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3.3.1 Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

3.3.1.1 List of Papers Published during the AY: 2021-22

Sr. No.	Title of the Paper	Name of the Teacher	Name of the Journal	Calendar Year of Publication	ISSN Number
1	Enhanced Performance of Tin Halide Perovskite Solar Cell Model Using SCAPS - ID	Dr. Usha Mandadapu	Journal of Current Research in Engineering and Science	2021	2581_611X
2	Object Detection and Character Recognization for Blind Peoples	Sneha Farkade	INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT (IJSREM)	2021	2582-3930
3	Smart Health-care Monitoring System Using IOT	Bharti Kudale	International Journal of Research Publication and Reviews	2021	2582-7421
4	Generation of OWASP Attacks Free Secure Algorithm to Detect and Prevent OWASP Attacks	Prof.Prateeksha Chouksey	International Journal of Research Publication and Reviews	2021	2582-7421
5	Ration Distribution System Using RFID Smart Card	Prateeksha Chouksey	International Journal of Advance Scientific Research and Engineering Trends	2021	2456-0774
6	Fine-Grained Facial Expression Recognition using Machine Learning	Pallavi Patil	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	2021	2321-9653
7	MILITARY SPYING ROBOT WITH MULTIPURPOSES IN SECURITY APPLICATIONS	Prof.Sneha Farkade	International Research Journal of Modernization in Engineering Technology and Science	2021	2582-5208
8	College Enquiry Chat bot using Python	Prof.Bharati Kudale	International Journal for Scientific Research & Development	2021	2321-0613
9	REVIEW ON GARBAGE MONITORING SYSTEM AND WASTE SEGREGATOR	Prof. Pallavi Patil	International Research Journal of Modernization in Engineering Technology and Science	2021	2582-5208
10	Fine-Grained Facial Expression Recognition using Machine Learning	Prof. Pallavi Patil	International Journal of Scientific Research & Engineering Trends	2021	2395-566X
11	The LPG Detection Using Internet of Things	Prof. Aparna Patil	International Journal of Innovative Research in Science, Engineering and Technology	2021	2319-8753
12	Disease Prediction and Consultation Using Machine Learning	Prof. Aparna Patil	International Journal of Innovative Research in Science, Engineering and Technology	2021	2320-9801
13	A review on Disease Prediction and Consultation Using Machine Learning	Prof. Aparna Patil	International Journal of Innovative Research in Computer and Communication Engineering	2021	. 2455-2143
14	Heart Disease Prediction Using Machine Learning	Prof. Archana Burujwale	International Journal of Innovative Research in Computer and Communication Engineering	2021	2320-9798

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15	Smart Mirror	Prof. Harshalata Mahajan	International Journal of Science, Engineering and Technology	2021	2348-4098
16	Rover Sieth	Prof. Patwardhan Sushma	International Journal of Scientific Research and Engineering Trends	2021	2395-566X
17	Automatic medicine pill dispenser for covid 19 patients using IOT	Prof. Sujata Girawale	International Journal of Science, Engineering and Technology	2021	2348-4098
18	Android Based C19 Warrior Robot	Prof. Patwardhan Sushma	International Journal of Scientific Research in Engineering and Management	2021	2582-3930
19	Smart safety & security system against COVID-19	Prof. Harshalata Mahajan	International Journal of Scientific Research in Engineering and Management	2021	25823930
20	MultiSensor Obstacle Detection on Railway Tracks	Prof. Sukruti Taori	International Research Journal of Engineering and Technology	2021	2395-0056
21	Reduce invention in cognitive Cellular Network By Applying Cuckoo Search Algorithm	Prof. Komal Wanzare	International Journal of Innovative Science and Research Technology	2021	2456-2165
22	Smart Trolley using RFID	Prof. Sujata Girawale	International Journal of Scientific Research in Engineering and Management	2021	2582-3930
23	E-cycle using BLDC motor and Android Application for Battery Indication	Prof. Komal Wanzare	International Journal of Scientific Research in Engineering and Management	2021	2582-3930
24	Price Comparison System Based on Web Scrapping and Spark	Prof. Shalini Nigam	International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering	2021	2320 – 3765
25	Survey on Safety Detector System at Public Places	Prof. Poonam Thorat	International Journal of Innovative Research in Computer and Communication Engineering	2021	2320-9801
26	Implementation of News Classification System based on Area	Prof. Krishnanjali Shinde	International Journal of Innovative Research in Computer and Communication Engineering	2021	2320-9801
27	IOT based Safety Detection System at Public Place	Prof. Swati Gaikwad	International Journal of Innovative Research in Computer and Communication Engineering	2021	2320-9801
28	Managing E-Voting Process through Blockchain	Prof. Shreesudha Kembhavi	Journal of Emerging Technologies and Innovative Research	2021	2349-5162
29	Air Quality Prediction Using Machine Learning	Aphale Amruta	International Journal of Innovative Research in Computer and Communication Engineering	2021	2320-9801
30	VIRTUAL STORE USING JQUERY, JAVASCRIPT AND PHP TECHNOLOGIES	Aphale Amruta	International Research Journal of Modernization in Engineering technology and science	2021	2582-5208
31	A Detailed Review on Additive Manufacturing Methods for Healthcare Sector	Rahinj Vaibhav Chandrabhan	International Journal of Disaster Recovery and Business Continuity	2021	2207-8363
32	Multipurpose Military Surveillance Robot	Sneha Farkade	International Journal for Scientific Research & Development	2021	2321-0613

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33	Advancements in Geopolymer Technology: A Comprehensive Review and Future Prospects	Dr. Ushadevi Patil	EDUZONE:InternationalPeerReviewed/RefereedMultidisciplinaryJournal	2021	2319-5045
34	Advancements in Geopolymer Technology: A Comprehensive Review and Future Prospects	Prof. Seema Shiyekar	EDUZONE:InternationalPeerReviewed/RefereedMultidisciplinaryJournal	2021	2319-5045
35	Advancements in Geopolymer Technology: A Comprehensive Review and Future Prospects	Prof. Poonam Nandihalli	EDUZONE:InternationalPeerReviewed/RefereedMultidisciplinaryJournal	2021	2319-5045
36	Geospatial Technology in Disaster Management: Harnessing Spatial Intelligence for Effective Preparedness, Response, and Recovery	Prof. Dhananjaya A S	International Journal of Open Publication and Exploration	2021	3006-2853
37	Geospatial Technology in Disaster Management: Harnessing Spatial Intelligence for Effective Preparedness, Response, and Recovery	Prof. Vinayak B Kulkarni	International Journal of Open Publication and Exploration	2021	3006-2853
38	Geospatial Technology in Disaster Management: Harnessing Spatial Intelligence for Effective Preparedness, Response, and Recovery	Prof. Shilpa Mahajan	International Journal of Open Publication and Exploration	2021	3006-2853
39	Geospatial Technology in Disaster Management: Harnessing Spatial Intelligence for Effective Preparedness, Response, and Recovery	Prof. Sonam Agrawal	International Journal of Open Publication and Exploration	2021	3006-2853
40	Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems	Dr. Jambi Ratna Raja Kumar	International Journal of New Media Studies	2021	2394-4331
41	Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems	Prof. Bharati Kudale	International Journal of New Media Studies	2021	2394-4331
42	Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems	Prof. Prerana Rawat	International Journal of New Media Studies	2021	2394-4331
43	Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems	Prof. Archana Burujwale	International Journal of New Media Studies	2021	2394-4331
44	Secure and Efficient Data Transmission in Internet of Things (IoT) Networks: A Review of Protocols and Techniques	Dr. Jambi Ratna Raja Kumar	International Journal of Business, Management and Visuals	2021	3006-2705
45	Secure and Efficient Data Transmission in Internet of Things (IoT) Networks: A Review of Protocols and Techniques	Prof. Bharati Kudale	International Journal of Business, Management and Visuals	2021	3006-2705

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47	Secure and Efficient Data Transmission in Internet of Things (IoT) Networks: A Review of Protocols and Techniques	Prof. Archana Burujwale	International Journal of Business, Management and Visuals	2021	3006-2705
48	Emerging Trends in Quantum Computing: Opportunities and Challenges for Practical Implementation	Dr. Jambi Ratna Raja Kumar	International Journal of Open Publication and Exploration	2021	3006-2853
49	Emerging Trends in Quantum Computing: Opportunities and Challenges for Practical Implementation	Prof. Bharati Kudale	International Journal of Open Publication and Exploration	2021	3006-2853
50	Emerging Trends in Quantum Computing: Opportunities and Challenges for Practical Implementation	Prof. Prerana Rawat	International Journal of Open Publication and Exploration	2021	3006-2853
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Acceptance Letter

Dear Author(s): Usha Mandadapu, S.Victor Vedanayakam

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This is to enlighten you that above manuscript appraised by the proficient and it is **accepted** by the Board of Referees (BoR) of 'Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP)' for publication in the **'International Journal of Innovative Technology and Exploring Engineering'** that will publish at **Volume-8 Issue-12, October 2019** in Regular Issue on **10 October 2019.** It will be aavailable live at https://www.ijitee.org/download/volume-8-issue-12/

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OBJECT DETECTION AND CHARACTER RECOGNIZATION FOR BLIND PEOPLE.

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ABSTRACT –

In this paper, we investigate fully unsupervised common object discovery, inspired by the recent success of supervised and weakly supervised common object discovery. In general, object co-localization allows the simultaneous positioning of objects belonging to the same class through multiple images. Conventional object detection/localization usually involves object instance bounding box annotations or, at the very least, image-level labels to indicate the presence/absence of objects in an image. Without knowledge of the total number of common objects, this unsupervised object discovery problem is represented as a sub-graph mining problem from a weighted graph of object proposals, where nodes represent object proposals and edges represent similarities between neighboring proposals. Concurrently, positive images and common objects are discovered by building sub graphs of closely associated nodes, each of which represents a distinct object pattern. The human language is limited to spoken and written language. As a result, visually impaired individuals can be compelled to collect data through their voices. Visually impaired individuals would be able to comprehend the text found within the captured image with the assistance of this project.

Key Word: OCR, CNN, Blind, Feature Extraction.

1.INTRODUCTION

When our brain is confronted with an image, it almost immediately recognizes the objects contained inside. A machine, on the other hand, requires a significant amount of time and training data to recognize these items. Recent hardware and deep learning advances, on the other hand, have made the field of computer vision more accessible and intuitive. We're still looking for ways to create a 'detection' or 'recognition' system that can match the accuracy of a person. Weakly Controlled Object Localization (WSOL) has recently attracted a lot of attention. Its aim is to recognize common objects in photographs by indicating their presence or absence with annotations. This project, which generates the same type of output as WSOL but includes annotation of object presence/absence, focuses on discovering and localizing common objects in real-world images at the same time.The aim of the project is to bring together cutting-edge object detection techniques with real-time performance. Object detection systems that rely on additional computer vision techniques to supplement the deep learning-based approach face a major challenge, resulting in sluggish and inefficient performance. In this project, we use deep learning to solve the problem of object detection from beginning to end.

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Smart Health-care Monitoring System Using IOT

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ABSTRACT

Smart Health-care Monitoring System is based on IOT Architecture. It helps Doctor's to monitor patients live data using IOT sensors and helps them to provide live assistance in medical conditions. IOT in healthcare is the key player in providing better medical facilities to the patients and facilitates the doctors and hospitals as well. The proposed system here consists of various medical devices such as sensors and web based or mobile based applications which communicate via network connected devices and helps to monitor and record patients' health data and medical information. The proposed outcome of the paper is to build a system to provide world-class medical aid to the patients even in the remotest areas with no hospitals in their areas by connecting over the internet and grasping information through about their health status via the wearable devices provided in the kit using a Arduino micro-controller which would be able to record the patient's heart rate, blood pressure. The system would be smart to intimate the patient's family members and their doctor about the patient's current health status and full medical information in case any medical emergency arises. The collected information can be used to analyze and predict chronic disorders or other diseases such as heart attacks in preliminary stage itself using the data mining techniques that will also provide the approach advantageous for decision making.

Keywords: Internet of Things, IOT in Healthcare, Patient Monitoring, Arduino, Smart Health Monitoring.

I. INTRODUCTION

Smart Health Care monitoring System is a system designed to help doctors to reach each patients and help them to monitor his data without using any physical sources. Smart Health Care System uses IOT sensors to execute its functionality, Users must have to connect with given environment to access its live data and have to create its profile on given sources. After the user created and grant permission to send data the system will create a database of a user. The doctor must have to select its patent in-order to access its live personal data.
After successful connectivity in between doctor and patient, doctor have freedom to monitor patient data & give treatment according to patient health. Smart Health Care System will be able to differentiate between contagious virus and Non-contagious virus so doctor can provide better assistance.The Internet of things is the inter-connection of devices, apps, sensors and network connectivity that enhances these entities to gather and exchange data. The distinguishing characteristic of Internet of Things in the healthcare system is the constant monitoring a patient through checking various parameters and also infers a good result from the history of such constant monitoring. Many such devices equipped with medical sensors are present in the ICUs now-a-days. There could be instances where the doctor couldn't be alerted in time when there is an emergency, despite of 24 hours of monitoring. Also there might be hurdles in sharing the data and information with the specialist doctors and the concerned family members and relatives. The technology that enhances these features is already available but is not accessible and affordable by most of the people in developing countries such as India. Hence these solutions to these problems can be just a simple extension to the current devices which don't have these facilities.

