ST.FRANCIS INSTITUTE OF TECHNOLOGY (ENGINEERING COLLEGE)
SVP ROAD, MT.POINSUR, BORIVALI (WEST), MUMBAI 400103

# LEARNING AND INFORMATION RESOURCE CENTRE

# CATALOGUE OF B.E. PROJECT REPORTS

# BATCH 2019-2020

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## EXTC

## ABSTRACTS

**Title:** Surveillance using Face Recognition

**Author:** Aditya Bhide, Jaydeep Asolkar, Saish Jadhav, Nikhil Jog

**Project Guide:** Ms.Jovita Serrao

**Abstracts:** In this project, we implemented Convolutional Neural Network (CNN) with three well-known image recognition algorithms such as Principal Com-ponent Analysis (PCA), Local Binary Patterns Histograms (LBPH) andK–Nearest Neighbour (KNN) for face classification and face recognition. In this implementation, the overall recognition confidence of the PCA, LBPH, KNN and CNN was demonstrated. All the algorithms were first implemented on the Yale database and then on ORL database .Yale database consist of 165 images of 15 individuals with 11 images per subject and ORL face database consists of 40 individuals having 10 photos of each in-dividual. These experimental results demonstrated the use of CNN as the most effective method for face recognition.

**Title:** Remotely Controlled Valve for Security Purpose

**Author:** Gargee Sonawane, Vaishnavi Munj, Ayush Mishra, Tauheed Shaikh

**Project Guide:** Dr. Uday Pandit Khot

**Abstracts:** The main scope of the project is to control the valve of a dispensary vehicle automatically. This can be done to avoid unauthorized outflow of the liquid from the dispensary vehicle. This project presents an automotive localization system using GPS and electronic mail services. The system permits localization of the automobile and transmitting the position to the owner on his/her mobile phone. As the vehicle reaches the destination customer's identity is confirmed through email verification. The customer has to enter the amount of the liquid and pay for the same via provided payment application. The control instruction is given to the raspberry pi through interface, which activates the relay and the liquid gets dispensed accordingly with the help of a flow meter. Use of flow meter gives the advantage to use any liquid as per desire. This is more secure, reliable and low-cost.

**Title:** Drowsy Driver Detection using Deep Learning

**Author:** Divya Ahuja, Arati Manoj, Murugan Nadar

**Project Guide:** Ms. Shilpa Chaman

**Abstracts:** Microsleep and fatigue of the drivers are among the significant causes of car accidents. Every year, drowsy drivers result in 40% of fatal crashes in India naturally making it an area of concern. In order to avoid such mishaps, it is important to devise a system that can detect drowsiness be-forehand and alert the driver to stay awake. In relevance to this, our project has proposed an effective driver drowsiness detection system. Thus the project captures the image of the driver in real-time, compare the images to detect if the driver is drowsy and thereby alert the driver. This project uses a hybrid of convolution neural network (CNN) and long short-term memory (LSTM) for real-time drowsy driver detection**.**

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**Title:** Design of Triple-band MIMO Antenna for Wireless Applications

**Author:** Manisha Mane, Samiksha Kotian, Sangita Marri, Adithi Mishra

**Project Guide:** Dr.Anjali Chaudhari

**Abstracts:** The rapid development of modern wireless communication and with the wide application of wireless local area network and worldwide interoperabil-ity for microwave access technologies in wireless communication systems urge on the need of Multiband multiple input multiple output (MIMO) an-tenna system. The proposed work focuses on the design of UWB MIMO antenna with band notch characteristics for wireless communication. Aboard area of 46 × 38mm2 comprehends two pairs of SRR's and two feed-line stubs printed on the top layer of the substrate while the ground planewith an EBG and T-shaped slot is printed on the bottom layer. The an-tenna operates over 1.21 GHz to 5.98 GHz for an impedance matching of S11 < -10 dB while rejecting the 1.71 GHz to 3.32 GHz and 4.03 GHz to 4.8 GHz bands. Isolation of about 15 dB is acquired after employing the T-shaped slot and the EBG on the ground plane. The band notch function prevents the interference between UWB and the existing narrowband sys-tems such as WLAN 5.15 GHz to 5.85 GHz, WiMAX 5.25 GHz to 5.85 GHz and Dedicated Short Range Communication 5.625 GHz to 5.95 GHz.

