information will enable emergency response services in preventing the attacks rapidly and to reroute traffic efficiently. Likewise, recovery efforts depend on the acquisition and analysis of timely knowing of the attack and type of attack that might indicate the presence of back door, malicious code etc. Different authentication techniques and alert systems in systems and databases containing base information that can be rapidly updated will assist in saving losses and reducing costs. This review paper in brief, presents the different authentication techniques in eProcurement system.

**Keywords:** Authentication, cyber criminals, cyber attacks, malicious codes




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# An Approach for the Prediction of Knee Osteoarthritis Symptoms and Severity Analysis

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**Abstract :**This paper represents a unique approach for determining the severity of knee osteoarthritis (OA) integrating radiographic (X-ray) and magnetic resonance (MRI) images. Our new method combines preprocessing, feature extraction using a Convolutional Neural Network (CNN), and classification using Long Short-Term Memory (LSTM). Manual cropping on the knee joint with dimensions of 400 × 100 pixels can be used for preprocessing. The Osteoarthritis Initiative (OAI), a public dataset with very promising results from the existing approach, was performed to analyze our approach. This dataset contains information regarding the KL grade assessment for both knees (right and left). The objective of this dataset is to generate public domain research tools to aid scientific evaluation of biomarkers for OA as a potential disease development endpoint. We tried three-fold cross-validation, where the first two-thirds of the data is used as training data and the last third is used as testing data. The data for the categories is rotated without overlap. The obtained findings show that the mean accuracy is 75.28 percent, and the mean cross-entropy loss function is 0.09. These results outperform all previous deep learning methods that have been used.

**Keywords:** Classification, CNN, LSTM, knee osteoarthritis, radiography.

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# Warehouse Location Problem in Defense Industry : A Real Application in a Related Organization

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**Abstract:** Countries' defense industries are the leading indicator of their global power. The defense industry is supported by the projects carried out and the systems developed. Warehouse is the place where the materials are kept until the customer order arrives so that the companies are viable and can respond appropriately to the internal/external customer demands. Therefore, in today's cost-effective environment, where technology is a very important factor in evaluating countries' defense forces, storage options with increased flexibility, a simplified supply chain with cost management, and optimal positioning according to deployment locations should be preferred instead of unwieldy warehouse concepts. In this study, the decision on the location of warehouses for logistic support during the warranty period of military vehicles manufactured and supplied to the armed forces by a defense company was made. It is aimed to maintain the highest level of sustainability of the military vehicles produced under the project during the warranty period after their delivery to the inventory by proposing the best solution to a real-life problem with high complexity, containing many data and constraints. In this context, the order of importance of the criteria was determined by the Analytical Hierarchy Process (AHP) first with the Super Decision V2.10 and then determined order of importance was included as a coefficient of the objective function in the Goal Programming (GP) model. As a result of solving the GP model using GAMS (General Algebraic Modeling System), it was decided to select the warehouses that provided the optimal results among the alternative warehouse locations in 9 different geographical locations. The significance of this research lies within the integrated usage of AHP and GP in defense industry when determining warehouse locations in accordance with the experts' opinions. Furthermore, a solution strategy was developed that will be the basis for the warehouse location decision in the defense industry projects already signed or to be signed.


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# Customer Segmentation Using K-Means Clustering

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**Abstract:** Customer Segmentation is an analysis customer interacting with the company and its product. Here the customer behavior depends on money they spend and the frequency of the buying. In order to grow business efficiently it is important to analyse the competition in the market and identification of customer pattern timely. To do so customers are divided into groups having different characteristics like customers that spend more money and are more frequent and the customers that spend less money and are less frequent than others customers. Using the above data companies can then outperform the competition in market by developing products and services according to the customer needs. The above analysis is done using the "k-means" clustering algorithm which is an unsupervised machine learning approach. K-means divides customer data into different clusters based in their spending habits.

**Index Terms:** Customer, Market, Competition, Clusters, Product, K-means clustering, Machine Learning.

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# Cost Effective PLC Based Liquid Filling System for Small Scale Industries

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**Abstract:** The prime goal behind this task is to build a PLC based automated miniature liquid filling plant which can be used in diary, soft drink, breweries or even paint manufacturing industry to fill in the required liquid products (placed in a single production line) in their respective bottles based on the detected colour bottle by the photo eye sensor. With the use of PLC as our control unit in our system, we will be assured of high accuracy in the filling process as it will maintain the same liquid volume in all bottles of the same size with nearly zero spillage during filling. The above cannot be achieved with a workforce manually filling the bottles one at a time continuously for 8 hours as monotony and fatigue will kick in. The PLC comes into action in such a scenario to automate the entire process and making the system efficient. Automation is the use of control systems and information technologies to reduce the need for human work in the production of goods and services . We will be using Allen Bradley Micrologix 1400 series PLC which is compact and space sufficient with built in I/O modules. The programming software is RSLogix 500 which is user friendly and supports ladder logic diagrams. Due to the simplicity of our system which it incorporates less number of sensors and actuators which are cheap and easily available as compared to the expensive sophisticated industrial instrumentation, the total cost of our system reduces drastically and becomes the best resolution for small scaled beverage industries to adopt automation in their production with less operational cost.

**Keywords:** PLC, MicroLogix 1400, Automation, Ladder logic.


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# PLC and HMI Simulation of Water Filtration System With Constantly Changing Process Variables

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**Abstract:** Most of the nations are becoming industrialised which creates a big demand for programmable logic controller (PLC) programmers and human machines interface (HMI) developers. Not even a startup industry will be willing to employ a personnel who do not have any professional work experience in programming PLC and designing HMI, this make fresh graduates to have no place in the industrial automation job market. Our research paper is on ladder programming of a simulation logic having constantly changing process variables mimicking a real time working environment of water filtration system with its full fledged HMI having multiple screens which can be loaded in the computer and running live in simulation softwares without any physical hardware connection to an actual PLC. The HMI will be talking and exchanging data with the program using virtual com ports. The above project can be used as a portfolio for fresh graduates to prove their competency in PLC programming and HMI development to the prospective hiring managers when they walk in for a job interview.Loading the project in front of the hiring team and letting them interact with the program will prove their programming skills and positively be considered for the job regardless of their zero work experience in an industry level.

**Keywords:** Programmable Logic Controller (PLC), Human Machine Interface(HMI), Automation

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# Crime Investigation in Social Media Users by using Natural Language Processing

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**Abstract :** Cyberbullying is a crime that happens on online social networks and messaging applications. Nowadays cyber-criminals are so intelligent and functioning in a cooperative way, which makes cybercrime an important subject for all over the world. A recent study shows that cyberbullying causes mental health issues, anxiety and stress which can be prevented if the comment or message is identified and removed on time. Social media has provided an important change in the way people talk in the recent trend of communication medium which provides an easy way of passing the information to others. It is a high possibility that criminals take advantage of these chances to do illegal activities. Identifying these criminals is a tiresome task by examining a huge amount of chat conversation to find evidence related to a criminal case and forensic tools have some restrictions. Machine learning became an important part of crime detection and prevention. A framework is proposed that extracts suspect data from a social media application to predict the probability of crime by using natural language processing techniques. Lexical model, NER based token classification model and Transfer learning model are proposed to encounter the problem. Moreover, evaluation results are attached to find out the efficiency of the models. A good accuracy rate of 90% is achieved and can be pushed furthermore with large datasets.

**Keywords :** Cybercrime; Online social networks; machine learning.




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# An Efficient Neural Network Approach for Plant Disease Detection

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**Abstract:**The plant is an essential factor of the environment, in the Indian agricultural industry and the economy of the country, hence the plant care is very important for the farmers, just like the people who are suffering from chronic diseases, the plants are also affected by various diseases caused by bacteria, fungi and viruses. Timely detection and cure of these diseases is essential to avoid destroying the entire plant. Various diseases can be detected with the deep learning method based on the model name "plant disease detection model".

Plant diseases are responsible for significant economic losses in the agricultural industry worldwide. Plant health monitoring is difficult to control the spread of diseases and implement efficient management.

The Convolutional Neural Network (CNN) model was developed to perform plant disease detection and diagnosis on healthy and diseased plant leaves through deep learning methods. Detect plant diseases by picture of plant leaves. Picture and send disease name and diagnosis to user.