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Generation of OWASP Attacks Free Secure Algorithm to Detect and Prevent OWASP Attacks

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ABSTRACT

Most web applications have serious bugs (faults) disturbing their security, which makes them prone to attacks by hackers to stop these security complications from happening it's of ulmost importance to grasp the representative software faults. This paper pays to the current body of information by giving a field study on OWASP(Open Web Application Security Project) Top Ten Attacks of the foremost commonly spread and high web application vulnerabilities: Web application attacks may include Injection, Broken Authentication, Sensitive Date Exposure, XML External Entities (XXE), Broken Access Control, Security misconfigurations, Cross-Site Scripting, Insecure Deserialization, Using Components with Known Vulnerabilities and Insufficient Logging & Monitoring. . during this paper, we deliver an analysis on several defence mechanisms in contradiction of every OWASP TOP ten Attack. We recommend a model that highlights the key weaknesses enabling these attacks, which provides an analogous perspective for learning the available defences. This paper proposes to present a top level view a way to check vulnerabilities. this is often supported the OWASP testing guide or an inspection approach and ideas utilized by penetration testers testing in a very web environment. The algorithm castoff gives improved performance and security compared to the present solution. the most aim is to produce a method which provides high security to the database of the online application.

Keywords:. OWASP attack, SDLC phase attack, Detection algorithm, Prevention algorithm.

1 INTRODUCTION

Nowadays, web applications have developed an important a part of our existence and culture. We utilise web applications in practically each facet of our lives: banking, online shopping, socialising, health care, education, taxes, entertainment, and news, to call some. All of those web applications are incessantly accessible from almost everywhere with a web connection, and that they help us to speak and work together at a rapidity that was thought impossible just a few years ago. By introducing harmful scripts into web servers, XSS (cross-site scripting) vulnerability acts united of the foremost prevalent security issues in web applications. XSS takes place when an online application services invalidated or un-encrypted user input confidential generated output. XSS can cause weighty violations on the appliance or for the client by injecting harmful scripts into the place where an online application receives user input. The code can cause the robbery of user accounts and cookies and spread of personal data just in case the input isn't authenticated. At the identical time, attackers invent new traditions to bypass defence mechanisms employing a variation of techniques, in spite of the several countermeasures that arebeing introduced.

In today's world, Web demands must be surveyed an overwhelming development through those cyberspaces, which are produced for various purposes. At present, practically everybody is finished interaction for the workstation innovation. Web requirements openly available an interface through which customers could assistant with managing customer data, administration. Provider employments database to capacity about customer precise majority of the information. This database are exploited eventually inspecting those attackers toward different plans for getting customer private information. Web provisions would those strong proposes to attackers should approach the natural database, similarly as they're as a rule defenceless an attack. Regarding

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Fine-Grained Facial Expression Recognition using Machine Learning

Prof. Pallavi Patil[1], Siddhi Bokil[2], Bhakti Vispute[3], Kalyani Limkar[4], Samruddhi Waghmare[5]
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Abstract: ***Emotion detecting device that can evaluate the fundamental human facial expression. A mood prediction approach based on human facial emotions is proposed in this project. The tool is used to detect humankind's mood and to eventually play the audio file that referred to human emotions by using this result. The machine first takes the human face as its input, then there will be a further step. The identification of the mask and the eye is performed. After this, the human face is recognized using the attribute extraction technique. This way, the emotion of the person is recognized by a facial picture function. These signature points are found by the extraction of the tongue, mouth, and eyes, and eyebrow. If the emotional face fits perfectly with the emotion dataset face, the people's exact feelings can be identified to play the emotional audio file and news data are collected using an API based on user preferences. Training on a small range of features faces will gain recognition under varying environmental conditions. The solution proposed is quick, effective, and precise. In the field of identification and detection, the system plays an extremely important role.***

Keywords: Face Detection, Feature Extraction, Face Emotion.

I. INTRODUCTION

Face recognition and authentication are one of the most important fields of human-computer interactions. There are relatively low facial characteristics and it is most interesting to study them. Face Objects are a difficult task to locate and classify.
To find a human emotion with the face of a person, which can be one of the most difficult tasks in your career. A face is the best way to identify and detect an individual. Without the face detection phase, no recognition algorithms can work. The identification rate influences the stage of acknowledgment. It's an intriguing job to detect and find an unseen non-face from still photographs of all these noises.
Emotional mood detection is one of the topics in different fields that solve diverse problems. In addition to typical difficulties in filmed facial images in unregulated situations, such as diverse poses, various lighting, different facial recognition expressions, and different emotionally recognizable sound thresholds. The most critical thing for comparing face characteristics and sounds Mel frequency components is the database for every face and mood sensing device. Facing characteristics for database construction are estimated and stored in the database. The database is then used by various algorithms to evaluate the face and emotion.
Applications for the identification of face emotions are also difficult because face pictures could be influenced by changes in the scene, including changes in poses, posture, or enlightenment. This method aims mostly to find human mood with a picture of the support face as an input and then to play an audio file of these emotional effects. A technique for face recognition that compares the image of the train face with the original image of the entrance.
The solution proposed is quick, effective and precise. Compared to the current method, this device provides reliable outcomes. In the field of identification and detection, the system plays an extremely important role. This is rather rapid relative to conventional approaches, which provides valuable results.

II. RELATED WORK

The thesis explores many well-known and special methods used for the extraction of facial expressions and emotional grading. Several algorithms are contrasted with the output parameters such as precision in identification, emotional quantity, experimentation databases, classification used, etc. [1] in research on facial expressions.
In this work, the facial expressions from the face pictures are identified and feelings are classified for final judgement. The machine uses a simpler technique for face position known as 'Viola Jones Face Detection.' The club uses a subset sorting strategy to increase the accuracy of identification and classification processes for the various characteristic vectors. The combined characteristic is finally qualified and graded using the classification technique of SVM, Random Forest and KNN[3].

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MILITARY SPYING ROBOT WITH MULTIPURPOSES IN SECURITY APPLICATIONS

Pro. Sneha Farkade*1, Prakash Naikwadi*2, Laxman Pache*3, Prasad Dhakne*4, Aniket Kasale*5

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ABSTRACT

The main objective behind developing this robot is for surveillance of human activities in the field region in order to reduce infiltration from the enemy side. The robot consists of camera which can transmit video of the field in order to prevent any damage loss to human life. The robot consists of metal detector and gas detector for the prevention of damage of field.With suitable sensors and cameras to perform different missions, mobile robots are operated remotely for reconnaissance patrol and relay back video images to an operator. Now-a-days android smart phones are the foremost popular gadget. There are multiple applications on the web that exploit inbuilt hardware in these mobile phones, like Bluetooth,GPS technology to regulate other devices. the proposed system designed a robot that can be controlled using an application running on an android phone. According to commands received from android the robot motion are often controlled. And hence the required actions can be taken.

Keywords: Robot, Camera, GPS(Global Positioning System), Metal Detector, Ultrasonic Sensor.

I. INTRODUCTION

According to the UNICEF, almost 10 000 people per year are killed by land mines, most of whom are civilians. Thousands more individuals have lost limbs, livelihoods, or loved ones as a result of the disaster. In many cases, the battle has ended, but the threat of mines remains because to the difficulties of locating and detonating them. Yet, destroying them is imperative for future safety, and with over 100 million planted world wide it's a frightening task. Substantial action is required, but one must disarm 100 million deathtraps.

The computer industry added brains to the brawn of already existing equipment as transistors and integrated circuits were more widely used. In 1994, Ericsson, a telecommunications company, developed Bluetooth technology.[2]

The introduction of technology has ushered in a revolution in the realm of robotics and automation, which spans a wide range of industries from domestic labour to defence. Smart phones have revolutionised the global market by changing people's lifestyles and delivering a wide range of applications for various operating systems. Android OS is one of these open-source operating systems that has had a huge impact by enabling various robotics applications to help people in their daily lives. [1]

In this system, disposal technicians and mission controllers with a variety of challenges, including high risks in it. A typical mine disposal mission will initially involve investigating the site using a remote controlled robot and disposing of the mine. The device also incorporates a camera that allows not only seeing but also recording. The whole system is controlled via an android application. An Android smart phone will act as a remote controlled device for movement of the robot. An Android application will be developed for the same. The bluetooth module will act as an interface between Smartphone and arduino. The bluetooth module will give the commands given by the smart phone to the controller. The Controller will act as the brain of the robot. The robot's movement is going to be decided by the controller. The Controller will be programmed with the help of Embedded C programming. In addition to the present, we even have an ultrasonic sensor and also a detector to detect bombs.

II. RESEARCH WORK

The existing robots are whole operated with the help of remote control. This operation is sometimes tedious, less efficient and has no guarantee for its security. The existing system consists of trade-off between processing speed, insecure communication and cost. With growing trends, controllers are developing tremendously. Hence

College Enquiry Chat bot using Python

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Abstract— This project is focusing on creating a chatbot to be used by students to get their queries responded easily from the college website. The College Enquiry Chatbot has the capacity to make friendly conversations; respond to the course and faculty details; answer the frequently asked questions; and give the timings, address, contacts, and events information of the. To build the chatbot, Most of the existing chatbots lack empathy and fail to accommodate anything outside of the script. In order to address these problems, the College Enquiry Chatbot extends the implementation of the chatbots by. Although sentimental analysis correctly recognizes the user's query as positive, negative and neutral, the system was partially successful in adding empathy to the chatbot. It is because the system requires more rigorous training data to handle all queries which are off-script. However, for such queries, active learning helps to improve the chatbot via performance since it correctly understands the user's questions, asks clarifying questions, and then retrains the system to give the response what the user intends to get. The future work includes training the chatbot with more varied data; increasing the scope of the chatbot by adding a speech recognition feature so that users can speak to get responses; and including integration with multiple channels such as phone call, SMS, and various social media platforms.

Keywords: Natural Language Processing (NLP), Natural Language Toolkit (NLTK), AI or Machine Learning Algorithms

I. INTRODUCTION

This project is focusing on creating a chatbot to be used by students to get their queries responded easily. A chatbot is a program which can do real conversations with textual and/or auditory methods. Using Artificial Intelligence (AI), chatbots can simulate human conversations. There are two categories of chatbots. One category is command based chatbots where chatbots rely on a database of replies and heuristics. The user must be very specific while asking the questions so that the bot can answer. Hence, these bots can answer limited set of questions and cannot perform function outside of the code. The other category is chatbots based on AI or machine learning algorithms, these bots can answer ambiguous questions which means the user do not have to be specific while asking questions.

Thus, these bots create replies for the user's queries using Natural Language Processing (NLP) Analyzing the request Identify Intents and Entities Building a Response

Figure 1 shows how a chatbot works. Whenever a user asks any query, the bot will first analyze the request, then identifies intents and entities, builds a response and sends it back to the user. For example, if a student wants to know the office hours of a faculty, then the intent will be office hours and entity will be name of the faculty in this case. Chatbots are motivated by the need of traditional websites to provide a chat facility where a bot is required to be able to chat with user and solve queries. When live agent can handle only two to three operations at a time, chatbots can operate without an upper limit which really scales up the operations. Also, if any school or business is receiving lots of queries, having a chatbot on a website takes off the load from support team. Having a chatbot clearly improves the response rate compared to human support team. In addition, since millennials prefer live chats over a phone call, they find a chatbot, which provide a highly interactive marketing platform, very attractive. There can be some scenarios where a business or school receives same queries in a day for many times and support team must respond to each query repetitively. Lastly, the most important advantage of having a chatbot is that it is available 24/7. No matter what time it is, a user can get a query solved. All these advantages of a chatbot constitute the motivation to implement a College Enquiry Chatbot. Before implementing College Enquiry Chatbot, various existing chatbots were reviewed such as Amazon Shopping App, Alexa, Bank of America (Erica's bot) 3 and CNN news bot. In order to understand the requirement of a chatbot, consider an example of Amazon Shopping App. In this app, when a customer buys an item, he/she does not have any information about how to return the item. To get this information, the customer must call and wait to talk to customer representative for a long time. However, this whole process is tedious for a customer. Hence, Amazon created a chatbot to answer simple queries of customers. Similarly, the College Enquiry Chatbot is designed to help students to get their queries solved on a fingertip. downside I found while utilizing the previously mentioned chatbots is absence of personality and conversational flow.

II. PROPOSED SYSTEM

chatbot is a web Based software that is used to interact between a computer and a human in natural language like human's chat. Chatbots chat with the user in a conversation in place of a human and reply to the user. The goal of this report on chatbot was to resemble a human being in the way they interact, trying to make the user think he is chatting with another human being. The chat bot application helps the students to access the College related information from anywhere with internet connection. This system reduces work of college administration providing information to students and also reduces the workload on the staff to answer all the queries of the students. Chatbots are virtual users or virtual assistants for communicating via messaging or chat. They are programs which communicate with a user through messaging or chat interface. Chatbot is designed for college purpose where the students would not have to visit the campus personally instead everything like notices, results, timetable, assignments would be made available at the fingertip just with the help of mobile phone and internet connection through a login. Also, the faculty would not require to make constant announcement in the class about a particular notice;

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REVIEW ON GARBAGE MONITORING SYSTEM AND WASTE SEGREGATOR

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ABSTRACT

In various states solid waste management is major problem in India. Most of garbage is found at roadsides due to overloading of the dustbins. This causes harm to environment. There is no proper management of waste. The degradable and nondegradable waste is directly burnt, dumped in open fields or even thrown in rivers and seas. This causes a lot of air, land and water pollution respectively. In various areas waste segregation is done with the help of rag pickers. This may led to illness or severe diseases. This paper reviews few systems for management of garbage. The systems are designed and proposed for taking care of conventional processing of garbage. The preceding review paper uses cameras, ultrasonic sensor, GSM, Arduino board, microcontroller etc. the proposed system uses ultrasonic and infrared sensors, GSM, Arduino, microcontroller, Rain sensor and motors.

Keywords: Garbage management, Dry waste, Wet waste, Sensors.

I. INTRODUCTION

It is must keep our environment clean and hygienic for today and better future of India. It is noticed that many times the dustbins and garbage bins kept in the public places are overflowing as there is no periodic collection of garbage from the dustbins. The overflowing of garbage can cause harmful bacteria and unhygienic atmosphere. This may increase in insects and mosquitoes which will badly affect human health. The proposed garbage bins should overcome such problems by notifying garbage bin status and even by helping to separate dry and wet waste which will be further useful for various processes like Recycling and composting. By notifying the garbage collector about garbage level status can reduce unwanted trips of garbage vehicle which will help to save fuel. . This paper centres about the innovation of dustbins to reduce human efforts and help to save environment.