**Title:** Automated Canteen System

**Author:** Jedidiah Harpanahalli, Pranav Jain, Chinmay Gokarn, Kevin Bhingradia

**Project Guide:** Ms. Jayasudha Koti

**Abstracts:** With a move towards a digital India, digitization has to be ensured in all aspects of the society. In this paper we the authors present a RFID based restaurant management system by using the concepts of open source technologies like Python and Raspberry Pi. This system is introduced as a solution to the bottleneck caused by the cashiers. Focusing on self-service, the proposed system aims to develop a digital, contactless and secure restaurant environment which will enable patron's to seamlessly Select, Scan and Eat their desired food items. Identification of food items along with the payment is done using Radio Frequency Identification (RFID) technology wherein each food item is marked using adhesive

RFID tags, the amount for the same is deducted automatically from the patron's digital wallet. This results in significant advancement towards automatic management and reduction in manual labour in a restaurant environment.

**Title:** Restaurant Chatbot using Rasa

**Author:** Manish Katheeth, Yashvi Desai, Nikhil Mishra, Chinmay Tawde

**Project Guide**: Ms. Valentina Rani

**Abstracts:** Chatbot is an Artificial Intelligence software that is designed to converse with humans through messaging or mobile applications, web-based applications. Our aim is to design a domain specific chatbot. We have developed an chatbot that is restuarant specific as most of the people are excited about going to new restuarants and trying different cuisines. Our bot, works as a guide to find nearby restuarants related to your choice of cuisine and also helps to make reservations for the same. The user's query or command is processed using Natural Language Processing (NLP) engine and the user will be provided with the appropriate response. All this processing takes place within seconds thereby proving to be an effective real time model.

**Title:** Agronomical Farm-Bot

**Author:** Piyush Gopinath Tare, Manang Haresh Nagda, Netradeep Bhaskar Jadhav

**Project Guide:** Ms. Snehal Lopes

**Abstracts:** The main goal of this project is to design and implement a reliable Agronomical farm-bot based on Watering and Seed sowing mechanism robot with on board temperature and tank water level update on mobile phone and controlled by mobile application. Automation can motivate personal and medium scale farming, through cutting down the time requirements for farming and by increasing the farming efficiency. One approach is to utilise available information technologies in the form of more intelligent machines to reduce and target energy inputs in more effective ways than in the past. This project describes how to Sprinkle water on crops and sow seeds using robot controlled by mobile phone,

some features about Bluetooth technology, components of the mobile and robot. We present a review of robots controlled by mobile phone via moving the robot upward, backward, left and right side by the android application such as Arduino, Bluetooth. Here we are using Bluetooth communication, interface micro-controller and android application. We are using Arduino software to interface the Bluetooth module with micro-controller. According to commands received from android the robot motion can be controlled. We derived simple solutions to provide a framework for building robots with very low cost but with high computation and sensing capabilities provided by the smart phone that is used as a control device.

**Title:** Design of UWB MIMO Antenna

**Author:** Nancy Dungrani, Bhavna Bhasin, Nitish Choudhary, Sheldon D'Souza

**Project Guide:** Ms. Jovita Serrao

**Abstracts:** Ultra wideband (UWB) has a wide bandwidth ranging from 3.1 GHz - 10.7 GHz. Wide bandwidth of 7.6 GHz support various wireless applications like Wi-MAX, Wi-Fi, WLAN. Furthermore, MIMO is a radio communication technology that is being mentioned and used in many applications these days due to the advantages like multipath fading, link reliability, and improvement in channel capacity. We propose to design and implement a printed monopole MIMO antenna for UWB applications. Mutual coupling is one of the problems in the design of MIMO antennas. Mitigation of mutual coupling remains a challenge. Various isolation enhancement techniques in MIMO antennas are proposed in the literature. We shall select an appropriate coupling reduction technique to obtain high isolation in the structure.