This paper presents the detection of plants using image processing techniques for the automated vision system used in the agricultural field. For this approach, the CNN automatic classifier for learning-based classification is used with some training samples of these two categories. Later, Convolution Neural Network (CNN) is used with multiple levels of convolution and polling. The PlantVillage dataset is used to train the model.

The average accuracy rate of training samples intent by the CNN model was 91.04%. We have also used KNN Algorithm for image classification but we found CNN Algorithm best for image classification. Convolutional Neural Networks (CNNs) is the most effective neural network model being used for image classification problem.

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# Saline Monitoring and Control System

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**Abstract:** Saline is one of the most commonly used intravenous (IV) medicines in the treatment of critically unwell individuals. Intravenous (IV) saline treatment may help patients with serious illnesses. Because blood comes out of the vein as the saline bottle is emptied, the level of the bottle must be continuously watched. In hospitals, nurses and caregivers are in charge of ensuring that intravenous (IV) therapy is used extensively in the treatment of severely ill patients. It's critical to keep an eye on the saline bottle level since blood can leak into the bottle if it's empty and the needle isn't withdrawn. Nurses or caregivers are in charge of keeping an eye on the saline bottle level in hospitals. We created a cost-effective smart saline level monitoring system that combines sensors to minimize mishaps caused by caregiver ignorance and enable remote monitoring in telehealth services. for example, our gadget combines sensor technology and Internet of Things (IoT) technologies to minimize mishaps caused by caregivers' inexperience and to enable remote surveillance via telehealth services. This system monitors the saline level (if appropriate) of patients, and if the parameter exceeds a threshold value, the smart gadget closes the clamp to stop the reverse blood flow occurrence and alerts doctors or caregivers to take action to save the patients' lives.


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# A Proposed Scheme for Optimal Deployment of WSN Motes with Larger Coverage

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**Abstract:** Wireless Sensor Network (WSN) is an infrastructure-less wireless network that is deployed in many wireless sensors that is used to monitor the system, physical or environmental conditions. This system is a group of specialized transducers with a communications infrastructure for monitoring and recording conditions at diverse locations. Monitoring parameters are temperature, humidity, pressure, wind direction and speed, illumination intensity, vibration intensity, sound intensity, power-line voltage, chemical concentrations, pollutant levels and vital body functions. In this paper we are presenting the optimal way of deploying the WSN motes with the larger coverage.

**Keywords:** Wireless Sensor Network, Node Deployment, Improved Steiner Tree, Genetic Algorithm

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# A Proposed Scheme for Optimizing Travelling Salesman Problem Using Particle Swarm Optimization Technique

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**Abstract:** This paper proposes a new use of swarm optimization particles for the traveling merchant problem. We have developed special ways to solve TSP using PSO. We also proposed the method which is slightly changed with original code of PSO, and redefined other operators based on them, However, it still retains the most important features of the PSO that the entire masses are guided by pbest and gbest. According to some benchmarks in the TSP lib, it is proven that the proposed PSO works well even in 200 cities.in this way the paper designed a special PSO. Studies show that it can have good effects.

**Keywords:** Travelling salesman problem, Particle swarm optimization, cost, Nodes.




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# Cognitive Bot using LoRa

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**Abstract:** Surveillance of military areas using cognitive robot is transforming the telecommunications research. Cognitive robots are those which are endowed with intelligent behavior. Since we know network in terrorists areas is null or affected, we will be using latest technology i.e, LoRa (Long Range low power technology) for communication which can transmit data over a few kilometers of distance. LoRa is a new found technology that has already made an appearance in reconnaissance systems. In this proposed project, implementation of miniature size cognitive robot is done using LoRa technology for data transmission which is devised with episodic-like memory to observe protected remote spaces through multiple sensors (Gas sensor, Temperature sensor, Ultra-sonic sensor, etc).
These sensors are mounted on the robot to sense the harsh environment as per the military needs. The objective is to contribute toward the realization of LoRa as a viable communication technology for military applications that needs long-range links and capability of maneuvering itself. LoRa aims to eliminate repeaters, reduce device cost, increase battery lifetime on devices, improve network capacity, and support a large number of devices.

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# Smart Bus Alert System for Easy Navigation of Blind

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**Abstract:** There are many approach which are used for navigating the visually challenged people, navigation in real time traffic is the main problem. Objective of the project is to provide a solution with the aid of wireless sensornet works (WSNs). Arduino system is used for indicating the presence of blind person in the bus station. Voice module and Atmea a 328 audio playback systems are used to update and inform the blind person about the bus arriving and reaching destinations and to guide him as to what he has to do next. GPS analysis the information provided and generates the corresponding bus number. RF transmitter sends the bus number and announced in the Speaker attached with the system. The system is connected with GPS which indicates the destination given. Audio output is generated by the voice synthesizer. The expected outcome of the project is to obtain an easy navigation system for people with visually impaired.

**Keywords:** Arduino,Gps module,Voice module,RF transmitter and reciever




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# ATHLENTIC-S

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**Abstract:** Sports plays an important role in almost every sector. Sports is one among the most enjoyable time of life. We play sports to make our physical health good, for our mental satisfaction, etc. ATHLENTIC-S is a platform to show your skills of any age or gender to show their skills in sports like Running, Archery, Swimming, etc. Making ATHLENTIC-S is difficult because of the calculation of the athlete's timing of the completion of their task. So to detect the real-time, we used the ML concept to detect the behaviour, timing, and other sports-related kinds of stuff with a high accuracy rate.

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# Attendance System Using Facial Recognition

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**Abstract:** The main objective of developing this system is to achieve the task of digitizing the original method of recording attendance by calling out the names of the students and recording it on the paper or a file by replacing it with automatically recording of attendance using facial recognition technique.
This system takes the initiative of introducing an attendance management system that is fully automatic and which is free from other kinds of problems with the normal attendance taking procedure which is very simple and easy to use. The system can also be used to ease the attendance taking process in the examination or during other occasions where attendance is highly important.
This system replaces the traditional methods for identification like shouting out the name of some student who will respond back if present or checking out the respective ID cards provided by the school or college. This process can be very long and make the students tired as well as it also causes interference in the ongoing process of teaching.




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# Auto Insurance web Project

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**Abstract:** Welcome to the future of Insurance
Uncertainty is a personally conscious sense of risk in a particular situation. People react differently to risk,epending on the magnitude of the uncertainty they experience. Uncertainty has different dimensions. Insurance is a way to cope with uncertainty and protect against damage or liability from damage done. Insurance worldwide has evolved into a living, self-sustaining organism, a unique environment where insurers both compete for customers, but also support and protect each-other against risks. Being an old and massive business, insurance was amongst the first industries to adopt information technologies. There were developed enormous information systems, usually in the COBOL programming language. Nowadays, insurance business faces the necessity to modernize that software. Insurance worldwide has evolved into a living, self-sustaining organism, a unique environment. Modern software frameworks come to help in this tremendous task.

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# Cash Settlement Web Application

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**Abstract:** Web applications have become a part of day-to-day life. Many applications are available in the market to manage personal and group expenses related work. Not many applications are reliable or are able to fulfil the user requirements. In this paper we have designed a web-based algorithm application that manages all our expenses, our personal contribution toward group expenses, maintain monthly income, It provides information about "who owes who and by how much.
The proposed application would eliminate sticky notes, spreadsheet and ledger that cause confusion, data inconsistency problems while recording and splitting of expenses. It can also manage these expenses more effectively.




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# College Discovery Application

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**Abstract:** In any field after higher discretionary guidance there is a situation test for getting admission to graduation/post-graduation college. It very well might be designing, recognition, M.Tech, MBA, MBBS or some other specialized or non-specialized field. To get confirmation in great colleges of these fields students initially needs to get the great score in these entrance tests. Regardless, even ensuing to getting a fair score most of the students or their people are not being familiar with the extraordinary colleges in that particular field. Moreover, for the students who has the typical score it is essentially more problematic endeavor to find the fitting college and get the affirmation in it. It happens that for looking through the colleges the students need to widely look on the web. Our college Dicovery Application is an electronic venture that will assist these students with getting the most fitting colleges for them in anything field they are intending to foster their vocation. students or their parents likewise profit with the main component to book a meeting with the college so they can straightforwardly talk with the college and clear their questions. This will decrease the endeavors, cash spent and as well as the pressure of the students and their parents.