II. LITERATURE REVIEW

The author made analysis between the dustbins existing and pollution in that area. He provided dustbins in a clustered pattern in the Dhaka city. There he noticed the previous and additional dustbins were not sufficient. By using GUI the amount of pollution increased due to insufficient dustbins is calculated. The other author in his case study found that most of the waste was found at roadsides due to overflowing of garbage. The garbage collectors did not keep propre watch and did not collected waste time to time. So, the author equipped a smart dustbin. The dustbin was connected to ultrasonic sensors. This dustbin helped in measuring the garbage level in the dustbin. He attached 3 ultrasonic sensors at different levels. This was a good project but was not experimented in real time as it was not economically feasible due to three ultrasonic sensors. Doing case study on it, author [2] designed a smart dustbin with a plus idea. He attaches a ultrasonic sensor and a camera near that dustbin. The camera send continuous snap of dustbin to the control room. With the help of camera and ultrasonic sensor notification was send to control room and further action of collection of garbage to be taken. But this project was also not experimented in real life. Further, author [3] proposed a smart garbage system to reduce wastage of food waste. By using various IOT skills the dustbin segregated wet waste from the dry waste. This project was experimented for one year in Republic of Korea. The waste food wastage was decreased by 33% through this project. The food waste was later burnt and processed to make fuel. Later the author Li Cuoa, Wei Xiang worked on a smart dustbin to utilize garbage resources and efficiently reduce environmental pollution. The main moto of this project was to reduce garbage sorting burden on people. The author used garbage classification and recognition method which was based on transfer learning. The author Rashmi G, Mohammed Ameenulla stated that, in survey report from World Health Organization study 9 out of 10 people

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Fine-Grained Facial Expression Recognition using Machine Learning

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Abstract- **A face emotion detection system that cans analyses basic human facial expressions is being developed in this project. The proposed method analyses a person's face to determine his or her mood, and then plays an audio file that is related to that person's emotion based on the information obtained from the face. The system will first recognize a human face and then proceed to the next step in the process, and so on. The process of face detection is carried out. Following that, the technique of feature extraction is used to recognize the human face.. This method aids in the recognition of the human's emotion by utilizing features of the face image. Those feature points are discovered through the feature extraction of the lip, mouth, and eyes, as well as the brow. If the input face matches exactly to the face in the emotions base dataset, we can determine the exact emotion of the human and play the audio file that corresponds to the exact emotion of the human. In addition, we recommend music based on the mood that has been detected. Recognition under a variety of environmental conditions can be achieved through training on a small number of distinguishing characteristics of different faces. A straightforward, efficient, and accurate approach is proposed here. In the field of recognition and detection, systems play a critical role in achieving success.**

Keywords- Face Detection, Feature Extraction, Face Emotion, Recommendation.

I. INTRODUCTION

Mood detection based on emotion is a current topic in a variety of fields, and it has the potential to provide solutions to a variety of problems. Additionally, traditional challenges in captured facial images under uncontrolled settings such as varying poses, different lighting and expressions for face recognition, and different sound frequencies for emotion recognition, as well as different sound frequencies for emotion recognition, must be overcome. The database of any face and mood detection system is the most important part of the system because it allows for the comparison of the face features and the sound Mel frequency components. For the purpose of database creation, the features of the face are calculated and stored in the database. The data in this database is then used to evaluate the expression and emotion on the face using a variety of algorithms.

Emotional aspects have a greater impact on social intelligence, such as communication comprehension and decision-making, and they also aid in the understanding of human behavioural attitudes. Emotions play a significant role in communication situations. Emotion recognition can be carried out in a variety of ways, including verbal and nonverbal communication. Voice (Audible) is a verbal mode of communication that can be heard. Nonverbal communication includes nonverbal expressions such as facial expressions, actions, body postures, and gestures. Humans are capable of recognising emotions without any significant delay or effort, but machine recognition of facial expressions is a significant challenge.

The detection and identification of faces is one of the most fascinating areas of human- computer interaction currently under investigation. The number of distinguishing facial characteristics is relatively low, making it a particularly interesting task to observe them. The detection and identification of face objects from a person's face is a difficult task.

Searching for and recreating a human emotion using a human's face can be one of the most difficult assignments you will encounter in your professional life. A person's face is the most reliable way to detect and recognize them. There will be no recognition algorithms that work if the face detection step is skipped. The recognition stage is influenced by the rate of detection. To detect and localize an unknown non-face from a still image in the midst of all of this noise is an extremely challenging task.

Face emotion detection applications are still a difficult task to complete because face images can be affected by changes in the environment, such as changes in pose, changes in facial expression, or changes in illumination. Main goal of this system is to determine the human mood

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The LPG Detection Using Internet of Things

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ABSTRACT: Industrial automation has been quite prevalent these days due to its unique significant advantages. This is done by utilizing local communication protocols and remote control and tracking of industrial system constraints utilization node MCU & Integrated Web Server Technologies. In this paper, we suggest wireless data gathering frameworks that enable each detector node to track the variability in its atmosphere whilst at the same time minimizing its power consumption. In the proposed device, the temperature detector and the gas detector are used to determine the environment and the same time minimizing its power consumption .In the proposed device the temperature detector and the gas detector are used to determine are used to determine environment and the undesirable gas within the manufacturing plant. The scope of the industrial Web incorporates several opportunities throughout the processing industry, including oil and natural gas processing, biological, speciality, radiological, petroleum, manufacturing, medical, food and beverages, fuel, concrete, water and sewage paper and metal. For many of these business sectors, a transition in Reliability or efficiency of 1% to 2% can offer substantial benefits by conserving energy.

KEYWORDS: IOT, node-MCU, Gas Leakage.

I. INTRODUCTION

The Internet of Things (IOT) could also be a quickly developing innovation in Ventures. IOT is reason for industry turn of events. The improvement of home computerization has gotten obligatory in places where individuals are processing themselves are processing themselves to keen home ideas. Gas spillages in open or shut territories can support be deadly. Locator frameworks for gas spillage didn't caution the individuals when the gas gets spilled [1].IOT innovation will absolutely will advise the proprietor by sending instant messages and emails. It can even caution them by phone .It is the ability to anticipate unsafe circumstance so individuals might be made mindful before by performing information examination on sensor readings [2].

II. RELATED WORK

When the world moves the more technologically sophisticated we notice that emerging technologies is advancing further into our work and personal life. A variety of different of industrial IOT applicable has been established in the past couple of the years. This was introduced by RFID technologies where computer chips relay identified information to the reader via wireless transmission. So more development goes wireless sensor networking (WSNs), which primarily used integrated cognitive sensor for sensing so tracking purposed. Internet of Thinking is concept of recognize ubiquitous presence in the world of a number of things that can communicate with each other using wireless ad wired communication and special communicating schemes and collaborate with other things to build new apps facilities and accomplished shared objectives.

III. METHODOLOGY

System methodology V-Model technique was used to acquire the project. This technique is very easy to apprehend and utilize. The simplicity of the technique also makes it similar to accomplished. The V-Model is based on relationship of testing stage for corresponding improvement level. This means that for every single segment in the improvement brief, there is a directly correlated testing phase .This is a highly restricted model and the next stage start only after the end of the previous stage.

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Disease Prediction and Consultation Using Machine Learning

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ABSTRACT: The medical industry deals with massive amounts of data on a regular basis. Using traditional approaches to handle large amounts of data can have an impact on the outcome. Machine learning algorithms can be used to discover facts in medical research, particularly for disease prediction. For the analysis of patient medicines and specialists, early disease recognition is critical.To diagnose various disorders, machine learning algorithms such as Decision trees, Support vector machines, Multilayer perceptrons, Bayes classifiers, K-Nearest Neighbors Ensemble classifier techniques, and others are utilised. Machine learning algorithms can help predict diseases quickly and accurately.This study looks at how machine learning techniques are used to forecast various diseases and their forms. This study looked at research publications on chronic renal disease prediction, machine learning, heart disease, diabetes, and breast cancer, among other topics. The hybrid technique, which improves the performance of individual classifiers, is also investigated in the research.

KEYWORDS: Dynamic policy, patient preference learning, physician recommendation

I. INTRODUCTION

Machine Learning is an area of artificial intelligence that tries to give computer methods for accumulating, changing, and updating the knowledge of intelligent systems. Artificial intelligence (AI) enables computers to analyse their surroundings, execute certain functions, and improve their chances of solving real-world problems. With technical advancements and scientific progress, AI is proving to be a fascinating field. As a result, ML approaches are receiving more attention. Machine learning (ML) is a powerful data analysis technique that uses learning algorithms to iteratively learn from existing data. For example, in primary care, model and evaluate electronic visits, and research They-based appointment systems. They-based or mobile-based healthcare applications like as ZocDoc, Quest Diagnostics, and WeDoctor and HaoDF in China are well-known, and these systems are assemblages of a big number of resources, especially doctors, from many hospitals in various places.

According to several industry findings, patients are unable to discover the most suited physicians for their illness condition due to a lack of medical understanding. To that end, physician advice, which is the basis for this research, becomes an effective tool for web- or mobile-based applications for allocating suitable resources to patients.In general, these apps offer patients appointment services through physician selection recommendations, from which they can choose one for medical services. Patients must first choose their preferred hospital location and appointment time before beginning the service.

II. RELATED WORK

In hospital system doctor predict the diseases and charge huge amount of money for checkup and test.And they take long period of time for that but some diseases can increase their effect with time.Instead of doctor we can predict diseases at home using online portal and can find specialist for the same. This will also eliminate consultation charges.Some patient do not have information about specialist doctor and their experience so they are not able to choose the best doctor and hence they waste money on general surgeon. This system will dynamically recommend physician according to patient preference. It will Predict the diseases from the given symptoms, create and monitors a

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A Review on Disease Prediction and Consultation Using Machine Learning

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II. LITERATURE SURVEY

1) Paper Name- Combining Traditional Learning and the E-Learning Methods in Higher Distance Education: Assessing Learners' Preference

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Description:
Distance Education is a system where learners are separated from the teachers or educational institution both in time and space for a reasonable period of their learning. It may include contact, no contact and part-time education (Federal

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Heart Disease Prediction Using Machine Learning

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ABSTRACT: In today's modern world cardiovascular disease is the most lethal one. This disease attacks a person so instantly that it hardly gets any time to get treated with. So diagnosing patients correctly on timely basis is the most challenging task for the medical fraternity. A wrong diagnosis by the hospital leads to earn a bad name and loosing reputation. At the same time treatment of the said disease is quite high and not affordable by most of the patients particularly in India. The purpose of this paper is to develop a cost effective treatment using data mining technologies for facilitating data base decision support system. Almost all the hospitals use some hospital management system to manage healthcare in patients. Unfortunately most of the systems rarely use the huge clinical data where vital information is hidden. As these systems create huge amount of data in varied forms but this data is seldom visited and remain untapped. So, in this direction lots of efforts are required to make intelligent decisions. The diagnosis of this disease using different features or symptoms is a complex activity. In this paper using varied data mining technologies an attempt is made to assist in the diagnosis of the disease in question.

KEYWORDS: cardiovascular disease, data mining, intelligent decisions, symptoms

I. INTRODUCTION

Today, many hospitals manage healthcare data using healthcare information system; as the system contains huge amount of data, used to extract hidden information for making intelligent medical diagnosis. The value of machine learning in healthcare is its ability to process huge datasets beyond the scope of human capability, and then reliably convert analysis of that data into clinical insights that aid physicians in planning and providing care, ultimately leading to better outcomes, lower costs of care, The main objective of this research is to build Intelligent Heart Disease Prediction System that gives diagnosis of heart disease using historical heart database. To develop this system, medical terms such as sex, blood pressure, and cholesterol like 13 input attributes are used. To get more appropriate results, two more attributes i.e. obesity and smoking are used, as these attributes are considered as important attributes for heart disease. The data mining classification techniques viz. Neural Networks, Decision Trees', and Naive Bayes are used.

The healthcare industry collects huge amounts of healthcare data which, unfortunately, are not "mined" to discover hidden information for effective decision making. Discovery of hidden patterns and relationships often goes unexploited. Advanced data mining techniques can help remedy this situation. This research has developed a prototype Intelligent Heart Disease Prediction System (IHDPS) using data mining techniques, namely, Decision Trees, Naïve Bayes and Neural Network. Results show that each technique has its unique strength in realizing the objectives of the defined mining goals. IHDPS can answer complex "what if" queries which traditional decision support systems cannot. Using medical profiles such as age, sex, blood pressure and blood sugar it can predict the likelihood of patients getting a heart disease. It enables significant knowledge, e.g. patterns, relationships between medical factors related to heart disease, to be established. IHDPS is -based, user-friendly, scalable, reliable and expandable. It is implemented on the Java-Python platform by using MLP Algo.

II. LITERATURE SURVEY

Very few systems use the available clinical data for prediction purposes and even if they do, they are restricted by the large number of association rules that apply. Diagnosis of the condition solely depends upon the Doctors' intuition and patient's records. Detection is not possible at an earlier stage.

In the existing system, practical use of various collected data is time consuming. There are only few decision support systems available in medical industry whose functionalities are very limited. As mentioned earlier, medical decisions are made with doctor's intuition and not from the rich data from the medical database. Wrong treatment due to misdiagnosis causes serious threat in medical field. In order to solve these issues data mining solution was with help of medical databases was introduced.

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Smart Mirror

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Abstract- **The paper describes the design, construction and working of the smart mirror. Every morning our day begins by watching ourselves at least once in mirror before leaving our homes. We interact with it psychologically to find out how we look and how our attire is. Smart Mirror or Magic Mirror is one of the applications of Raspberry Pie. A computer screen embedded in mirror looks very futuristic. The Raspberry Pie stays at back scenes and controls the data displayed on mirror. While looking at mirror you can look at various notifications from social sites as well news, weather forecast and more things. Such mirrors can be programmed to work as AI and control home appliances by voice input or touch screen. The Raspberry Pie is connected to monitor via HDMI as well as it also has inbuilt Wi-Fi and Bluetooth interfaces so we can just swipe music and videos to mirror.**

Keywords- **Smart Mirror, Magic Mirror, Home Automation, Artificial Intelligence, Virtual Dressing, Raspberry Pi.**

I. INTRODUCTION

Smart mirrors are straight from science fiction. They are part of an optimistic vision of the future that imagines a world where screens and data are everywhere, ready to feed you whatever information you need at a moment's notice.