**Title:** Smart Glove for Physically Disabled

**Author:** Jaspreet Singh Bahal, Sakina Baranwala, Gavin Furtado, Rupesh Jaisawar

**Project Guide:** Ms. Shilpa Chaman

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**Abstracts:** Communication plays an important role for human beings. This device helps in improving the communication with the deaf, dumb and physically disabled people using flex sensor technology. Smart Glove for Physically Disabled is a device that can translate different sign language to text as well as voice note, the audio will be in Hindi language. Gesturing is an inherent way of communicating to define the thoughts. The people who are communicating with deaf and dumb may not understand their signs and expressions. Hence, an approach has been created and modified to hear the gesture-based communication. This device will be very helpful to physically disabled for communicating their thoughts to others. In the proposed system, the device's primary objective is to convert hand gestures into vocal and text output through flex sensors. Flex sensors play the major role. The gestures are produced by bending in the sensors, due to bending, there is a variation in the resistance. The change in resistance depends upon the amount of flexion experienced by the sensors. By using the suitable circuit, responses of the sensors are collected by Arduino and serially communicated with raspberry pi for processing. Raspberry pi is a small microcomputer is used for the working of the program in the hardware circuit which offers high reliability and fast response. Here the device recognizes the sign language on the mapping of gestures. The main advantage of using this device is to recognize letters and words. The vocal output is in the form of predefined vocal commands where each gesture is associated with an appropriate command. Our project will lower the barrier in the way of communication between the physically disabled and normal people.

**Title:** Smart Road Divider

**Author:** Saurabh Mane, Shruti Kasar, Omkar Kulkarni, Ankur Mistry

**Project Guide:** Ms. Savita Kulkarni

**Abstracts:** The main goal of this project is to design and implement a highly secured and reliable smart road divider system. Over the past few years, it is observed that the population of India has been increased very rapidly which results in increase in number of vehicles running on roads and shrinking of road space. This causes chaos on roads and intricate traffic in cities. The roads are the only whereabouts for road traffic as well as accidents and these roads are duplex,

partitioned by road dividers. Generally, road divider is used for dividing the incoming and outgoing traffic, but its use as a 'traffic problem solver' will be introduced in this proposed system. The main purpose of 'Sumauto-D-Wider' is to make both directional road traffic nearly of equal speed without hampering the safety of vehicles running on the road. The main problem of steady traffic divider is that on both sides of the divider, the width of the road is uniform and undeviating**.**

**Title:** Automatic Bird Species Recognition from Birds' Voice

**Author:** Aditya Basroor, Parth Bhatt, Sresht Chavan, Austin Fernandes

**Project Guide:** Dr. Kevin Noronha

**Abstracts:** Our goal here is to identify to which species a bird belongs to by means of an audio recording i.e. to recognize the species of a bird based on its voice We hence propose a model which will extract features i.e. MFCC from the audio files, and do the classification using k-nearest neighbours (KNN) to give us the result. The proposed classifier achieves an accuracy of around 98% on a data set which contains 10 different bird species.

**Title:** Brain Tumor Detection And Analysis

**Author:** Parth U. Toraskar, Rutuja S. Kadav, Tanmayee S. Gosavi, Krishna H. Chavda

**Project Guide:** Dr. Deepak Jayaswal

**Abstracts:** The field of medical imaging is gaining importance with an increase in the demand for automated, reliable, fast and efficient diagnosis which can provide insight to the image better than human eyes. Brain tumor is the second leading cause for cancer-related deaths in men in age 20 to 39 and fifth leading cause cancer among women in same age group. Brain tumors are painful and may result in various diseases if not cured properly.Diagnosis of tumor is a very important part in its treatment. Identification plays an important part in the diagnosis of benign and malignant tumors. A prime reason behind an increase in the number of

cancer patients worldwide is the ignorance towards treatment of a tumor in its early stages This project illustrates the ability of 3-D U-Net to separate the abnormal tissue from the normal surrounding tissue to get a real identification of involved and non-involved area that help the surgeon to distinguish the involved area precisely. It helps the medical staff as well as the patient to understand the seriousness of the tumor.

**Title:** Twitter Sentiment Analysis

**Author:** Komal Ladhe, Dipen Patel, Pooja Khanvilkar, Trupti Malkar

**Project Guide:** Mr. Santosh Chapaneri

**Abstracts**: Now social media is the platform to interact with people and to know the reviews of people on any particular brand or company or anything else. Twitter is one of the social media which is basically the connection link between company and customer and it is being used to build branding, understand customer demands and better communicate with them. Twitter is now a platform hosts about 350 million active users, which post around 500 million tweets per day. As too many comments, reviews are posted on twitter, it is necessary to sentiment it if you want to know the overall appreciation of the user about brand. Deep learning and machine learning helps to extract this large amount of data and work on it. Our goal is to classify tweets into positive or negative sentiment. This could be very helpful for anyone who wants to quickly gauge the overall sentiment of tweets targeting a specific product, company, organization, or other entity.