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# Collision Alert System

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**Abstract:** Obstacle detection in autonomous vehicles is mandatory for maintaining the security of the driving force and therefore the vehicle during the trip to the required destination. Currently, vehicles are combined with the different type of alert systems to help the driver so that he can drive the vehicle safely through the right path. However, autonomous vehicles must detect the obstacles by itself and begin navigating through the encompassing objects safely. Various systems were introduced for obstacles detection using different sensor types like lidar, camera and radar. Raspberry pi camera is employed to detect the obstacles before the vehicle during the trip. The obstacles which the vehicle should affect is split into two types: fixed obstacles and sudden obstacles. The work that is presented here is focused on fixed obstacles detection using a monocular camera and Raspberry Pi that is used to deploy model. Python, OpenCV and machine learning libraries are used for image processing using Haar feature-based cascade classifiers method(an effectual machine learning based approach), which detects the objects with very good accuracy and takes low computational time. Moreover, a software made using deep learning technique to spot the obstacle. The output of the two obstacle detection techniques is compared on the basis of their speed of detection and accuracy they got. Finally, an I2C is employed for communication between the Raspberry Pi and therefore the main controller of the targeted vehicle, to take the specified decision supported the detection result.

**Keywords:** Computer vision, Obstacle detection, Autonomous vehicle , Raspberry Pi, Python , OpenCv




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# Crypto currency the Future of India

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**Abstract:** While some discerning investors are increasingly becoming disenchanted with virtual currencies like Bitcoin as a result of recent price drops, others believe it is too early to declare it a dead end. In this study we try to find an answer to the burning question: to invest or not to invest? The paper looks at a variety of facets of crypto currency platforms in an effort to address the research's key questions, "Will cryptocurrency be the next money platform?" and "Will cryptocurrency be the next currency platform?" Is it possible to use virtual currency platforms?". In this paper we try to elaborate these issues. For this we collect primary as well as secondary data for the analysis. The primary data was collected from Delhi. The respondents were asked question about, cryptocurrency to understand the preliminary impression of cryptocurrency's use, development, trustworthiness, and future expectations. Due to the vast amount of cryptocurrency that is flowing through multiple systems, the massive expansion and growth of using and implementing cryptocurrencies, and the possibilities that cryptocurrencies provide, the finding of our research suggests that cryptocurrency is quite likely to be the future currency platform.

**Keywords:** Cryptocurrency, Bitcoin, Virtual Currency, VC, FinTech, Currencies, Blockchain, Regulator, Investment, Trustworthy.

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# Cyber Security

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**Abstract:** Current world that is run by technology and network connections, it is crucial to know what cyber security is and to be able to use it effectively. Systems, important files data, and other important virtual things are at risk if there is no security to protect it. Whether it is an IT firm not, every company has to be protected equally. With the development of the fresh technology in cyber security, the attackers similarly do not collapse behind. They are consuming better and enhanced hacking techniques and aim the weak points of many businesses out there. Cyber security is essential because military, government, financial, medical and corporate organizations accumulate, practise, and stock unprecedented quantities of data on PCs and other devices. An important quota of that data can be sensitive information, whether that be financial data, intellectual property, personal information, or other various kinds of data for which illegal access or acquaintance could ensure negative concerns.
Cyber Security is the combination of processes, technologies and practices. The objective of cyberSecurity is to protect programs, application, networks, computers and data from attack. In a computing context, security includes both cyber security and physical security. The attacker damage or theft software or information well as from disruption or misdirection of the services they misguide.
Cyber security includes controlling physical access of the hardware, application, networks and protecting against harm that may come via networks. In this paper we proposed study of Cyber Security and its elements. We also give various security aspects related with cyber security


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# Data Encryption & Decryption Using Steganography

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**Abstract:** Video steganography is a method that considers secure communication. When we saw the history of steganography, it was hidden in many ways like wax tablets, and written on rabbits' stomachs. Here in this paper, we consider video steganography methods for creating a secure steganography connection. There are many proposed video steganography methods but they are no longer different types of formats, secure, quality, effects. So here is a suggestion of secure steganography methods namely LSB secure method, Neural Networks & Fuzzy logic, and check using PSNR and MSE method data. That collected data comes from video streaming. And the result has been seen with more formats, more security, output quality, and more accurate PSNR and MSE values than other proposed methods.

**Keywords:**Video Steganography - Video Stream, SLSB (Red Sections Slowly Slow), Uncognizable Mind, and Neural Network Algorithm.

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# Ventilator Using ARDUINO

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**Abstract:** This paper shows the development of a minimal expense, open-source mechanical ventilator. "Wellbeing is riches" it is extremely popular proverb. Roughly all out 48000 ventilators is accessible in India, and that implies a normal of one ventilator accessible for each 35000 people. The most squeezing deficiencies confronting medical clinics during the COVID-19 crisis is an absence of ventilators. These machines can keep patients breathing when they no further canon their own and they can cost around $30,000 each. Plan and advancement of a minimal expense versatile ventilator could be a potential way, that can help pneumonia instances of COVID-19 patient in India. Be that as it may, the proposed minimal expense ventilator conveys breaths by compacting a conventional bag-valve-mask (BVM) with a turning engine belt drive component, disposing of the requirement for a human operator. Among different highlights, the machine ought to have intrusive and harmless component, and supports 500-600 mL flowing volume, with a consistent working ability for quite a long time. In view of the estimation, 12 Respiratory rates (RR)/min can give the necessary measure of flowing volume to the pneumonia patient. In addition, the procedure of programmed arm activated BVM pressure is shown to be a practical choice to accomplish minimal expense, low-power and compact ventilator innovation that gives fundamental ventilator highlights for a portion of the expense of existing models.


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# Blind man stick using Arduino

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**Abstract:** The project describes ultrasonic blind walking stick with the use of Arduino. According to World Health Organization (WHO), 30 million people are permanently blind and 2.85 million people with vision impairment. If you notice them, you can very well know about it they can't walk without the help of other. One has to ask guidance to reach their destination. They have to face more struggles in their life daily life. Using this blind stick, a person can walk more confidently. This stick detects the object in front of the person and give response to the user either by vibrating or through command. So, the person can walk without any fear. This device will be best solution to overcome their difficulties. We are going to upgrade the project by increasing its application. In this project, we are going to use two ultrasonic sensors. The development of technology requires the innovation of a device that can be used to help the blind as a road guide. This device is kind of the white cane to help blind people to scan their surroundings for obstacles or orientation marks.

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# E-Commerce : Changing Human Buying behavior

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**Abstract:** E-commerce is a boom in the modern business. E-commerce means electronic commerce. Ecommerce (Electronic commerce) involves buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, predominantly the Internet. E-commerce (Electronic commerce) is a paradigm shift influencing both marketers and the customers. Rather e-commerce is more than just another way to boost the existing business practices. It is leading a complete change in the traditional way of doing business. This significant change in business model is witnessing tremendous growth around the globe and India is not an exception. A massive internet penetration has added to growth of E-commerce and more particularly start-ups have been increasingly using this option as a differentiating business model. Moreover E-Commerce has significant influences on the environment. Although the model is highly used in current business scenarios, the option has not been explored at its fullest. The current research has been undertaken to describe the scenario of E-Commerce, analyze the trends of E-Commerce. The study further examines the key variables imperative for the success of E-commerce business models.




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# E-Commerce Technology in Planto Business in Java

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**Abstract:** The intent of this research is to find out the effectiveness of using e-commerce in ornamental plant business, and what steads can be made for ornamental plant farmers. This research used a descriptive method for a mere review of the situation that been performed at the time of the study, the issues of this study to find out how much issues can be obtained if using e-commerce in the orb of ornamental plant business, and what steads can be made by ornamental plant farmers, this research is conducted by discussing how decrees, sales and payments transactions are made using e-commerce, the issues of this research that e-commerce can improve sales efficiency for ornamental plant farmers, of course e-commerce technology can affect the level of ornamental plant sale s.

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# E-Communication System (Online Chat)

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**Abstract:** In this paper we present the design of the Broadband Power Line Communication receiver complexity prepared. To date, the Radio-Frequency platform uses a straightforward conversion of structures over time some new solutions are used in base-band signal processing, such as a new frequency offset sync system based on frequency domains. Strategies for processing signals to combat bad communication condition on power lines is addressed, in order to enable a reliable high speed data connection at low voltage. In particular, it is said that methods can be effective reduce the impact of major corruption on channels, which are dynamic channels reduction, multipath frequency-elective blurring, multiple access disturbances, and background noise. Strategies for dealing with the source of negative, intense noise are also discussed.