Basically, the mirror is looks like normal mirror but when someone stands in front of it the scene changes. The mirror provides a functional, user friendly and interactive UI to its user for accessing their social sites, messengers, etc. It has widgets for displaying the current weather conditions, Time, Events, Latest news headlines.

The Smart Mirror would help in developing smart houses with embedded artificial intelligence, as well as finding its applications in industries. Switching home appliances becomes easy with mirror. Virtual dressing, a smart way of having trials with your fashion sense makes things quite easy in malls.

Having such intellectual mirror will only surge the beauty of home. The raspberry pi is programmed using python and connects to a monitor with inbuilt speaker so as to provide an onscreen interface and

Section 2 focuses on Design of mirror. The working while making Smart Mirror is covered under Section 3. Section 4 comments on the Functional Overview of mirror. Section 5 covers problems and issues that may occur while development

II. ALGORITHM AND DESIGN

Step 1: Switch on the power supply.
Step 2: Get the date, time, and weather details from predefined from URL.
Step 3: Get the news from.
Step 4: In code section write down all the compliments to be displayed on mirror.
Step 5: Display it on mirror via LCD monitor.
Step 6: Check for user in front of mirror, If Yes, display user profile, if No, GOTO step 5.
Step 7: Switch off the power supply when it is of no use.

Table shows basic required objects for building mirror and their functionality. Power connection, microphone for voice input, camera for image processing forms the basic input devices for the mirror. The monitor and speakers form the output devices of the mirror.

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Rover Sieth

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Abstract- The main objective behind this paper is to develop a robot to perform the act of surveillance in domestic areas. Nowadays robot plays a vital role in our day to day life activities thus reducing human labor and human error. Robots can be manually controlled or can be automatic based on the requirement. The purpose of this robot is to roam around and provide audio and video information from the given environment and to send that obtained information to the user. In this project, one can control the robot with the help of mobile or laptop through Internet of Things and also can get the live streaming of video both in daytime as well as at night with the help of wireless camera from the robot. The robot can be controlled both in manual as well as in automated mode with the help of Arduino microcontroller. This robot also uses various sensors that collects data and sends it to the Arduino microcontroller which controls the robot .Thus the action of surveillance can be performed. Further advancement in our project can provide surveillance even in defense areas.

Keywords- Arduino, Surveillance, ESP8266 12e, CAYENNE Software.

I. INTRODUCTION

Technology has brought a dynamic and tremendous change in robotics and automation field which ranges in all kinds of areas. Surveillance is the process of close systematic observation or supervision maintained over a person, group, etc. especially one in custody or under suspicion. Thus surveillance is mainly required in the areas such as border areas, public places, offices and in industries. It is mainly used for monitoring activities.

The act of surveillance can be performed both indoor as well as in outdoor areas by humans or with the help of embedded systems such as robots and other automation devices. A robot is nothing but an automatic electronic machine that is capable of performing programmed activities thus replacing human work, providing highly accurate results and easily overcoming the limitations of human beings. Thus replacing humans in the surveillance fields is one of the great advancement in robotics.

The robot consists of Arduino Uno microcontroller which acts as the heart piece of the robot. This robot also consists of DC motors, wheel chassis, battery, Wi-Fi module (ESP8266 12e) and camera.

The robot can be either operated manually. User end communicates with the robot by implementing the concept of Internet Of Things. This can be achieved through software, which is used for IOT developing projects. The commands are sent to the robot by means of software and they are received by Arduino microcontroller via Wi-Fi module since both are interfaced with each other.

Thus the robot can be controlled in a wireless manner. In this project, we use wireless transmitting camera that provides audio and video information that can be received at the user end.

II. LITERATURE SURVEY

The main objective of [1] behind this paper is to develop a robot to perform the act of surveillance in domestic areas. Nowadays robot plays a vital role in our day to day life activities thus reducing human labor and human error. Robots can be manually controlled or can be automatic based on the requirement. The purpose of this robot is to roam around and provide audio and video information from the given environment and to send that obtained information to the user. In this project, one can control the robot with the help of mobile or laptop through Internet of Things (IoT) and also can get the live streaming of video both in daytime as well as at night with the help of wireless camera from the robot

The project [2] is designed to develop a robotic vehicle using Arduino for remote operation for monitoring purpose. The robot can transmit real time information with the help of Arduino board connected to computer or any smart device.

In this project [3] a cost-effective four-wheeled surveillance robot is proposed using an Arduino UNO microcontroller and a smartphone running the Android Operating System. Surveillance robots typically consist of a video camera, a GPS module, and GSM radios. The robot can be controlled remotely from a PC using the internet and a microcontroller-smart phone interface residing on the robot. To capture and archive the real time

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Automatic Medicine Pill Dispenser for Covid-19 Patients Using IOT

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Abstract-The Medicine Dispenser is a machine which dispenses the medicine based on the authentication of the user by using the user name and the password given to the user by the administrator of the machine. This machine will dispense medicine according to the user prescription provided by the user's doctor and also the number of medicine is also determined by the user's choice. In this medicine dispenser the money is handled through the digital points stored in the user's card which is given by the administrator and also user can restore the points by taking to the administrator of the card and use his identification to add the digital points to the card. The main goal of the dispensing machine is to provide the medicine to the users 27/7 so it can help the village people Who are for away from the hospital or the clinic to buy the medicine and also it can be installed like a ATM machine so it is easy to use by the people even though if they cannot read and write. The medicine can be replaced by the admistrater of the machine by time to time based on the expiration date or is it is empty the machine will alarm the administrator to refill the machine through SMS or telecom messenger.

Keywords: Internet of Things (IoT), RFID (Radio frequency identification), Arduino Mega, Nodemcu.

I. INTRODUCTION

The medicine dispensing machine is using the care card which is used to store the data of the users like there user name, password, prescription of the user etc. So here we are using RFID tag which is used for the identification of the user and this RFID tag uses radio frequency identification devices for identification and tracking of the user records like login and the amount and the medicine taken by the user to store it as a reference in the future. The RFID tag system includes the tag itself, a read/write device, and a host system application for data collection, processing, and transmission.

The medicine dispenses uses Arduino mega as a main system controller to attach all the module to perform their respective function and also for the machine we require more pins so the controller we selected is Arduino mega. To this controller mainly there are 4 module connected to it there are keypad, nodemcu, LCD display, repeaters.

The medicine plays an important role in everyday life so the Medicine dispenser also help in the rural village where there is no hospital or clinic there we can install these medicine dispenser so it can help the people and since it is simple to use there will be no problem in teaching to the people who are illiterate and also there are security measure so that the user cannot obtain more than the medicine needed to then that of prescribed by the doctor so there will be no harm to the user the LCD module will let the user to see all the prescription that has given to the user these numbers can be entered with the keypad located in the system .

II. LITERATURE SURVEY

Authors have proposed advanced pill dispenser, in which only authenticated person alone is allowed to get access to it. It is done by using RFID module. Also proposed the dispenser unit which has database information about the medicine and provides human interface.

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Android Based C19 Warrior Robot

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Abstract—**Nowadays smartphone has become the most essential thing in our daily life. And most of the things are based on android application only. Our project describe that without coming in contact with human how to provide service to them. This project is based on android application . The user can install application in their phone and can operate by turning on Bluetooth. Various command can be sent like forward ,backward, left ,right using android phone. Robot has a receiver which can accept those command and move accordingly**

Keywords—Bluetooth, Motor, Motor Driver, Arduino, Android, Wireless

I. INTRODUCTION

After developing few popular robotics project like line follower robot, edge avoiding robot, DTMF robot, gesture controlled robot, etc. in this project we are doing to develop a Bluetooth control robot. Here we used a Bluetooth module to control the robot , and it is also an android based application.

The project aim is designing a Robot that can be operated using Android mobile phone. The controlling of robot is done wirelessly through android smart phone using Bluetooth feature present in it. Here in the project the android smart phone is used as a remote control for operating the robot. Android is software stack for mobile device that include an operating system . Android boasts a healthy array of connectivity option, including Wi-Fi, Bluetooth, and wireless data over a cellular connection. Android provide access to a wide range of useful libraries and tools that have been built from the ground up alongside the platform providing developer with high productivity and deep insight into their application. Bluetooth is a open standard specification for radio frequency based short face of computing and wireless connectivity technology that promise to change the face of computing and wireless communication. It is design to be inexpensive , wireless networking system for all classes of portable such as laptop, PDA , mobile phone. It also enable wireless connection for desktop computer, making connection between monitor printer, keyboard and CPU cable free. The controlling device of whole system is a microcontroller , Bluetooth module DC motor are interfaced to the controller . The controller acts accordingly on DC motor of the robot.

II. LITERATURE REVIEW

The main aim is to design the cost -efficient Bluetc controlled robot car for material handling which is friendly. Many researchers had developed robotics syst so reduce human efforts and described their technologi These robotics design were controlled by softw programs. This system was used for transferring information wirelessly.

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SMART SAFETY & SECURITY SYSTEM AGAINST COVID – 19

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ABSTRACT:

In this project we a laser diode and receiver are used here to detect the entrance of a person. When the system or project detect any entry at the entrance it will check firstly the temperature of that respective person and if the temperature is less than the set temperature then that person is allowed to enter otherwise his/her entry will be denied. The first process is scanning for fever. Also For a mask we need to monitor every person. We have temperature checking systems for every entrance for scanning but manual temperature scanning has a lot of disadvantages. The persons are not well trained on using Temperature scanner devices. There is human error in reading values. Many a time's people are not barred from entry even after higher temperature readings or no masks.

Keyword: Arduino, Temperature sensor, Buzzer, LCD, Motor driver, DC gear motor, Water motor, Relay, Ultrasonic sensor, LED

I.INTRODUCTION

There was a huge impact of COVID 19 on the society; lots of restriction has been imposed like number of users allowed in a particular room in offices, shops, etc. to maintain social distancing, Also regular temperature check at the entry of malls, the office becomes mandatory. So In this project we stimulate a room where all necessary precautions are taken, we use a laser diode and receiver to detect the entry of a person, when any entry is detected at the entrance it will check the temperature of the person and if the temperature is below the set temperature then that person is allowed for entry otherwise the entry is denied. Only specific number of people are allowed in the room. A Bluetooth App is used to set temperature, the number of peoples actively present in the room, also to monitored them. In automatic sanitization system is very useful resource in the fight against corona virous. This contactless dispensing system helps to sanitize hand without getting in contact with the sanitizing surfaces and will help to reduce spread through cross contamination.

II.RELATED WORK

B.Vijayalakshmi in [1] proposed a scheme to improve the women safety by using GPS and Gsm model. A small device with a buzzer and microcontroller is designed, and it can be placed on band or watch. When any insecure situation, the woman can make use of this device to send alert SMS by pressing this buzzer to predefined numbers (5 members). But this scheme cannot generate automatic alert SMS. Instead, it requires the human interaction during a panic situation.

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Multi Sensor Obstacle Detection on Railway Tracks

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ABSTRACT - Nowadays in railway systems, it is more necessary to have safety in order to avoid accidents. One of the causes that can provoke serious accidents is the existence of obstacles on the tracks. To avoid accidents, a multi-sensory barrier consisting of infrared (IR) and ultrasonic (US) sensors- and a vision system, is proposed in order to inform the monitoring system of the existence of obstacles. The multi-sensory system is used where the safety and reliable environments is needed. Principal Components Analysis is applied to the data obtain from the barrier and from the vision system. If there are obstacles on the tracks; and with the vision system information about moving objects is obtained from this technique

Key Words: Node MCU, Ultrasonic sensor, LCD, power supply, Buzzer

I. INTRODUCTION

In order to achieve increased flexibility automated trains would be a promising step ahead. Automated train control is not a technical challenge any more. The only task .which have not been automated yet is surveying the railway track with respect to obstacles and crack. Today a human train driver reduces the risk of an accident by visual perception, triggering appropriate system reactions like whistling and/or braking. Asking for fully automated train operation thus means requiring a technical system, capable of surveying the track in the same way as the human driver does and guaranteeing at least the same integral reduction of risk. In fact, this requires a very high performance in detection and a wide detection range. At the same time an extremely low false alarm rate is required.

To get maximum information about a fact object we exploit the concept of complementary physical principles and strategies. To get maximum confidence in interpretation the concept of redundancy is used. Another concept is modularity: one can add new modules to the system till the claim is reached or replace modules if new ones do the job more efficiently. The entire concept is applied in measurement principles, hardware, software architecture and algorithms. In our project we use ultrasonic sensor to detect the obstacle and cracks onthe railway track. All the collected information transfer to the station master using thinks speak.

OBJECTIVE

1. To detect obstacle for railway
2. Generate alert if obstacle detect
3. Send data to server

II. LITERATURE SURVEY

A multi-sensor obstacle detection system for the use on railway track was specified, implemented and tested. The applied look-ahead sensors are: Video cameras (optical passive) and LIDAR (optical active). The objects delivered by the sensors were fused, classified and their description is sent to the central vehicle unit. [1].

It has been shown that the fusion of active and passive optical sensors and a railway track data base lead to very robust performance. The overall detection performance has shown to be comparable to thatof a human driver. They successfully demonstrated a multi sensor obstacle detection system prototype having an up to reactions like whistling and/or braking.