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# Efficient use File Sharing Using Web Application

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**Abstract:** File Transfer Web Application is used to upload any type of files like word and we drag and drop the through using application and send the file through email.This web application is developed using Nodejs, React, Mongodb , Express ,HTML ,CSS.The web application is developed in 3 tier architecture involving user interface, controller and database. The user boundary will be a web page hosted on a server. The web page consists of both static and dynamic substance. All the data required for the submission is stored in database tables. Controller access the data from the record and provide it to the user through user interface (web page).

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# Face Recognition Attendance System

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**Abstract:** in this digital era, face recognition system plays a vital role in almost every sector. Face recognition is one of the mostly used biometrics. It can used for security, authentication, identification, and has got many more advantages. Despite of having low accuracy when compared to iris recognition and fingerprint recognition, it is being widely used due to its contactless and non-invasive process. Furthermore, face recognition system can also be used for attendance marking in schools, colleges, offices, etc. This system aims to build a class attendance system which uses the concept of face recognition as existing manual attendance system is time consuming and cumbersome to maintain. And there may be chances of proxy attendance. Thus, the need for this system increases. This system consists of four phases- database creation, face detection, face recognition, attendance updating. Database is created by the images of the students in class. Face detection and recognition is performed using Haar-Cascade classifier and Local Binary Pattern Histogram algorithm respectively. Faces are detected and recognized from live streaming video of the classroom. Attendance will be mailed to the respective faculty at the end of the session.

**Keywords:** Face Recognition; Face Detection; Haar-Cascade classifier; Local Binary Pattern Histogram; attendance system;




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# Face Recognition Based Attendance

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**Abstract:** Face recognition system plays a important role in almost every sector. Face recognition is one among the mostly used bio metrics. It can used for authentication, identification, and has got many more advantages. An Automated system or machine for human face recognition during a real time background for universities to marks the attendance of their employees. The task is difficult because the real time background subtraction during a picture remains a challenge. To detect real time human faces are used and an easy fast Principle Component Analysis has wont to recognize the faces detected with a high accuracy rate. The matched face is used to marks the attendance of the employee. Our System maintains the attendance records of employees or students automatically. Manual taking of attendance in logbooks becomes a time taking task. So we designed an efficient system that comprises of face recognition to store the attendance records of employees. Our system enrolls the staffs and students face. The enrolling may be a one-time process and their face are going to be stored in the database. It is a one-time process and during enrolling of face we require a system. You can have your own employee id which is unique for each employee. The presence of each employee or students will be updated in a database. Attendance is marked after employee identification. This product gives much more solutions with accurate leads to user interactive manner rather than existing attendance and leave management system.

**Index Terms:**Face Recognition, Face Detection, Local Binary Pattern Histogram, Attendance system

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# Fake News Detection Using Machine Learning

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**Abstract:** Fake news is experiencing progress with the evolution of the means of Internet and Social media. Fake news detection in research is getting quite interest. But it also faces some challenges due to the limited resources such as datasets and processing and analysing techniques. Here, we propose a system for Fake news detection that uses machine learning techniques. We propose a dataset of fake and true news to train the proposed system. Obtained result shows the efficiency of the system. Here, we propose a system for detection of fake news that uses machine learning algorithms and techniques.




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# Farming as a Web Service

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**Abstract:** Agriculture is an important sector of Indian Economy as more than half of its population relies on Agriculture as principle source of income. Research and Extension systems plays major role in generation and dissemination of Agricultural technologies aiming at enhancing the income of farmers. The extension system adopts series of extension methods such as Training, demonstration, exposure visit to transfer the technologies from lab to land. Majority of these extension efforts mainly focus on location and crop specific technologies, and mostly on solution to problem basis. However, there is a need for equipping the farmers with Basic knowledge of Agriculture in order to create a better knowledge platform at farmer level for taking appropriate farm management decisions and to absorb modern technologies.

Agriculture being the prime means of livelihood, there is a basic need of re-inventing the farming best practices, combined with tech-driven innovations in this segment to ensure sustainability and eliminate poverty and hunger. In this chapter, the authors focus on introducing relevant technology-enabled services that will ensure economic sustainability, enhance food security through data-driven decision making by various stakeholders like farmers,agri-business and agri-tech start-ups, farmpreneurs, government, agronomists, and IT suppliers. The analyzed information will be used as a vantage by farmers to select precision farming practices to aid productivity to empower personnel to provide timely assistance and industries to implement real-time monitoring using sensors and devices. The chapter will help formulate concepts, methods, practices, benefits, and introducing several case scenarios to effectively propagate the service mode of farming that will imbibe pay-as-you go model ensuring cost optimization and operational ease.

In our day to day life we consume foodand our survival is predicated on mainly food. A considerable amount of our food is coming from farms and other means too. These farmers do their hard work for growing and serving many lives across the country, which pays for their source of income. But thanks to intermediates within the selling of their final products the farmers are unable to form their profit and mostly live poor. By this project we will be able to connect farmers directly to the customer so that direct dealing of products can be accomplished.This will end in a big decrease within the prices of the products currently available within the market also because the profit will directly reach the farmers pocket. This innovative site allows for good farmer, retailer and supplier communication, it allows farmers to login and communication to respective dealers/buyers. When dealers publish an advertisement or offer, the respective farmers get notified via e-mail message. Farmer can directly contact suppliers by searching online. Farmer may submit their grievances online. Farmers get notification of any new offers/ schemes.

It implements a conceptual framework for modeling the production system at a farm scale. The web system supports the design of the production system, which logically split in three parts: the decision support subsystem, the technical sub-system, and the bio- physical subsystem.

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# Food Serving Robot

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**Abstract:** Robotics is said to be the next technological revolution. Many seem to agree that robots will have a tremendous impact over the following years, and some are heavily betting on it. The robotics industry already employers about 150,000 people worldwide in engineering and assembly jobs. The number of robotic units sold in 2020 rose to 465,000. Between 2020 and 2022, there would be a 12% increase in shipments of robots worldwide. Companies are investing billions buying other companies, and public authorities are discussing legal frameworks to enable a coherent growth of robotics. As the era of industrial revolution 4.0 is coming, most of robots are developed to replace the human works and services. However, in Vietnam, putting robots in service industry such as waiter robot serving in restaurants is still very limited. This study presents the initial development of restaurant serving robot using line following approach. The robot is designed by referring to the survey on the size and appearance requirements at a restaurant. Robot is programmed to come to a specific table by mapping data. Based on the line reading algorithm implemented in Arduino the robot follows the line marked on the floor to move to the desired table position and returns to the service counter after completing the task. There are ultrasonic sensors on the robot that can detect the obstacle to help the robot stop and output warning signal.
It's robotics base project where robot for serving food in hotels and restaurants and the same robot can be used in the hospital for serving the food. and the order will be received by kitchen master once the food is ready to master will keep the food on Robo Waiter by selecting the table number. This robot waiter robot will travel to that particular table by tracking black line marked on floor. Generally, the path is predefined and can be either visible like a black line on a white surface with a high contrasted colour.This robot not for only a single purpose ,we will use this in hospital to serve medical equipment and also physically challenged person , In industry to carry materials after certain modifications.


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# Guitar Website

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**Abstract:** The Guitar is a very popular instrument that is commonly used by many musicians. This study focused on the factors that made the guitar more appealing to the youth in comparison to other instruments. A semi-structured, open-ended questionnaire was used to collect the data essential for this study. The data was thematically coded to acquire the results and conclusions. Purposive sampling was used in this research study and the average age of both male and female respondents is 19 years old. The results suggested that the guitar was more appealing to their generation, affordable to purchase and had a distinct image as a musician and songwriter. The study focused on acoustic guitar players and composers.

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# Health Monitoring System Using AI

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**Abstract:** Wireless smart sensing device is an advanced technology that can provide smart solutions in various sectors like networking, industries and private or government organizations etc in the world. Internet of Things (IOT) technology helps to make these wireless smart sensing devices more powerful. The main objective of this project is to reduce the cost of health care by reducing physician Office visits, regular hospital visits for routine check-ups and diagnostic test procedures. These smart devices can be used to measure temperature, blood pressure, heart rate, social distance and lung respiratory information etc. to monitor the patient's health status. This smart device has internet connection so that we can communicate easily with each other. Artificial Intelligence is used for analysis of previous data and predict patient health condition in Emergency case also.




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# Image Detection using AI and DL

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**Abstract:** The Df (Deepfake) algorithmic program permits a user to change the face of anyone in to several images with the face of a unique actor or different person in a very photorealistic manner. This poses rhetorical challenges with the regards to the dependableness of image proof. To analyze towards answering the above question, tested the image response non uniformity (IRNU) analysis for its effectiveness at the sleuthing Df image detection victimization AI manipulation. The study demonstration a major difference in means that normalized cross correlation scores between authentic pictures and Df images. The Df image detection victimization AI are real image/videos with fake content leverage AI technologies to lay fake image or voices and likenesses, Df will, quite virtually, to put one's words with others mouth and faces etc. Df are explored not only specific era but also covered social media, world every era, and they are assembling an attempt to manage the explosion of fake content with probably dishonest authenticity on their platforms. This paper introduces about Df, process of formation, working fundamental, and the potential for Df' influence on advertising. Author's plan to offer an abstract model to explores the effect of Df on different industry to apply in client consumption and cultural influence.

**Keywords:** Df (deepfakes), AI (artificial intelligence), face manipulation, survey, deep leaning.

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# Radio Device for Underground Mines

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**Abstract:** This paper presents an overview of wireless communication systems for under-ground mines including voice and data transmission. The various countries like USA, Austral-ia, Canada, South Africa, are working on underground mines wireless communication and still it is under experimental phase. Recent devices such as, TeleMag wireless system, PED, and VDV leaky feeder systems are discussed which provide voice, video and Mobile Data Communication at very high speed. This technology can be very useful in case of emergency or disasters under the mines. The injuries due to roof falls are typically confronted problems of underground coal mines. These injuries can also damage human lives under the mines. The technology implemented for underground wireless communication at a frequency of 457 kHz.

**Keyword:**Wireless communication, multi-hop protocol, Voiceover sensor network, RFID, PED, SIAMnet, TeleMag, land use planning, recreation ,Underground communication ,communication, tracking ,underground mining




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# Detecting Malware Using Machine Learning

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**Abstract:** Zero-day or obscure malware are made for utilizing code jumbling methods that can change the parent code to deliver posterity duplicates which have a similar usefulness yet with various marks.
Current strategies come up short on ability to identify zero-day malware with the necessary correctness and proficiency.
In this paper, we have proposed and assessed a unique strategy for utilizing a informative mining methods to distinguish and order zero- day malware with elevated levels of accuracy and effectiveness dependent on the recurrence of Windows API calls. This paper depicts the technique avail oneself of the assortment of huge informational indexes to prepare the classifiers, and examinations the exhibition, consequences of the different information digging calculations received for the examination utilizing a completely robotized instrument created in this exploration to direct the different exploratory examinations and assessment. Through the exhibition consequences of these calculations from our trial examination, we can assess and talk about the benefits of one information mining calculation over the other for precisely identifying zero-day malware effectively. The information mining structure utilized in this exploration learns through breaking down the conduct of existing vindictive and kind hearted codes in enormous datasets. We have utilized hearty classifiers, in particular Naive Bayes (NB) Algorithm, k-Nearest Neighbour (kNN)
Algorithm, Sequential Minimal Optimization (SMO) Algorithm with 4 different portions (SMO -Normalized PolyKernel, SMO - PolyKernel, SMO - Puk, and SMO-Radial Basis Function (RBF)) and Backpropagation Neural Networks Algorithm.

**Keywords:** Zero-day malware, Machine, Learning, Sandbox, Feature Extraction, Heuristic Analysis, Model Training

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# ML Techniques for Lung Cancer Detection Based on Routine Blood Indices

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**Abstract:** Cancer occurs due to the development of a large number of abnormal cells that causes unbitted growth and division of abnormal cells. The intent of this research is to predict lung cancer using machine learning techniques based on routine blood indices and have better predictive issues. We have used machine learning techniques such as XGBoost, logistic regression, svm, gaussian naive bayes, decision tree and knn with gridsearchCV. Various scikit-learn algorithms have been used for feature selection, and only those features are selected that are important for our model. We found that XGBoost using gridsearchCV classification model is most suited for this work.

**Index Terms:** Cancer, Abnormal Cells, Classification Techniques, Lung Cancer Classification, Machine Learning, Machine Learning Techniques




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# Online Health-Care Management System

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**Abstract:** In today's world people are neglecting healthcare over other things in life which must not replicate the important place of healthcare .People nowadays are so busy that they don't have ample time for getting their visit to a doctor to get a cure of their sufferings.
The main aim here is to provide user-friendly and chaos free environment for creating a medium of interface between the doctors and the patients.
The website is connected to a strong database with all the proposed history and records so as to create a hasle-free experience.

**Keywords:** Appointments ,tracking, doctor, patients, Healthcare

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# Review of Meta-material inspired Multi-band Antenna for Sub-6 GHz Applications

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**Abstract:** In this article, a review work is carried out upon a meta-material-inspired antenna. Metamaterial antenna is having some unique characteristics such as Left-handed moments of EM waves, zero propagation constant, antiparallel phase velocity, group velocity, and negative refractive index. MTM inspired antenna exhibit negative permeability ($\mu < 0$), permittivity ($\varepsilon < 0$) or double-negative (DNG) characteristics. These characteristics can be obtained in the antenna by different technologies such as SRR/CSRR, defects in-ground, suitable cuts in either radiator or ground stubs, EBG, and others also. The unit cell of metamaterial inspired antenna owing to the stopband characteristics, which enhances the performance of the antenna in terms of bandwidth, gain, and sometimes miniaturization properties.

**Keywords:** Impedance Band Width (IBW), Coplanar Waveguide (CPW), Split Ring Resonators (SRR), 5G, WLAN, WiMAX.


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# A Review of Band Notch Ability of Single Element Antenna for Wireless Communication Applications

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**Abstract:** This review paper presents the design and entelechy of the antenna with notch characteristics. The design of the antenna utilizes mainly the technology of SRR, slot, parasitic element, EBG, and many more. These technologies prohibit the possibility of interference between the adjacent bands. The notch is created generally in the antenna where Wide Band or Ultra-wide Band characteristics are obtained. The notch is created for many applications such as Wi-MAX, WLAN, 5G, ISM band, and Satellite communication.

**Keywords:** Band Notch, Microstrip antenna, WLAN, Wi-Fi, Bluetooth, 5G.

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# The Prototype Model Ras for Intelligent Transportation System

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[Approved by AICTE & Affiliated to Dr. APJ Abdul Kalam Technical University, Uttar Pradesh, Lucknow]

**Abstract :** "The aim is about providing more reliable, more frequent and more affordable services but making the best use of smartcards and multi-operator ticketing. In the years to come, we want any bus traveler to purchase tickets quickly and conveniently while seamlessly moving from one operator or mode of transport to another." The project aims in designing a system which automatically measures the distance travelled by a passenger in bus and debits the fare for travelled distance from the passenger account. This method of ticket fare collection is most innovative way till now. This project makes use of the most secure Smart Card that will be used as prepaid travel card that stores the amount within its internal memory. This facilitates user to board any bus within the region. The system present in bus is made of Microcontroller, SMART Card reader, Keypad, LCD display and GPS receiver. Here we are making use of GPS receiver for location and travelled distance calculation. This helps in calculating the actual travelled distance and avoids the dependency on vehicle's inbuilt distance meter.

In these present days, as the man is very busy trying to compete with the challenging world, he does not prefer to waste his valuable time in doing regular things routinely. In bus stations, persons have to monitor in all timings to issue the tickets for buses or general bus tickets. And passengers also have to wait for long time even for this metro buses and reservation tickets. The person can book the tickets even by online services, but sometimes the networkconnections may be down or the services may not be updated very often. To avoid this risk and reduce the manpower, we are developing this low- cost metro bus ticketing system using smart card and GPS.