Locomotives are at risk to collisions and derailment due to obstacles on the track. Trains do not have the ability to steer around obstacles, they are confined to the track and depend on stopping to avoid hazards. These accidents often result in loss of life and revenue. Due to the great momentum of the locomotives stopping distance required exceeds the operator's sight distance [2]

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Reduce Intervention in Cognitive Cellular Network By Applying Cuckoo Search Algorithm

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Abstract:- Now a day's mobile customers are will increase tremendously, to finish their necessities with growing channel allocation the Cognitive Cellular Network is crucial to do not forget. CCN be made up a subscribe as mobile and cognitive as unsubscribe person which can be makes use of the mobile band through stopping intervention. The Cuckoo Search Algorithm is taken into consideration to lessen intervention among spectrum allocation for subscriber and unsubscribe customers. CS is cutting-edge nature-stimulated algorithms, that is invited through Yang and Deb [10]. CS do not forget the brood parasitism hobby of a few cuckoo species .Proposed CS is determined greater higher than BCO PSO and ABC , SINR acquired with proposed CS is determined to be higher in comparison to pronounced paintings with Particle Swarm Optimization (PSO), Artificial Bee Colony (ABC) .

Keywords:- *Cuckoo Search Algorithm(CS) ,Cognitive Cellular Network (CCN), Subscribe User(SU), Unsubscribe User (UU), SINR.*

I. INTRODUCTION

The cellular user population is increases tremendously due to that the restriction in spectral space becomes an essential subject now a day's .The operators are assign with less number of spectrum and users are more today which are increases the data cost . Hence we need to optimize the use of limited spectrum efficiently [1]. In real time each operator has to provide spectra to the unsubscribe user dynamically to each cell .The unsubscribe user can use the spectrum without disturbing the subscribe user this is the concept of cognitive radio. 'Spectrum mobility' state that when the spectrum is hold by the subscribe user then unsubscribe user switches to the other spectrum [2]. The spectrum can be used optimally by properly co-ordination between subscribe and unsubscribe user. The numbers of users are present within the spectrum in real time because of that this process is computationally complex.

The AI (Artificial intelligence) provides an excellent solution for the complex computation problem like spectrum allocation. Particle Swarm optimization, Genetic algorithm and Artificial Bee Colony Optimization Algorithm are the different AI techniques.[6][7]

To get optimal spectrum allocation the cuckoo search algorithm is used in this proposed system.

We will see the following section in this paper
Section II Cuckoo search algorithm ,Section III employing CS to CCN section IV parameters ,section V Results and Conclusion is describe in section IV.

II. CUCKOO SEARCH ALGORITHM

CS is present day nature-stimulated algorithms, that is invited with the aid of using Yang and Deb [10]. CS considers the brood parasitism pastime of a few cuckoo species. Proposed paintings nation that CS offers the higher outcomes than BCO, PSO and ABC. To growth the hatching opportunity in their personal eggs, Cuckoo birds use the nest of different host birds to put their eggs with extraordinary competencies along with deciding on nests containing lately laid eggs and doing away with present eggs. Some of the host birds are capable of combat this parasitic conduct of cuckoos and throw out the located alien eggs or construct a brand new nest in a awesome location. This assessment manner of cuckoo birds is used to increase the CS algorithm. Three idealized regulations proposed with the aid of using Yang and Deb to simplify the cuckoo replica manner:

1. An egg represents an answer and is saved in a nest.
2. An synthetic cuckoo can placed handiest one egg at a time.
3. The maximum appropriate nest searched with the aid of using cuckoo birds to lay the eggs (solution) to maximize its eggs'
4. Survival rate. An elitist choice approach is applied, So that handiest awesome eggs (fine answers near the most fulfilling value) which can be greater much like the Host chook's eggs have the possibility to develop (next generation) and come to be mature cuckoos.
5. The wide variety of host nests (population) is fixed. The worse eggs are located with the aid of using the host chook with a possibility of $pa \in [0, 1]$, and those eggs are vanishes or nest is immoderate, and a totally new nest is constructed in a brand new location. Otherwise, the egg matures and lives to the subsequent generation. New eggs (answers) lay with the aid of using a cuckoo pick the nest with the aid of using Levy flights across the Current fine answers.

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Smart Trolley using RFID

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Abstract—**shopping is easy but waiting on a bill counter after shopping is too boring and tedious task. Huge amount of rush plus cashier preparing the bill with barcode scanner is too time consuming and results in long ques. So here we have made an innovative project which will be placed in the shopping trolley itself. The system consists of a RFID reader which is controlled by Arduino Uno microcontroller. So whenever the shopper puts any product in trolley it is been detected by the RFID module and it is displayed on LCD along with the price of the product. As the shopper adds more things it is detected by the module and the price according to that increases. In case if customer changes his/her mind and doesn't want any product added in the trolley he can remove it and the price added will be deducted automatically. At the end of shopping the shopper will press the button which when pressed adsthe entire product along with their price and gives the total bill to be paid. At exit for verification the shopkeeper can verify the shopping with the help of master card. Hence this system is suitable for use in places such as supermarkets, where it can help in reducing man power and in creating a better shopping experience for its customers.**

Keywords—**RFID, billing trolley, Arduino, LCD**

I. INTRODUCTION

Today every supermarket and shopping mall makes use of the shopping baskets and shopping trolleys to collect the items from the racks. The customers have to put every product which they want to purchase into the trolley and they have to wait in the long queue for the billing system. It is a complex process. To overcome this problem several technological solutions have been developed. But the effectiveness of the developed system should be improvised.

Throughout the 20th centuries our views, expectations and methods of doing work have changed drastically. Many of the Innovations and information Technologies have caused a revolution in values, knowledge and perceptions in practically all areas of human understanding. One regular task that human beings spend a considerable amount of time is in Shopping. The customers face the problems regarding the wastage of unnecessary time at the counters for bill. An improvement is required in the billing system to update the quality of shopping & experience to the customers. To overcome these problems stated above and to improve the existing system, we have designed an AUTOMATIC BILLING TROLLEY. This upgraded system will intend to assist shopping to the individual that will minimize their time spent in shopping.

The electronic shopping system intends to assist shopping in person that will minimize the time spent in shopping as well as intended to aid the store management with real-time updates on the inventory. The emergence of new technologies, such as barcode scanner and wireless networks, makes the shopping processes faster, transparent and efficient. Our aim is to develop the shopping system which can be used in shopping malls to solve the problem mentioned above. The Shopping system is equipped with barcode scanner for product identification and a consistent Wi-Fi connection with the shop's server. As soon as the object is purchased, the barcode reader identifies the product and updates the bill. When the customer is done with shopping, he can just press the 'End shopping' button and the details are sent to the shop's server and the customer has to pay just the amount and leave. The shopping system will change the way people shop as radically as ATM's changed banking. The proposed system is easy to use and does not need any special training. In this system there is inbuilt automatic billing system makes shopping a breeze and has other positive spin-offs such as freeing staff from repetitive checkout scanning, reducing total number of staffs required and increasing operational efficiency of the system.

Now days purchasing and shopping at big malls is becoming daily activity in metro cities. We can see huge rush at malls on holidays and weekends. The rush is even more when there is special offer and discount. People purchase different items and put them in trolley. After total purchase one needs to go to the billing counter for payments. Customer feels annoyed by waiting too long because not all cashiers are open for payment. Most of the time customer find it difficult to know the total cost of items they have bought and worry about the amount of money they brought is enough or not. Many of the customers find it difficult to search a particular product in the shopping mall. Also some of them face the problem of different sections of items located in the mall. It is becomes difficult for shopkeeper to scan all product and do the billing process of

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E-cycle Using BLDC Motor and Android Application For Battery Indication

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Abstract—**The paper presents a way to reduce pollution of cities by motivating the use of bicycle and converting a conventional bicycle into a plug-in electric bicycle for A replacement of motorized two-wheelers by converted plug-in hybrid electric bicycle is proposed. and some update in it we are using android application with the benefit of indication battery how much charge available in it. This is also help to improvement in health and fitness.**

Keywords—,pollution , motorized two-wheeler, electric bicycle.

I. INTRODUCTION

Every Metro city in india like pune,mumbai,dehli are polluted due to large amount of motorbikes and transport use. According to cbn news surve India has now become the largest motorcycle maker in the world. India sold 17.5 million motorcycles during the last fiscal, 2016-2017 making it the largest motorcycle manufacturer in the world overtaking China. Hence the paper contributes towards a reduction of pollution caused by motorized two-wheelers by motivating the use of bicycle converted to plug-in electric bicycle[1].

2. internal Design

Electric vehicles make use of BLDC motors as the propulsion method. Due to the fact that BLDC motors do not have brushes, they present some advantages over the DC brushed motors, from which we remember: (I) longer life span, (II) lower EMI (Electromagnetic interference) radiation, (III) noiseless operation[2].

Due to the geometry of the windings in the motor, the BEMF (back electro-motive force) generated by the motor when in generator mode can be BLDC motor is presented in Fig. (I). BLDC motors are 3-phase motor[2].

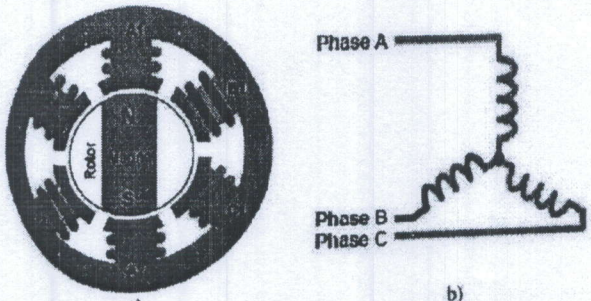

Fig. 1. BLDC motor: a) simplified internal structure; b) motor phase

then we are using lithum ion battery 48v and 9amp and use BMS(Battery mangment system) here is some information about batterys Lithium batteries are most modern type of battery used in present day power system and electric vehicles. Lithium batteries are batteries that have lithium as anode. Among that Lithium –ion and Lithium-polymer batteries are widely used in portable power systems and electric vehicles. Lithium batteries have several features such as high energy density, high power density and more cycle life than other types of secondary batteries[6].

The advantages of Lithium batteries are namely i) Sealed cells: no maintenance required ii)Long cycle life iii) Broad temperature range operation iv) Long shelf life v) Low

Self discharge rate vi)Rapid charge capability vii) High rate and high power discharge capability viii) High columbic and energy efficiency ix) High specific energy and energy density x)No memory effect.

The disadvantages are its inability to withstand larger currents i.e. many times higher than its maximum current capacity. It cannot withstand high temperatures and mistreatment causes it to explode. The need of temperature control technology and current and voltage control circuit is the main challenge in the case of Lithium batteries.

3 .BATTERY MANAGEMENT SYSTEM

To ensure smooth operation of lithium batteries battery management systems must be introduced in order to control over charging, undercharging, over current, over voltage and temperature control and protection. Lithium based batteries are intolerant of over-voltage and multi-cell systems require each cell to have an over-voltage detection device[7] .The battery management system includes current monitoring, voltage monitoring, cell balancing and thermal management. Multi-cell lithium-ion battery systems require tightly controlled voltage and current operating conditions BMS shown in fig(II)

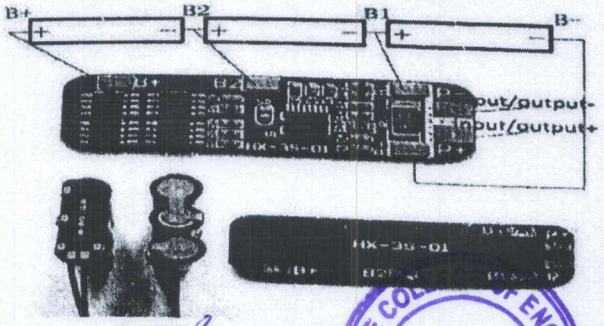

Fig. 2 :Battery Management system

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Price Comparison System Based on Web Scrapping and Spark

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ABSTRACT: E-Commerce nowadays plays a vital role in our daily lives. It is redefining commercial activities around the world .Over the years, E-Commerce has evolved in profound ways.So, Online Shopping with price comparison offers with best deals and trends in different shopping sites is in business competition and is beneficial for consumers.This paper presents a price comparison system for comparing prices, offers, deals and shows trends in products of different shopping sites. In this proposed system scrapper, crawler with bot is implemented for data indexing and retrieval with spark for efficient dynamic data processing and fast recommendation.

KEYWORDS : System scrapper; crawler with bot; efficient dynamic data processing; data indexing and retrieval. Price Comparison System(PCS).

I. INTRODUCTION

With changing communication technologies the manner in which individuals access and acquire information from various information sources has also changed. Due to information convergence, Web users enjoy a wide access to abundant information from various sources through Web sites and services. It's very difficult to gather low price and good quality products by an individual by searching on different shopping sites. So, many of the sites remain unsearched and very low users get to know them, users also have to compromise with limited shopping sites deals and offers.Itallowsconsumerstoseedifferentlistsofpricesfortheproductchosenbyuserandithelpsconsumerstomake an informed decision about which to choose in order to save money. It also act as a tool to help consumers increase their price consciousness so that they will not feel cheated by the advertisement from the retailers that claimed they are offering the cheapest price but the reality happened to be otherwise.

The price comparison system (PCS) provides online shoppers a wide range of information on various products. It reduces the amount of time or effort required for buying a product online. Conventional PCSs are generally suitable for direct searches, which focus on the required information on specific product searches.
For this study, an optimal PCS is devised to support accommodating and recommending user-defined price ranges. Price ratings and product clusters are devised that employ Business logic and data mining, which have emerged as useful tools for processing information collected from Web sites and providing personalized Web services.

II. COMPUTATIONALTECHNOLOGY

The whole system is divided into three main modules:

2.1 DataExtraction

In this module about the products will be extracted from the sites that we are going to use in our further operations. Data extraction happens continuously for the duration of the event in order to periodically capture the live data of the event. There are many different ways of gathering the required information in web scraping but to parse HTML pages and to retrieve and transform page content HTML parsing is used. scrapping of the data is done for storage and computation. Many Languages used for web scraping and crawling with mining but the best for use is Python in project as it has many libraries which provide many functions to perform. Different libraries to be used is: Request - For processing request for Data
BeautifulSoup - Getting the required information in tidy way
Scrapy - For indexing many pages and scrape data without more human intervention [5][9].