In this project, each user contains one smart card which has some amount of money which is used for bus tickets and to reserve tickets. When the user goes on bus, he just inserts the card into smart card reader and using GPS the fares will be deducted i.e., GPS receiver gives values and using that values u can calculate how much distance you travelled. Depending on the distance the fares will be deducted from your card. If the amount is insufficient in the card, the system does not issue the ticket. Once the amount is over, the user has to recharge the same smartcard from bus departments. When the card runs out of balance, the system alerts the buzzer indicating no balance in the card. The controlling device of the whole system is a Microcontroller. GPS receiver, keypad, smart card reader, LCD display are interfaced to the controller. When a person boards a bus, he needs to swipe the smart card to the smart card reader present at the entrance and password should be entered by keypad. The location coordinates at that instant given by GPS receiver will be stored against his smart card number in the microcontroller and when he exits the bus, he need one more swipe of smartcard which gets the location coordinates of exit point and the microcontroller calculates the distance travelled and fare and displays them on the LCD screen. Also, the amount will be deducted from the passenger account. The Microcontroller is programmed using Embedded C language which provides effective environment for performing the task.


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# Real-Time Smart Parking Control System

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**Abstract: I**n modern days the vehicle count in cities keeps on increasing, necessitating the need of a real-time smart parking system. The number of available parking places in small cities is usually limited, and to know the exact number of available parking spots by utilizing any of the modern techniques becomes challenging due to a lack of resources and financial constraints. Modern technology like Image processing requires high-speed internet which is difficult to obtain in small cities owing to a lack of well-maintained internet infrastructure. This paper describes the use of Arduino Uno as the only communication tool, reducing our reliance on the internet. RFID (Radio Frequency Identification) technique has been utilized to authenticate whether or not a person looking for a parking spot belongs to a particular organization. GPS technology has also been introduced, which is useful for places that cover a large region or where finding exact parking locations is difficult. The GPS sensor simplifies the parking process even further by providing the user with the exact location by giving latitudes and longitudes of the parking spot. The entire system is simulated using Proteus Software.

**Keywords:** smart car parking, GPS, ,RFID parking space detection, microcontroller, ultrasonic sensor.

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# Air Purifier Using Hepa Filter with Real Time Monitoring System

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**Abstract:** In today's world, our environment is being damaged rapidly . One of the most vital reason for this is Air pollution. It is creating very harmful diseases for human beings. To overcome this issue, we are here with our Air Purifier using HEPA filter. The purpose of this filtering device is to reduce the quality of polluted air and provide with purified air. It functions with the help of HEPA Filter, Carbon Filter, Pre Filter. The whole filter is connected with each other and works simultaneously. It observes the air and displays the quality of air in PPM using Arduino and sensors after that filters work and fresh air releases from other end and the value of fresh air is displayed n LCD display.

**Keywords:** HEPA filter, Carbon filter, Pre filter, Arduino, Air quality index, Sensor, LCD.




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# Robotic Surveillance System

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**Abstract:** Remote surveillance and monitoring of our frontier have seen a growing need in emerging times Currently the surveillance of International border areas is a strenuous task for soldiers. As every field is opting for robotics to improve the existing systems, we aim to implement robotics in military security systems for the most security. In this project, we put forward a surveillance robot that is capable of surveillance and detecting intruders in regions of international borders Therefore the surveillance robot is designed in such as way that it would automatically detect the invader within the borders and alert the nearby security personnel as a helping hand by alerting him through video streaming over Internet Of Things. The heart of the robot is a powerful Raspberry Pi 3 Model B+ which is used as the ultimate controller for the entire operation of the robot in this system we have used the raspberry pi to rotate the camera for video streaming. For capturing and streaming the video the raspberry pi camera is attached to the microcontroller which actively monitors the area and sends a notification when any obtrusion is detected.

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# Automatic e-Challan System

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**Abstract:** To increase the control over violations of traffic rules that vehicles generally escape from Traffic Cops and Cameras. As we all know that with the increase in number of vehicles on roads and limited installed Cameras and less number of Traffic Cops, it is very difficult to keep every vehicle under observation. We are innovating Challan system in vehicles with a new self-monitoring, analysing and complaining system. Through this, Speed and Seat belt status will be monitored and respective warnings will be generated for driver along with registered owner. Warnings will be generated through a warning LED on vehicle and a MAIL will be sent to registered contacts. Parental care will be also encouraged.




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# Secure File Storage on Cloud Using Hybrid Cryptography in Python

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**Abstract:** As an emerging technology and business paradigm, Cloud computing platforms provide easy access to a company's high-performance, computing and storage infrastructure through web services. Mainly cloud computing technology enables users/enterprises to eliminate the requirements for setting up of expensive computing infrastructure and reduces system's operating costs. Data security and privacy are increasingly becoming the predominant issue that affects small and medium business organizations' readiness to migrate their data from on-site to cloud storage facilities. As a result, this technology is used by an increasing number of end users. On the other hand, existing security deficiencies and vulnerabilities of underlying technologies can leave an open door for intrusions. Therefore, cloud computing providers need to protect their user's sensitive data from insider or outsider attacks by installing an intrusion detection system. Form the viewpoint of security, Deduplication, various risks and issues are identified in the area of Cloud Computing. There are various risks associated with the security but one of the major issues is the security of data being stored on the provider's cloud and privacy while the data is being transmitted. This paper deals with various issues associated with security and focus mainly on the data security and methods of providing security by data encryption. Various encryption methods of block cipher algorithms such as Triple DES, Blowfish are discussed for providing solutions to cloud

**Keywords:** Cloud, Cryptography, CSPs (Cloud Service Providers), Encryption, Decryption, AES (Advanced Encryption Standard), RSA (Rivest –Shamir–Adleman), OTP (One Time Passwords).

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# Ultrasonic Navigation System for the Blind with GPS Tracker

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**Abstract :** This paper describes the use of Arduino on ultrasonic blind walking stick. 30 million people are permanently blind and 285 billion are visually impaired, according to the WHO. When you consider them, you will realize very well that without the aid of others they can't walkTo reach your destination one has to ask for directions. During their daily lives, they have to face more challenges. The blind handle is safer for a person to walk. The bar senses the item before the individual and provides the consumer with a vibrational answer or on demand. And, the human being can travel without anxiety. This app is the best solution to solve the problems




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# Industrial Shredder Machine Alert System using Deep Learning

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**Abstract:** Efficient, ideal, and the safest way to implement a safety measure in various types of industrial shredders or crushers with the help of Machine Learning, leveraging some of its core features to assist solve some of the real-world problems. This could potentially solve various hazards that take place every day at all types of factories and industries.

All current approaches and tactics have failed to provide 100% protection against possible risks. We have some of the finest cutting-edge technologies at our disposal. It would be immoral not to utilize it in order to save lives. When more than 77.8% of the population is from the lower class, the danger grows dramatically, and it must be addressed in a timely, safe, and dependable manner. Making use of the fast computing speed of computers, and access to millions of terabytes of data at the tip of our fingers. This safety measure could be a breakthrough in the computer vision field.

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# Smart Cab Based on Q-Learning Algorithms

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**Abstract :**Q-learning is arguably one of the most applied representative reinforcement learning approaches and one of the off-policy strategies. Since the emergence of Q-learning, many studies have described its uses in reinforcement learning and artificial intelligence problems. However, there is an information gap as to how these powerful algorithms can be leveraged and incorporated into general artificial intelligence workflow. Early Q-learning algorithms were unsatisfactory in several aspects and covered a narrow range of applications. It has also been observed that sometimes, this rather powerful algorithm learns unrealistically and overestimates the action values hence abating the overall performance. Recently with the general advances of machine learning, more variants of Q-learning like Deep Q-learning which combines basic Q learning with deep neural networks have been discovered and applied extensively. In this paper, we thoroughly explain how Q-learning evolved by unraveling the mathematical complexities behind it as well its flow from reinforcement learning family of algorithms. Improved variants are fully described, and we categorize Q-learning algorithms into single-agent and multi-agent approaches. Finally, we thoroughly investigate up-to-date research trends and key applications that leverage Q-learning algorithms.

**Index Terms:** Reinforcement learning, Q-learning, single-agent, multi-agent


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# Smart Water Tank: Based on IoT and Python

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**Abstract:** Wastage of water in the current scenario, merely due to overflowing tanks, which is not affordable. Conventional water tanks can neither monitor nor control the water level in tank, leading to large amount of water wastage. Some other technologies had certain drawbacks in some or the other way. The need of removal of these short-comings and providing an efficient and economical solution has been the main focus of this project. Our project is for water level monitoring as well as controlling with IOT and android application. The IOT platform we are using is Arduino which is an open source. The water level in the water tank is divided into maximum, minimum and start levels indicated by different colours for each. An HC-SR04 ultrasonic sensor is placed on the surface of the tank to sense the water level and the distance from water level to the sensor is measured and sent to the android application through Arduino. We can monitor the tank manually using an on/off button provided in the android application. The tkinter has a user interface which displays the tank layout, a button for manual operation and an LED for indicating the motor status.

**Index Terms:** IoT, ultrasonic

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# Smart Epicure Hut

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**Abstract:** This system will enable customers to book the tables in the hotel by phone. In this pandemic time restaurants are ordered to open with covid guidelines with minimum staff and proper distance and sanitization. When reserving the tables online, users would only have to call the Epicure Hut to find whether a table is vacant or not. After knowing that table is vacant, customers willbook their table. If they don't reach there then hotel will cancel the table after 10 minutes of time. The system is implemented in Java 18 with MySQL database system.

**Keywords:** Covid safety, Quick Bill Process,contact less service, user friendly




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# Stock Market Prediction Using Machine Learning

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**Abstract:** In Stock Market Prediction, the aim is to predict the long run worth of the monetary stocks of a company. The recent trend available market prediction technologies is that the use of machine learning that makes predictions supported the values of current stock exchange indices by coaching on their previous values. Machine learning itself employs totally different models to form prediction easier and authentic. The paper focuses on the employment of time Series and LSTM based Machine learning to predict stock values. Factors thought-about are open, close, low, high and volume.

**Keywords:** Close, high, low, LSTM model, open, Time Series, Streamlit, Heroku and volume.

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# Study & Development of E-Commerce Website

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**Abstract:** Online business could be a blast inside the cutting edge business. Online business implies electronic trade. E_commerce includes trading of items and administrations, or the sending of assets or information, over a framework, prevalently the net. Web based business could be a change in perspective affecting the two advertisers and furthermore the clients. Maybe web based business is very only distinctively to brighten up the overarching strategic approaches. It's prompting an entire change in the conventional approach to carrying on with work. This tremendous change in plan of action is seeing an astounding development round the globe and India isn't a special case. An enormous web entrance has added to development of E-trade and all the more especially new companies are progressively involving this determination as a separating plan of action. Additionally E-Commerce has huge impacts on the climate. Albeit the model is exceptionally utilized in current business situation yet the decision has not been investigated at its fullest. The current exploration and examination has been embraced to make sense of the state of E-Commerce sites, break down the patterns of E-Commerce.




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# Smart Blind stick using Arduino

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**Abstract:** The project describes ultrasonic blind walking stick with the use of Arduino. According to World Health Organization (WHO), 30 million people are permanently blind and 2.85 million people with vision impairment. If you notice them, you can very well know about it they can't walk without the help of other. One has to ask guidance to reach their destination. They have to face more struggles in their life daily life. Using this blind stick, a person can walk more confidently. This stick detects the object in front of the person and give response to the user either by vibrating or through command. So, the person can walk without any fear. This device will be best solution to overcome their difficulties. We are going to upgrade the project by increasing its application. In this project, we are going to use two ultrasonic sensors. So now, this smart stick will have an ultrasonic sensor to sense distance from any obstacle and a RF remote using which the blind man could remotely locate his stick.

**Key Words:**Arduino Pro mini, Ultrasonic Sensor, Buzzer & speaker, SIM800L GSM Module, Emergency button, SD card module, Transmitter & Receiver, Encoder & Decoder, LM358 IC, 555 timer, Amplifier module, DC to DC volt. Regulator for charging, Flash light, Water sensor.

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# Mask Detector Using AI

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**Abstract:** We all know that this is the ERA of Coronavirus diseases (COVID-19). It is a kind of pandemic which is growing at a fast rate and causing a health crisis. It caused many deaths last years and still counting. So, the doctors and scientists are working on the vaccine for this virus and also, they have suggested some ways to be safe from this virus, face masks are one of the most common measures to fight such virus. In this paper, we have discussed on the project about face mask detection using Raspberry Pi and a live video streaming camera. The face mask detection model was done with the help of a computer vision, CNN, image classification algorithm based on the MobileNetV2 neural network. The steps involved in the project are: firstly, we have taken the data-set of people wearing the face mask and then those not wearing the face mask, after then we pre-processed it, split the data, trained the model using MobileNetV2 neural network, tested the model, and finally implemented the model. The model has been trained with an accuracy of 95.85%. This system automatically opens the door when people are wearing the face mask and sends an alert if they don't have the face mask, to the authorities or the owner of the place. It can be used in a variety of places, include educational institutions, hospitals, churches, and retail outlets.




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# Use of Machine Learning Algorithms to Find out Genuinety of Fake News

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**Abstract:** Fake news is experiencing progress with the evolution of the means of Internet and Social media. Fake news detection in research is getting quite interest. But it also faces some challenges due to the limited resources such as datasets and processing and analysing techniques. Here, we propose a system for Fake news detection that uses machine learning techniques. We propose a dataset of fake and true news to train the proposed system. Obtained result shows the efficiency of the system. Here, we propose a system for detection of fake news that uses machine learning algorithms and techniques.

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# Linear and Morphological Image Filtering Using FPGA

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**Abstract:** FPGA technology has become one of the extremely important technologies for the implementation of image processing using real-time algorithms. . The unique architecture of the FPGA has allowed the technology to be used in many applications encompassing all aspects of image-processing.The 2D convolution algorithm is used for linear filtering and morphological filtering, which represent a basic set of image operations for several applications. In this work, an implementation of linear and morphological image filtering using an FPGA, Xilinx 11.1 ISE software, Spartan6 is presented. The system is connected to a USB port of a personal computer, which in that way forms a powerful and low-cost design station.VB Graphical user interface is used to display the output image.

**Keywords:** filtering, FPGA, image processing, Spartan6




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# Web Based Integrated Healthcare Management Sysytem

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**Abstract:** The purpose of the project entitled as "HOSPITAL MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital to develop software which is user friendly, simple, fast, and cost – effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is to register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully. System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital Management System can be entered using a username and password. It is accessible either by an give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status o each room. Users can search for the availability of a doctor and the details of a patient using the id.
The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data is well protected for personal use and makes the data processing very fast. Administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data is well protected for personal use and makes the data processing very fast

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# Web Based Voting System Using Cloud

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**Abstract:** In this exploration work. Casting a ballot is ordinarily related to governmental issues and is done with frequent abuse and manual move toward where electors stand to decide in favor of their choices. Manual democracy may prompt misbehaviors sometimes. so there is a need to carry out web-based casting a ballot framework. This is for growing the innovation from a manual democratic framework to computerized casting a ballot framework. In this particular examination, our thought is to execute internet casting a ballot framework with highlights like the plans that the particular party has executed, in view of the highlights we will cast a ballot. The fundamental explanation we want to move from a typical democratic framework to on the web casting a ballot framework is that we can consume our time and can cast a ballot from any place on the web. We have executed this by utilizing C# as a programming language, Microsoft SQL server 2012 and Microsoft sky blue as a cloud.




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# Web Chat Application

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**Abstract:** Chat application is a feature or a program on the Internet to communicate directly among Internet users who are online or who were equally using the internet. Chat applications allow users to communicate even though from a great distance. Therefore, this chat application must be real-time and multi platform to be used by many users. The development of information and communication technologies are rapidly making one of the reasons for Indonesia, especially Bandung to develop this chat application. That's because Indonesia does not always rely on outsiders. It is important for Indonesia to develop this chat application for themselves. This chat application in the manufacture begins with the collection of relevant data that will be displayed in the web and mobile versions. The programming language used to build server is Node.js with express framework and MongoDB database.