2.2 DataProcessing

Processing may include aggregation, prediction, clustering, classification, etc. Computational algorithms will be used to

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Survey on Safety Detector System at Public Places

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ABSTRACT: In today's time the safety of persons is a major concern in India and other countries. To raise the awareness isn't seems to be sufficient enough as it doesn't give justification to increasing number of crimes in the country and creating a challenge in front of the society. Since many decades Individuals are facing physical, verbal, sexual and mental harassment which even leads to casualty. In the minds of every individual they don't feel safe when they move freely on the streets or at the public places in the odd hours. More accidents occur for women, children and elderly people who always feel that they need the support to move around. With the help of advanced technology individuals can make use of a simple gadget which can be used whenever they are in unpredictable circumstances to establish a sense of awareness and alert to other women who are travelling to the same route especially during the night time.The device acts as a safety alert and helps women to analyse how safe a particular public place is.

I. INTRODUCTION

In our day to day life we see lot of examples of people getting harassed, stalked, voyeur. Everyday we see news flashing up on the TV where women are getting raped, beaten & abused. And at the most what we could do is feel sad for 2 minutes and gets back to our regular routine as if we are helpless & can't contribute in stopping this cycle of abuse/harassment.

Many people are aware of reporting mechanisms but how many of the victims actually go and report when they face any kind of harassment/when their rights gets violated..? Hardly few!
According to, NFHS (National Family Health Survey) less than 10% is the reporting rate in our country. There are various reasons why women can't report, for eg: Social stigma, Fear of reputation, Unaware of legal process, Threat from the victim etc. This is the culture that gets followed in our country and deep down we all know this picture will never change easily. Which is why, What if we take action before such incidences takes place.? What if we give importance to PREVENTION more than the CURE .?

We believe that to women and everyone should feel safe & they should stay informed about their rights to ensure a secure mobility. As our country is moving towards the digitalization, this application is a baby step towards making women empowered & informed which will automatically leads public places to become safer for them. This app is a tool that works to enable public places to become safer through collection of data through crowdsourcing.
This app will indulge women with the power to express themselves to digital medium and help them contribute in eradicating this chain of abuse. With this app women will be notified about safety of a particular route they are travelling/ roaming. And they can take necessary measures or plan their route accordingly.

II. SYSTEM USED

Recommender System:
During the last few decades, with the rise of Youtube, Amazon, Netflix and many other such web services, recommender systems have taken more and more place in our lives. From e-commerce (suggest to buyers articles that could interest them) to online advertisement (suggest to users the right contents, matching their preferences), recommender systems are today unavoidable in our daily online journeys.
In a very general way, recommender systems are algorithms aimed at suggesting relevant items to users (items being movies to watch, text to read, products to buy or anything else depending on industries).

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Implementation of News Classification System Based on Area

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ABSTRACT: In 21st century the internet is filled with loads of news articles, there is a pressing need to classify news according to the requirements of an individual. People are generally more interested what is going on, in their immediate surroundings. News has a vital role in the society. Most people read news every day to keep up with the latest information and trends. The information could be anything, from technology, disaster, politics, even the affair of the celebrities. After they absorb the information and understand it, it will be used by the people as a reference to their ideology and decision making. With the help of technology advancements, news disseminates relatively quick across the globe. Using the internet, people can send information from another side of the world in under a second. Because of this, almost any kind of information such as knowledge, idea, entertainment, and news from the people can easily spread to the community. With the development of the web, and ton of internet sites that provide similar information and data.

So,users find it hard to decide that of those websites will offer the specified information inside the foremost valuable and effective way.

In the previous few years, the globe had unimaginable and huge growth within the rate of reports that's published. Individuals sleep in a time jam-packed with info, data, and news. So, today news has a vital part and position inside the community. As people read the news daily to stay up with the foremost recent data and inputs. The information is also regarding technology, sports, weather, food, and celebrities or many different fields simply think about all the various websites that are out there and also the info they provide. Visiting each single one that you're interested in will be boring and longtask. Most of the people don't have enough time to try and do it, but there are solutions to it. That's where news aggregators comes in.

I. INTRODUCTION

News aggregator isjust an online software which collects new stories and events round the world from numerous sources tied one place. News aggregator plays a really necessary role in reducing time consumption, as all of the news that might be explored through quite one web site are placed solely in a single location. Also, summarizing this aggregate content

fully can save reader's time. In this paper, we tried to solve this issue by classifying the news articles on basis of cities and providing the entity with the gathering of town specific news. We've developed our own net crawler for content extraction from the hypertext mark-up language pages of reports articles. Random Forests, Naive Thomas Bayes and SVM classifiers are used for classification of reports articles. Results exhibit that machine learning techniques will be controlled to realize our goal and thus demand more

analysis to enhance the efficiency of resolution this issue. News aggregator websites enable users to look at news and updates from various sources at one convenient location. They fetch the info, organize them in tags / classes, and show it within the right order for easier consumptions. Some well famous news aggregation websites are FEEDLY, Google news, ALLTOP, News360, Panda, TECHMEME, Flipboard, Pocket, etc.

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IOT based Safety Detection System at Public Place

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ABSTRACT: Fundamental to IoT is the instant collaboration that happens between these smart devices. The beauty behind having a network of interconnected devices is that they can all work together to provide real solutions that are much greater than the sum of their parts. IOT based produscts are always connected and constantly communicating with each other. They regularly exchange information using wired and wireless networks, which helps make our lives easier and safer. When IoT based smart home security systems are used to safeguard our home or possessions, it's akin to having our favourite reliable friend dutifully watching over our home or pets in our absence. Except it's actually way better than that, because unlike our well-meaning friend or neighbour, smart home security systems are always present and are ready to instantly alert us of any signs of danger. Smart products, like Nest Lab's smoke and carbon monoxide alarm, sounds an alert when it detects high levels of CO, and then warns us of the location of the danger. It's no wonder that Google acquired Nest Labs for a whooping $3.2 billion! Other companies like Canary offer connected smart home security systems that are now a part of a growing trend: using IoT technology to create safety solutions to protect what's most valuable to us.

I. INTRODUCTION

Existing handheld devices that are available for women safety require women intervention to activate them such as pressing the button or shake the device etc after sensing the danger. However, for some reason if a woman has no time to activate it when she is danger, then the purpose of the safety device is not solved. In a country like India where the growth rate of crime is considered to be more than the growth rate of population, which includes burglary, murders, rapes, and many more women's safety is believed to be one of the most important issues. According to a report by Thomson Reuters Foundation, India is ranked as a highly dangerous place for women world wide, India has the greatest number of child brides as well. In 2016, the number of reported rapes is almost 39,000. Experts that were interviewed for the reason why India is presumed to be dangerous for women said India is on top of the list because its government has done almost nothing to provide safety to women since the rape and murder of a student in early 20's in 2012 which prompted changes in the rape laws of the country. Most of the attacks on women happen when they are traveling alone or are in a remote area where they are not able to find any help or proper assistance. This paper proposes aIoT based solution to address the problem of women safety and that overcome the shortcomings of existing devices. The proposed design comprises of features to notify family members and nearby police station for immediate assistance when women are not safe. Moreover, a shock wave generator is a part of the proposed design which women can use to attack the perpetrator.

Women are not safe anywhere and are most vulnerable when traveling alone into lonely roads and deserted places. Existing hand held safety devices for women require human intervention for activating the device such as pressing the button or shake the device etc after sensing the danger. We propose a solution which will try to overcome the disadvantages of the existing systems and also aim at providing false proof safety to women. The proposed work aims at designing an IoT based safety device that relies on providing security to women by fingerprint-based method of connectivity to the device and alerting nearby people and police when a women is not safe. An unsafe situation is sensedby fingerprint verification for a minute then it will automatically alert nearby people and police if the device senses no signal. Moreover, for first-hand safety, shockwave generator is also designed that women can use to attack the perpetrator. Additional features such as sending group messages, audio recording are also part of the proposed design. A mobile app is designed for women safety where safe locations from victim's current location will be shown on the map so that women can reach the safe place from her current location which is unsafe.

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Managing E-voting Process through Blockchain

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Abstract— **Conducting fair and transparent elections are the integral part of any democratic country. This exercise of conducting elections is a vital task for the election agencies of the countries along with the law enforcement agencies. Still now many countries are in the world is depending on ballot paper pattern for conducting the elections more efficiently. But this is not always the smart idea of conducting elections as using of ballot paper for conducting the elections may add more financial burden as it includes the more manpower in the process of conduction of elections, post voting security and counting of the same ballet papers. However, this is not the case in electronic voting machines, where all the process right from the conduction of elections, providing security and counting all the process is seamlessly conduct without much more hassle. The biggest democratic countries like India also rely on Electronic voting machines, providing the physical security of the voting machines is having the same burden as of ballot papers. Electronic voting machines are always having a threat of data tampering in mass numbers. So securing these votes in the electronic voting machine is a most important task in conduction of the elections. Blockchains are the trending technology for securing the data in the distributed paradigm more efficiently. So this research article provides a secured way to provide security for the post voting data in a controlled simulated environment using Blockchain. And the whole process is powered by the 16 byte hash keys obtained by processing the SHA 256 hashing algorithm and Bit mapping technology.**

Keywords— ***Blockchain, E-Voting, SHA 256, Bit mapping***.

I. Introduction

E-voting as a concept is one of the most important implementations of technology in governmental procedures. This is due to the fact that the voting mechanism using Ballot voting is one of the most archaic practices that is a remnant of the last era. The Ballot voting even though it is very old, is still being used across the world in one way or the other. It is the majority of the countries that are still using this old practice that is highly limited and filled with a lot of loopholes and generally an inefficient process.

With physical ballots, the voters have to physically stand in a line and wait for their turn. With a large amount of population, the physical process takes a significant amount of time. Every year there are reports of various elderly people and others suffering from ailments have been waiting in the sun too long to have a sunstroke. Many elderlies get asphyxiated in the large crowds and ultimately succumb to their injuries. The process of physical ballots is highly troublesome and can be fatal for the physically disabled and the elderly.

The physical ballot is also subject to various environmental elements and can experience weather changes across the country. This is problematic as if the water during rains gets inside the box, it would ruin the votes and would need to be discarded, which would lead to a substantial loss to everyone involved in the voting process. The ballots also need to be physically transported from one place to another, this leads to multiple cases of the voting data being tampered in transit. There are also possibilities that the ballot boxes will get damaged during transportation which would lead to the ballot being discarded.

The physical ballot votes also need to be counted in order to define the majority for the elections and declare a winner. The physical counting of votes is a long process that requires the votes to be segregated first into the different candidates and then the votes are physically counted. The possibility of an error being introduced is particularly high as there are humans counting the data and the segregation process also could lead to a wrong counting and the loss of some slips as the number of slips being counted is really large.

All the work in a physical ballot system is done manually, this is a great way to introduce inconsistencies in the whole process which is flawed from the beginning. The application of E-Voting is highly necessary as there has not been a single substantial improvement in the voting procedure over the years. Even though there has been a large growth in

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Air Quality Prediction Using Machine Learning

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ABSTRACT: We forecast the air pleasant of India via the usage of machine gaining knowledge of to predict the air great index of a given area. Air pleasant index of India is a general measure used to point out the pollutant (so2, no2, rspm, spm. etc.) degrees over a period. We developed a model to predict the air high-quality index primarily based on historic facts of previous years and predicting over a specific upcoming 12 months multivariable regression problem. Examining and defending air excellent has come to be one of the most quintessential things to do for the authorities in many industrial and urban areas today. The meteorological and visitors factors, burning of fossil fuels, and industrial parameters play significant roles in air pollution.With this increasing air pollution, Weare in want of imposing models which will document records about concentrations of air pollutants(so2,no2,etc).

KEYWORDS: AQI, dataset, preprocessing, ML algorithm, pickle file

I. INTRODUCTION

As the largest growing industrial nation, India is producing record amount of pollutants specifically Co2, pm2.5 etc and other harmful aerial contaminants. Air quality of a particular state or a country is a measure on the effect of pollutants on the respected regions, as per the Indian air quality standard pollutants are indexed in terms of their scale, these air quality indexes indicates the levels of major pollutants on the atmosphere. In the developing countries like India, the rapid increase in population and economic upswing in cities have lead to environmental problems such as air pollution, water pollution, noise pollution and many more.

II. LITERATURE SURVEY

Pooja Bhalgat, Sejal Pitale, Sachin Bhoite Air Quality Prediction using Machine Learning Algorithms
There has been elevated public awareness about the equal in our country.Global warming, acid rains, amplify in the quantity of asthma sufferers are some of the long-term penalties of air pollution. Precised air satisfactory forecasting can reduce the effect of maximal air pollution on the human beings and biosphere as well. Hence, bettering air high-quality forecasting is one of the top objectives for the society.

Mrs.j.Gana jeslin, akshaya INDIAN AIR QUALITY PREDICTION AND ANALYSIS USING RuiJun YANG*, HaiLong ZHOU, DanFeng DING
According to hedonic rate theory, using classification algorithm of the machine learning which encompass SVM, Naive Bayesian and KNN, set up the internal mapping relationship between characteristic variables that encompass fees of housing and air quality. Air satisfactory in urban residential district is estimated by means of feature variables. Finally, experiments have performed on the data set of residential district In Tianhe, Guangzhou city, confirmed that the most accuracy..

Ms. Varsha Hable-Khandekar, Dr. Pravin Srinath
Air Pollution has emerge as major, serious hassle worldwide. Because of its close relation to human health, it has gained a lot of attention of many researchers. People are turning into more cautious about higher approaches of monitoring air high-quality statistics and has become vital to protect human fitness from serious fitness problems brought about by using air pollution.

III. EXISTING SYSTEM APPROACH

This paper presents an built-in mannequin the usage of Artificial Neural Networks and Kriging to predict the degree of air pollution at a number of places in Mumbai and Navi Mumbai using previous information on hand from

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VIRTUAL STORE USING JQUERY, JAVASCRIPT AND PHP TECHNOLOGIES

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ABSTRACT

In today's world customer approach towards buying things has changed. Before buying they do lots of research online. So, taking business online becomes a necessity of this modern world. Internet makes business faster and easier in all aspects. In last five years trend of online shopping has increased. So, the number of online shoppers has increased tremendously. And because of that many of companies are shifting their business to online platform. Success of online business mainly depends on attractiveness of the website as well as responsiveness of the online platform. Web application acts as a bridge between customers and sellers. To build a high-performance web application lots of frontend and backend work is required. Companies like Amazon, Flipkart are growing their e-commerce business rapidly because of efficient web application.

I. INTRODUCTION

World Wide Web is a biggest platform for not only the large businesses but also for small entrepreneurs. According to survey in last three years millions of small businesses have been shifted to online platform.

Main objectives behind taking your business online are:

- To enable faster buying/selling procedure, as well as easy to find products.
- Buying/selling 24/7.
- More reach to customers, there is no theoretical geographic limitations.
- Low operational costs and better quality of services.
- No need of physical enterprise set-ups.

In this era of internet, online e-commerce stores are getting more profited than physical stores. This online culture is growing expeditiously because of web technology. These online stores are using web technology to create interactive websites and web applications to expand their business. Quality of web application depends on how user-friendly UI of the application is. Awesome user interface attracts many customers but if the application is not responsive enough the user may not purchase product. That is why SDLC approach we followed while developing web application which, takes the user's choices into consideration. The main objective is to promote the online e-commerce stores.

II. METHODOLOGY

Our goal was to develop a web application that would be attractive enough, have a professional look and user friendly. The entire planning process took the following steps.

Defining Use Case Models:

Writing use cases or stories of using a system is an excellent technique to understand and describe requirements. An end user with internet browsing facility enabled registers into our site and logs into our site. Finds products of his interest using the search option. Adds them into the shopping cart and finally orders the products online when the electronic copy of the bill is automatically generated. So, from the stated use case model we found out the following to be the primary requirements:

- A registration page
- Search option
- Shopping cart
- Billing system

DEVELOPMENT TOOLS:

A Detailed Review on Additive Manufacturing Methods for Healthcare Sector

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PDF

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Abstract

Healthcare engineering has developed an environment in which advancements in the lifesciences are not only possible, but also needed, in order to solve complex biological problems. Different applications of additive manufacturing technology in the medical field were investigated in order to determine the current state of the art and future directions. To demonstrate the advantages of additive manufacturing technology in medical applications, as well as current and potential applications. A literature review-based research on additive manufacturing that is useful in a variety of ways to treat medical conditions has been completed, as well as bibliometric analysis. The study of primary applications of additive manufacturing for medical purposes, as well as their significant achievements, was briefly mentioned. The ongoing study is often divided into categories based on the application of additive manufacturing in medicine, including requirements, accomplishments, and references. The main medical fields where additive manufacturing is used, as well as key sources, aims, and benefits, have been established. The aim of this paper is to conduct a literature

Multipurpose Military Surveillance Robot

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Abstract— Robotics has been a staple of advanced manufacturing for over half a century. As robots and their peripheral equipment become more sophisticated, reliable and miniaturized, these systems are increasingly being utilized for military and law enforcement purposes Mobile robotics play an increasingly important role in military matters, from patrol to dealing with potential explosives.

Keywords: Bluetooth module; Camera; Control; Metal Detector; Ultrasonic sensor; smoke Sensor

I. Introduction

With the growing invention of transistors and integrated circuits, computer industry added brains to the brawn of already existing machines. Bluetooth technology was created by telecom vendor Ericsson in 1994[2].

The advent of technology has brought a revolutionary change in the field of robotics and automation which ranges in all the sectors from household domestic works to the defense sector. Today in the global market, smart phones also have brought a revolution in changing people's lifestyle and providing numerous applications on different operating systems. Android operating system is one of these systems build on open source which has made a huge impact providing many applications for robotics to help people in their day to day life. [1]

II. Related Literature

The existing robots are whole operated with the help of remote control. This operation is sometimes tedious, less efficient and has no guarantee for its security. The existing system consists of trade-off between processing speed, insecure communication and cost. With growing trends, controllers are developing tremendously. Hence we can make use of advanced controller in controlling the operation of robot. The proposed project can be built further to work as a HUMANOID[2].

The camera will capture video all around. A number of techniques are available for robot control however they have difficult user interface and limited to certain environments[3].

A. Block Diagram [1]

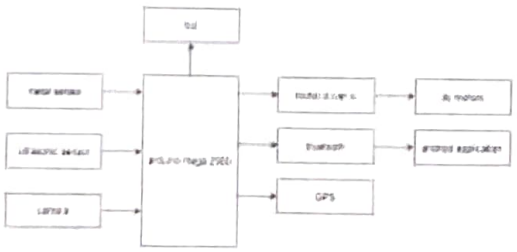


Fig. 1: Block diagram of multi-purpose military service robot

A smart phone Android operated robot. Now here is a simple to control your robot using Bluetooth module and microcontroller with your android Smartphone device. The controlling devices of the whole system are a microcontroller. Bluetooth module, DC motors are interfaced to the microcontroller. The data receive by the Bluetooth module from android smart phone is fed as input to the controller. The controller acts accordingly on the DC motor of the robot. The robot in the project can be made to move in all the four directions using the android phone. Android smart phone controller.

B. Arduino Uno Microcontroller

A single-board microcontroller that makes the application easy to access with various interactive objects and its surrounding is called Arduino Uno[6]

Fig. 2 Shows the Arduino Uno Microcontroller.

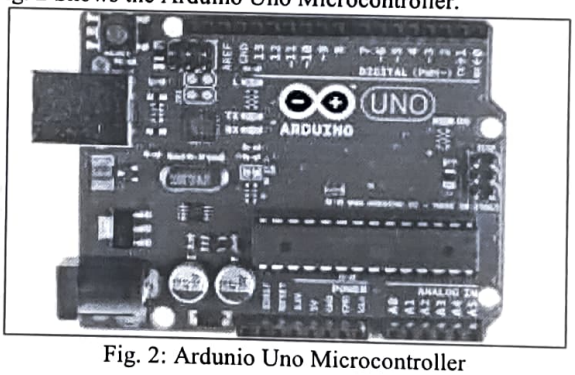


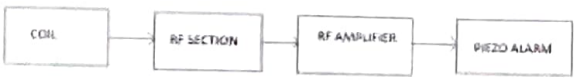
Fig. 2: Ardunio Uno Microcontroller

C. Metal Detector sensor[3]

This metal detector can be used to detect slightly big size metallic objects. It is used to sensing coil. The coil should be kept near metallic object for detection. Input of circuit is a weak R.F range oscillator. Sensing coil forms parts of tuned oscillator.[3]

If a portion of metal is in the range of the coil, the eddy current will be induced and make a magnetic field of its own. The difference of the magnetic field caused by metal is used to detect metal [8]. If there is any metal, the robot will stop and update the operator about the presence of mine and metal in the field. The detection of metal is shown on the LCD, the message which is displayed on the screen is "Mine Detected".

Fig. 3 Shows the working of metal detector.



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Advancements in Geopolymer Technology: A Comprehensive Review and Future Prospects

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ABSTRACT

Geopolymer technology stands as a beacon of sustainable innovation in the construction industry, offering a viable alternative to traditional cement-based materials. With a focus on reducing environmental impact and improving overall performance, this paper undertakes a thorough examination of recent strides in geopolymer research. It delves into diverse facets, encompassing synthesis methodologies, characterization techniques, material properties, versatile applications, existing challenges, and promising future avenues. In the realm of synthesis methods, various approaches including alkaline activation, thermal treatments, and innovative additives are explored for their efficacy in optimizing the geopolymerization process. Characterization techniques such as X-ray diffraction, Fourier-transform infrared spectroscopy, scanning electron microscopy, and nuclear magnetic resonance spectroscopy provide critical insights into the molecular structure, composition, and mechanical behavior of geopolymers. The discussion extends to elucidating the remarkable properties exhibited by geopolymers, ranging from impressive compressive strength and fire resistance to superior durability and chemical stability. These properties, influenced by factors like precursor composition and curing conditions, underscore the potential of geopolymers to revolutionize construction practices across diverse applications.

Keywords: Geopolymer, sustainable construction, cement alternative, synthesis methods, characterization techniques, material properties, applications, challenges, future prospects.

INTRODUCTION

Geopolymer technology has emerged as a sustainable solution to the environmental challenges posed by traditional cement production. With the construction industry being a significant contributor to carbon emissions and resource depletion, the development of alternative construction materials has become imperative. Geopolymers, based on aluminosilicate precursors, offer a promising avenue due to their lower carbon footprint, reduced energy consumption, and ability to utilize industrial by-products such as fly ash and slag. This section delves deeper into the motivation behind exploring geopolymer technology, emphasizing its potential to revolutionize construction practices and mitigate the environmental impact of infrastructure development.

Geopolymers, a class of inorganic polymers formed from the reaction of aluminosilicate sources with alkaline activators, have garnered significant attention due to their potential as sustainable alternatives to traditional Portland cement-based materials. Over the past few decades, extensive research has been conducted to explore the synthesis, properties, and applications of geopolymers. This literature review aims to provide a comprehensive overview of the advancements in geopolymer technology before 2018, covering key research findings and future prospects.
The concept of geopolymers was introduced by Davidovits in the late 1980s, emphasizing the synthesis of high-strength cementitious materials through geosynthesis processes (Davidovits, 1988). Davidovits (1999) further elucidated the chemistry and terminology of geopolymeric systems, laying the groundwork for subsequent research in this field.

The development of geopolymers primarily relies on aluminosilicate sources such as fly ash, slag, and metakaolin, activated by alkaline solutions. Hardjito et al. (2004) investigated the formulation of fly ash-based geopolymer concrete, demonstrating its feasibility as a construction material. Xu and Van Deventer (2000) provided insights into the geopolymerization process of alumino-silicate minerals, elucidating the mechanisms behind the formation of geopolymers.

Geopolymers exhibit distinct properties influenced by composition, curing conditions, and activator type. Duxson et al. (2007) provided insights into the structure, processing, and properties of geopolymers, emphasizing their potential for various industrial applications. Zhang et al. (2014) investigated the relationship between composition, pore structure, and efflorescence of fly ash-based geopolymers, shedding light on factors affecting material performance.

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Advancements in Geopolymer Technology: A Comprehensive Review and Future Prospects

Dr. Ushadevi Patil[1], Prof. Seema Shiyekar[2], Prof. Poonam Nandihalli[3]

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ABSTRACT

Geopolymer technology stands as a beacon of sustainable innovation in the construction industry, offering a viable alternative to traditional cement-based materials. With a focus on reducing environmental impact and improving overall performance, this paper undertakes a thorough examination of recent strides in geopolymer research. It delves into diverse facets, encompassing synthesis methodologies, characterization techniques, material properties, versatile applications, existing challenges, and promising future avenues. In the realm of synthesis methods, various approaches including alkaline activation, thermal treatments, and innovative additives are explored for their efficacy in optimizing the geopolymerization process. Characterization techniques such as X-ray diffraction, Fourier-transform infrared spectroscopy, scanning electron microscopy, and nuclear magnetic resonance spectroscopy provide critical insights into the molecular structure, composition, and mechanical behavior of geopolymers. The discussion extends to elucidating the remarkable properties exhibited by geopolymers, ranging from impressive compressive strength and fire resistance to superior durability and chemical stability. These properties, influenced by factors like precursor composition and curing conditions, underscore the potential of geopolymers to revolutionize construction practices across diverse applications.

Keywords: Geopolymer, sustainable construction, cement alternative, synthesis methods, characterization techniques, material properties, applications, challenges, future prospects.

INTRODUCTION

Geopolymer technology has emerged as a sustainable solution to the environmental challenges posed by traditional cement production. With the construction industry being a significant contributor to carbon emissions and resource depletion, the development of alternative construction materials has become imperative. Geopolymers, based on aluminosilicate precursors, offer a promising avenue due to their lower carbon footprint, reduced energy consumption, and ability to utilize industrial by-products such as fly ash and slag. This section delves deeper into the motivation behind exploring geopolymer technology, emphasizing its potential to revolutionize construction practices and mitigate the environmental impact of infrastructure development.

Geopolymers, a class of inorganic polymers formed from the reaction of aluminosilicate sources with alkaline activators, have garnered significant attention due to their potential as sustainable alternatives to traditional Portland cement-based materials. Over the past few decades, extensive research has been conducted to explore the synthesis, properties, and applications of geopolymers. This literature review aims to provide a comprehensive overview of the advancements in geopolymer technology before 2018, covering key research findings and future prospects.
The concept of geopolymers was introduced by Davidovits in the late 1980s, emphasizing the synthesis of high-strength cementitious materials through geosynthesis processes (Davidovits, 1988). Davidovits (1999) further elucidated the chemistry and terminology of geopolymeric systems, laying the groundwork for subsequent research in this field.

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Geospatial Technology in Disaster Management: Harnessing Spatial Intelligence for Effective Preparedness, Response, and Recovery

Prof. Dhananjaya A S[1], Prof. Vinayak B Kulkarni[2], Prof. Shilpa Mahajan[3], Prof. Sonam Agrawal[4]

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The application of geospatial technology in disaster management has emerged as a critical domain, offering unparalleled insights and capabilities across all phases of the disaster management cycle. This paper provides a comprehensive exploration of the multifaceted role of geospatial technology in disaster preparedness, response, and recovery. Drawing upon a wide range of literature, case studies, and examples, this paper elucidates the significance of integrating geospatial data, remote sensing, Geographic Information Systems (GIS), and other spatial technologies into disaster management strategies. Furthermore, it discusses the challenges and opportunities associated with leveraging geospatial technology to build resilient communities and mitigate the impact of disasters in an increasingly complex and interconnected world.