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# Webapp Service for Building Campus Community in a Campus Using MONGODB, EXPRESS JS,- REACT JS, NODE JS

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**Abstract:** In recent days, there is a rapid increase in the need for proper communication around any Institutions. If any student or faculty unfortunately encountered any problem inside the campus or about any process like placements, examination related doubts ,doubts regarding events in campus and many more , some issues may be hectic and can't be solved or addressed by their own, hence they need seniors, faculty or any member across the organization to solve their respective query or doubts. It is tough to find any seniors, faculty or any concerned member of an institutions at the correct time as they might be busy in their respective works. Therefore, this online website makes it easier to get resolved their query or doubts at correct time and with many options. It makes the query resolved in just one click ate your phone or gadgets.All the registered users on this website have a separate login to ask any query, to answer any query of any other registered user. Seniors and faculty members have opportunity to solve the query of others at their pace and time. All registered members have their profiles so that will prove the authenticity of answer given by them. Using ReactJS in building website makes it faster, productivity boosts and also this is SEO friendly. MongoDB is database which is schema-less and it can be scalable easily so it makes easy to manage data. With help of this ,an user avoid delay and difficulty.

**Index Terms:** Campus-Community, MERN, Website


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# Solar Energy Monitoring System by IOT

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**Abstract:** The Internet of Things has a vision in which the internet extends into the real world, which incorporates everyday objects. The IoT allows objects to be sensed or controlled remotely over existing network infrastructure, creating opportunities for pure integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit in addition to reduced human intervention. As technology is advancing, cost of renewable energy equipments is decreasing which has resulted in a massive increase in solar photovoltaic installations. Most of these installations act as auxiliary power source. A majority of these are installed in inaccessible locations – as close as a rooftop to as far away as a dessert. Hence they require sophisticated systems for remote monitoring of these installations using wide area networks. In this paper we will discuss a low cost IOT based embedded Solar PV Monitoring system which will make use of GPRS module and a low cost microcontroller to send the data measured at the production end on the internet, which can then be accessed anywhere. This will provide us real time information of the installation which will help us in its maintenance, fault detection and will give us a record of all the data at fixed intervals.

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# MLP versus CNN: A comparison of the two neural networks approaches for price prediction in agriculture commodities

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**Abstract :** India being among the top five producers of agriculture products, the country has a lot to gain. Prices fluctuation of agriculture commodities has indirect impacts on people's daily lives as well as the production processes. Agriculturalists need to make accurate price predictions while deciding policies to be implemented in future for agriculture commodities. Forecasting the price of commodities could assist farmers, setting the market price for their agro product before they reach the market to maximize profits. To address this challenge, this study compares the neural networks approach of MLP and deep learning approach of CNN for price forecasting of agricultural commodities. This model forecasts day-ahead prices based on commodity price time series data. In this paper, time series data of tomato for Chhattisgarh region is sampled and predicted. The experimental results demonstrate that pre-processed time sequences are input to the model and the forecasting results of both approaches are compared.

**Keywords:** Forecasting, MLP, CNN.


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# Sentimental Analysis on Reddit

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**Abstract:** Sentiment Analysis / Emotion Analysis is the process of analyzing positive or negative attitudes from text which has always received attention from researchers over the last few years. Internet users have grown rapidly with new technologies. People who comment on online platforms tend to have positive, negative, or neutral opinions. The tools available for natural language processing and machine learning allow us to start extracting emotions from social media and other approaches to process large amounts of text. The scope of this project is to differentiate topics which are colloquial in nature. This paper analyzes some challenges in emotion extraction, few approaches adopted to address these challenges and emotions on Reddit. VADER (Valence Aware Dictionary for Sentiment Reasoning) is the algorithm which is used in this project to differentiate between negative, neutral and positive sentences. This project has demonstrated that it has promising results which are proven to have compound scores and the achieved results can be useful in getting insights on business based subreddits, different communities etc.

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# Face Filter

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**Abstract:** In this paper we have elaborated about facial detection and facial recognition . It provides a general overview of Face Filter Project and deep study of how to determine the facial landmarks using Beyond Reality Face SDK (BRFv5) and facial recognition using Local Binary Pattern Histogram algorithm (LBPH). It also discusses about Google Vision API through which different filters can be applied. Our main purpose is to develop a prototype which can add beauty effects on the user's face, also it can be used to make online classes more attentive and effective as our prototype can detect a smiling face or yawning face through face detection and face recognition. This feature enhances the productivity of the online classes.

**Index Terms:** Facial Detection, Facial Landmarks, Beyond Reality Face SDK, Facial Recognition, Local Binary Pattern Histogram




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# A Study based on Navigational System for the Blind

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**Abstract:** An automation system plays the major role in assisting and satisfying the basic needs of the people there by making their life style easier. These automation systems have boosted the development of assistive technology which has helped in improving the capabilities of those people who suffer from different disabilities. An assistive technology refers to any product, equipment or a software program that help people who have difficulty in speaking, hearing, seeing, remembering, walking, and many such difficulties. The main challenge is to develop an assistive technology that makes the disabled people to perform most of their tasks independently without any support from other people. Globally, at least 2.2 billion people have vision impairment and there is a way to overcome it through assistive technology. To overcome the difficulties faced by the visually impaired the framework is designed to support the blind during his/her travel in diverse ways. It aids the visually impaired person by detecting the obstacles on his/her path which is either a solid material or a liquid substance at the pedestals. The work system is employed with sensors which scans the surroundings periodically around the person and inform them about the obstacle through the actuators and make them act accordingly. The proposed system will further improve the effectiveness in navigation of the visually impaired and will also provide people to live in a secured way.

**Keywords:** Blind, Ultrasonic, Water sensor, Detection, IOT, LED, GPS/GSM.

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# Foundations Of Data Science, Data Analytics & Exploratory Data Analysis

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**Abstract:** Data Science is the study of extraction, collection, aggregation, presentation, and safeguarding of data for use in commercial or technical problems. Despite the fact that Data Science looks to be interchangeable with databases and software engineering, it also necessitates a wide range of quantitative and qualitative skills, as well as non-mathematical competencies. Data science is primarily concerned with the dissection of data. This paper discusses the skills, tools, and the applications of data science, along with performing exploratory data analysis on a dataset from Kaggle.

**Keywords:** Data Science, Data Analytics, Big Data




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# Microcontroller Based DC Motor Speed Control

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**Abstract:** This paper reports a microcontroller-based control system to change the speed and direction of rotation of a DC motor. Armature voltage is varied by pulse width modulation (PWM) of input DC voltage by using the developed microcontroller's program. Thus the speed of the DC motor is changed. The direction of rotation of the DC motor is changed by initiating an interrupt signal to the microcontroller using push switches. To drive the DC motor, a four-channel monolithic integrated buffer circuit was used. PCB of the control circuit has also been designed and fabricated. Test data shows very good agreement with the expected results.

**Keywords:** Microcontroller, DC motor speed, PWM signal.

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# Heart Disease Prediction Using ECG and Machine Learning

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**Abstract:** Heart related diseases or Cardiovascular Diseases (CVDs) are the main reason for a huge number of deaths in the world over the last few decades and has emerged as the most life-threatening disease, not only in India but in the whole world. CVD is the one of the main reason of death compared to other diseases globally. Nearly 17.9 million people die every year because of this disease. We have used the ECG sensors to produce the ECG waveform on the display. In these days ML algorithms are used for forecasting of many other applications. These algorithms can be used for forecasting of CVD. In this project various machine learning models like Support Vector Machine (SVM), Logistic Regression, K-nearest neighbors, Decision Tree and Random Forests Classifier were used to predict the heart disease. This system is capable to transmit the acquired sensor data to a cloud very fast. The project mainly focuses on which patient is more likely to have a heart disease based on various ML models.

**Keywords :** CVD, ML,Heart Disease, WHO, Cloud, SVM, ECG, Sensor




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# Flight Planning and Modeling for Drone Technology

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**Abstract:** This paper proposes the research carried out used modern tools ( MATLAB/Simulink ) to model controls system for Quadcopter UAV with haptic control system to control the quadcopter in a virtual simulation environment and in real time environment. The concept is based on drone technology in which we train the drone in the virtual environment and its algorithms are tested and refined. It is the behavioral modeling of a drone or Unmanned Aerial Vehicle (UAV) and the evaluation of its performance in a virtual environment that is called drone simulation. Drone development requires extensive simulation, which is a critical stage. Drone simulation is made easier using MATLAB® and the UAV Toolbox, which allows you to prior to constructing prototypes, it is necessary to understand drone dynamics and conduct tradeoff analysis. Testing the fine-tune parameters and models before transferring them to the drone Test the resilience of models and algorithms in the presence of edge circumstances without endangering the drone's operation.

**Keywords:** Drone, MATLAB, Simulink, UAV Toolbox