INTRODUCTION

Disasters, whether natural or anthropogenic, pose significant threats to human lives, infrastructure, and the environment. With the increasing frequency and severity of disasters globally, effective disaster management has become paramount. Geospatial technology, encompassing tools and techniques for capturing, analyzing, and visualizing spatial data, has revolutionized the way governments, organizations, and communities prepare for, respond to, and recover from disasters. This paper aims to provide an in-depth analysis of the application of geospatial technology in disaster management, highlighting its importance in enhancing situational awareness, supporting decision-making processes, and facilitating rapid response efforts.

Geospatial technology has emerged as a critical tool in disaster management, offering unparalleled capabilities in spatial intelligence for effective preparedness, response, and recovery efforts. This literature review delves into various aspects of geospatial technology and its applications in disaster management, drawing insights from a range of seminal works prior to 2018.

Goodchild and Glennon [1] introduce the concept of crowdsourcing geographic information for disaster response, highlighting its potential in enhancing situational awareness and resource allocation. They emphasize the importance of harnessing volunteered geographic information from platforms like OpenStreetMap in crisis situations.

Haklay [2] conducts a comparative study between OpenStreetMap and traditional datasets like Ordnance Survey, evaluating the quality and reliability of volunteered geographic information. The study underscores the utility of crowdsourced data in disaster management while acknowledging the need for quality control mechanisms.

Huang et al. [3] present the development of a GIS-based disaster information management system tailored for catastrophic earthquakes, exemplified in the context of Sichuan, China. Their research emphasizes the role of geospatial technology in facilitating rapid response and resource mobilization during disasters.

Kuhn [4] provides theoretical insights into mapping practices and cartographic representation, laying the foundation for understanding the spatial dimensions of disaster management. The discussion encompasses various mapping theories and their relevance in crisis situations.

Labonte and Tate [5] contribute to the discourse on social vulnerability in disaster management, proposing a social vulnerability index to aid in risk assessment and mitigation strategies. Their work underscores the importance of integrating socio-economic factors into geospatial analyses for more comprehensive disaster preparedness.

Li et al. [6] delve into the challenges and methodologies of handling geospatial big data, offering a comprehensive review of theories and methods in this burgeoning field. Their analysis provides valuable insights for leveraging big data analytics in disaster management contexts.

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Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems

Dr. Jambi Ratna Raja Kumar[1], Prof. Bharati Kudale[2], Prof. Prerana Rawat[3], Prof. Archana Burujwale[4]

[1,2,3,4]Genba Sopanrao Moze College of Engineering Pune

ABSTRACT

This research paper explores the latest advancements in machine learning algorithms tailored for real-time image recognition tasks within computer vision systems. It delves into novel approaches such as deep learning architectures, convolutional neural networks (CNNs), and recurrent neural networks (RNNs), analyzing their effectiveness in handling complex visual data and achieving high accuracy rates. The paper discusses key challenges, such as computational efficiency and model scalability, and proposes innovative solutions to enhance the performance of image recognition systems in diverse applications, including autonomous vehicles, surveillance systems, and medical imaging.

Keywords: Machine Learning Algorithms, Real-time Image Recognition, Computer Vision Systems, Deep Learning Architectures, Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Visual Data Analysis, High Accuracy Rates, Computational Efficiency

INTRODUCTION

In recent years, the field of computer vision has witnessed remarkable progress, largely fueled by advancements in machine learning algorithms. Image recognition, a crucial component of computer vision systems, has particularly benefited from the emergence of deep learning techniques. Real-time image recognition, the ability to quickly and accurately identify objects or patterns in visual data, is essential for numerous applications ranging from autonomous driving to healthcare. This paper explores the state-of-the-art machine learning algorithms designed to address the challenges associated with real-time image recognition in computer vision systems.

Computer vision systems have witnessed significant advancements in recent years, largely due to the proliferation of machine learning algorithms. These algorithms, particularly deep learning models, have revolutionized real-time image recognition tasks, enabling computers to interpret and understand visual data with unprecedented accuracy and speed. This literature review aims to provide an overview of key advancements in machine learning algorithms for real-time image recognition in computer vision systems, focusing on relevant research published before 2019.

1. Krizhevsky, A., Sutskever, I., & Hinton, G. E. (2012). ImageNet classification with deep convolutional neural networks. In Advances in neural information processing systems (pp. 1097-1105).

- This seminal work introduced the use of deep convolutional neural networks (CNNs) for image classification tasks. The proposed AlexNet architecture achieved breakthrough performance on the ImageNet dataset, demonstrating the efficacy of deep learning for large-scale image recognition.

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- The GoogLeNet architecture, proposed in this paper, introduced the concept of inception modules and significantly deepened CNNs while maintaining computational efficiency. This innovation paved the way for more complex and accurate image recognition models.

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- Simonyan and Zisserman proposed the VGG architecture, which utilized a simple yet effective network structure comprising multiple convolutional layers with small filter sizes. VGG networks achieved competitive performance on various image recognition benchmarks, showcasing the importance of network depth.

4. He, K., Zhang, X., Ren, S., & Sun, J. (2016). Deep residual learning for image recognition. In Proceedings of the IEEE conference on computer vision and pattern recognition (pp. 770-778).

- ResNet, introduced in this paper, addressed the problem of vanishing gradients in very deep neural networks by introducing residual connections. This architectural innovation enabled training of extremely deep networks, leading to further improvements in image recognition accuracy.

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Advancement in Machine Learning Algorithms for Real-Time Image Recognition in Computer Vision Systems

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ABSTRACT

This research paper explores the latest advancements in machine learning algorithms tailored for real-time image recognition tasks within computer vision systems. It delves into novel approaches such as deep learning architectures, convolutional neural networks (CNNs), and recurrent neural networks (RNNs), analyzing their effectiveness in handling complex visual data and achieving high accuracy rates. The paper discusses key challenges, such as computational efficiency and model scalability, and proposes innovative solutions to enhance the performance of image recognition systems in diverse applications, including autonomous vehicles, surveillance systems, and medical imaging.

Keywords: Machine Learning Algorithms, Real-time Image Recognition, Computer Vision Systems, Deep Learning Architectures, Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Visual Data Analysis, High Accuracy Rates, Computational Efficiency

INTRODUCTION

In recent years, the field of computer vision has witnessed remarkable progress, largely fueled by advancements in machine learning algorithms. Image recognition, a crucial component of computer vision systems, has particularly benefited from the emergence of deep learning techniques. Real-time image recognition, the ability to quickly and accurately identify objects or patterns in visual data, is essential for numerous applications ranging from autonomous driving to healthcare. This paper explores the state-of-the-art machine learning algorithms designed to address the challenges associated with real-time image recognition in computer vision systems.

Computer vision systems have witnessed significant advancements in recent years, largely due to the proliferation of machine learning algorithms. These algorithms, particularly deep learning models, have revolutionized real-time image recognition tasks, enabling computers to interpret and understand visual data with unprecedented accuracy and speed. This literature review aims to provide an overview of key advancements in machine learning algorithms for real-time image recognition in computer vision systems, focusing on relevant research published before 2019.

1. Krizhevsky, A., Sutskever, I., & Hinton, G. E. (2012). ImageNet classification with deep convolutional neural networks. In Advances in neural information processing systems (pp. 1097-1105).
   - This seminal work introduced the use of deep convolutional neural networks (CNNs) for image classification tasks. The proposed AlexNet architecture achieved breakthrough performance on the ImageNet dataset, demonstrating the efficacy of deep learning for large-scale image recognition.

2. Szegedy, C., Liu, W., Jia, Y., Sermanet, P., Reed, S., Anguelov, D., ...&Rabinovich, A. (2015). Going deeper with convolutions. In Proceedings of the IEEE conference on computer vision and pattern recognition (pp. 1-9).
   - The GoogLeNet architecture, proposed in this paper, introduced the concept of inception modules and significantly deepened CNNs while maintaining computational efficiency. This innovation paved the way for more complex and accurate image recognition models.

3. Simonyan, K., & Zisserman, A. (2014). Very deep convolutional networks for large-scale image recognition. arXiv preprint arXiv:1409.1556.
   - Simonyan and Zisserman proposed the VGG architecture, which utilized a simple yet effective network structure comprising multiple convolutional layers with small filter sizes. VGG networks achieved competitive performance on various image recognition benchmarks, showcasing the importance of network depth.

4. He, K., Zhang, X., Ren, S., & Sun, J. (2016). Deep residual learning for image recognition. In Proceedings of the IEEE conference on computer vision and pattern recognition (pp. 770-778).

   - ResNet, introduced in this paper, addressed the problem of vanishing gradients in very deep neural networks by introducing residual connections. This architectural innovation enabled training of extremely deep networks, leading to further improvements in image recognition accuracy.

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Secure and Efficient Data Transmission in Internet of Things (IoT) Networks: A Review of Protocols and Techniques

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Authentication Mechanisms for IoT Security

Authentication mechanisms play a vital role in verifying the identity and integrity of IoT devices, preventing unauthorized access, and establishing trust relationships within IoT networks. Various authentication methods are employed to authenticate devices, users, and communication channels in IoT deployments. Some of the commonly used authentication mechanisms include:

Public Key Infrastructure (PKI): PKI is a framework that enables secure communication and authentication through the use of digital certificates issued by a trusted Certificate Authority (CA). In IoT environments, PKI is utilized to authenticate devices and servers, validate digital signatures, and establish secure communication channels using Transport Layer Security (TLS) or Datagram Transport Layer Security (DTLS) protocols.

The Internet of Things (IoT) has emerged as a transformative paradigm, enabling seamless connectivity and communication among physical devices. However, ensuring secure and efficient data transmission within IoT networks is imperative to mitigate potential cyber threats and safeguard sensitive information (Arjona et al., 2020). Various protocols and techniques have been developed to address these challenges.

One of the fundamental aspects of IoT security is understanding the enabling technologies and protocols. Al-Fuqaha et al. (2015) provide a comprehensive survey on IoT, covering technologies, protocols, and applications, which serves as a foundational understanding for securing IoT networks. Additionally, Antonakakis et al. (2017) shed light on specific threats like botnets, such as the Mirai botnet, emphasizing the urgency of robust security measures.

Wireless Sensor Networks (WSNs) are integral to IoT deployments, but they are susceptible to security attacks. Kaur and Singh (2016) review security attacks and intrusion detection techniques in WSNs, offering insights into the challenges and potential solutions. Moreover, Oliveira and Rodrigues (2019) highlight privacy concerns in IoT and propose measures to address them, underscoring the importance of privacy-preserving protocols.

Blockchain technology has garnered significant attention for its potential to enhance security in IoT. Xu and Cui (2019) propose a blockchain-based data transmission scheme for IoT, leveraging the tamper-resistant nature of blockchain to ensure data integrity and authenticity. Similarly, Zhang et al. (2019) explore blockchain-based firmware updates for IoT devices, mitigating the risk of unauthorized modifications.

The architecture of IoT systems plays a crucial role in determining their security and efficiency. Atzori et al. (2010) present a survey on IoT architectures, highlighting different architectural paradigms and their implications for security. Furthermore, Singh et al. (2018) delve into the intricacies of IoT architectures, discussing various design considerations and their impact on system performance and security.

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Emerging Trends in Quantum Computing: Opportunities and Challenges for Practical Implementation

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ABSTRACT

This research paper investigates emerging trends in quantum computing and their implications for practical implementation in real-world applications. It explores key concepts in quantum computing, including qubits, quantum gates, and quantum algorithms, and examines recent breakthroughs in quantum hardware and software development. The paper discusses potential applications of quantum computing in areas such as cryptography, optimization, and drug discovery, highlighting the transformative impact of quantum supremacy on computational capabilities. Furthermore, it addresses challenges such as error correction, qubit coherence, and scalability, and proposes strategies to overcome these barriers and unlock the full potential of quantum computing for solving complex computational problems.

Keywords: Quantum Computing, Qubits, Quantum Gates, Quantum Algorithms, Quantum Hardware, Quantum Software, Cryptography, Optimization, Drug Discovery, Quantum Supremacy, Error Correction, Qubit Coherence, Scalability, Real-World Applications,

INTRODUCTION

Quantum computing stands at the precipice of a technological revolution, poised to redefine the boundaries of computational prowess. Unlike classical computers that rely on binary bits, quantum computers harness the peculiar principles of quantum mechanics, employing quantum bits or qubits to encode and process information in a fundamentally different manner. This paradigm shift offers tantalizing prospects for tackling complex computational problems that lie beyond the reach of classical computing architectures. However, realizing the full potential of quantum computing necessitates a comprehensive understanding of emerging trends, along with a proactive approach to address the associated challenges.

Quantum computing has emerged as a revolutionary field with the potential to solve complex problems beyond the capabilities of classical computers. The foundational work by Shor (1997) on polynomial-time algorithms for prime factorization and Grover (1996) on quantum database search algorithms set the stage for rapid advancements in this field . These early breakthroughs underscored the immense computational power of quantum systems, propelling research into both theoretical and practical aspects of quantum computing.

The theoretical underpinnings of quantum computing are rich and diverse. Nielsen and Chuang (2010) provided a comprehensive overview of quantum computation and information, laying out the principles that guide the development of quantum algorithms and error correction techniques . The work by Deutsch and Jozsa (1992) on the rapid solution of certain computational problems highlighted the quantum advantage in specific scenarios . Furthermore, Montanaro (2016) offered an extensive overview of various quantum algorithms, emphasizing their potential applications and the challenges in their practical implementation .

The practical realization of quantum computing hinges on the development of robust hardware. Superconducting circuits, as discussed by Blais et al. (2021) and Devoret and Schoelkopf (2013), have been pivotal in advancing quantum computing technologies . These systems leverage the principles of circuit quantum electrodynamics to create and manipulate qubits with high fidelity. Additionally, the scalability of quantum processors has been a significant focus, with Gambetta, Chow, and Steffen (2017) exploring the construction of logical qubits within superconducting systems .

The roadmap for quantum technologies, outlined by Acín et al. (2018), reflects the collaborative efforts in the European community to advance quantum research and its applications . This includes innovations in solid-state spins, as highlighted by Awschalom et al. (2018), which utilize optically interfaced systems to achieve high levels of quantum

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