**Title:** Color Sorting using Robotic Arm

**Author:** Piyush Punmiya, Kishan Prajapati, Vishal Sanghavi, Priyam Jain

**Project Guide:** Mr. Vaqar Ansari

**Abstracts:** Sorting is one of the production line's most important tasks. A large number of researchers are interested in using Robot to increase productivity in automatic sorting systems. Typically sorting of objects is finished manually requiring human work. Identifying a particular object and placing it in the required

order is a taxing work specially in the industrial field wherein one needs to segregate massive variety of objects. Image processing is of great significance in these days as it has wide applications in many high-tech areas. The proposed project mechanism has four process steps: identify, process, select and sort. It provides a solution for color sorting with image processing implementation. Efficiency and automatization can be improved in several ways. A simple robotic arm is used to apply the color sorting to a physical system. This model evaluates how well a robotic arm can sort different objects using a predefined color identification algorithm. A demonstrator was built to perform tests for sorting speed and color identification. The robotic arm can sort a predefined shaped and sized object in 14.34 seconds. The color identification is sensitive to external factors and does not necessarily return the right RGB-value depending on lightning and brightness. The R-value often has the largest error. To further improve the color sorting robot, another color identification method could be tested, other motor types should be incorporated and a more precise sensor should be implemented

**Title:** Wireless Printing using Raspberry Pi

**Author:** Achilles Pereira, Manish Kumar G. Chaursia, Amit Singh H.K. Bisht, Minashri N. Chauhan

**Project Guide:** Ms. Savita Kulkarni

**Abstracts:** The common data printing procedure has to use desktop computer as a relay medium, first receiving the data from source and then sending it to printer using an appropriate printing method. Wired printer is made wireless with the help of Raspberry Pi, printer is connected to RPi which will receive input from the user and will print it. Arduino is used which is interfaced with keypad and LCD (Liquid Crystal Display). LCD is used to display the required data and keypad is used to take the input from the user. User can also type some text with the help of keypad and get it printed. In the digital world the popularity and use of the Universal Serial Bus (USB) storage device is very vast. But USB needs a host usually a PC to initiate and mediate communications between two USB storage devices. It is not always possible to carry such a large size device to the particular location. So the system is designed which is more compact to carry anywhere. In this project, the

file (such as .docx, .pdf, .jpg, .pptx) is selected from one USB device and transferred to another USB device. RPi is used, user can give the command with the help of LCD as to whether (s)he wants to copy, cut, paste or delete the file.

**Title:** Elliptic Curve Cryptography for Secured Text Encryption

**Author:** Aniket Gurav, Kedar Kumta, Anjali Jaiswal, Vivek Vincent

**Project Guide:** Mr. Kevin Dsouza

**Abstracts:** Elliptic Curve cryptography is a public key cryptography system where the message is encrypted using private key of sender and decryption is done using senders public key and the receiver's private key. Mapping technique converts the plain text into ASCII values and then converts this into HEXADECIMAL. The converted Hex values are grouped together to form the x and y coordinates. The converted values are encrypted in reverse order to prevent security attacks. This method reduces the overhead of common look up table shared between the sender and the receiver. Also it avoids the extra padding bits when group count is odd, which can be considered as NULL values.

**Title:** Smart Ticketing System

**Author:** Nirmayee Dighe, Darshana Gaikwad, Shreya Andhale, Akanksha Kore

**Project Guide:** Ms. Jayasudha Koti

**Abstracts:** In our project we present a smart ticketing system to support the concept of digitalization by introducing a paperless system for Public Transport System (PTS).Paper has been proven to be one of the most important products in the market which has highly benefited mankind. Trees are one of the crucial raw materials used for fabrication of paper. To produce paper pulp for one ton of paper nearly twenty-four trees have to be cut down. Global Forest Resource Assessment has stated that nearly 80,000 to 160,000 trees are chopped down globally on a daily basis which leads to deforestation which in turn contributes to climate change. Paper production industry is also liable for air as well as water pollution. In 2015 the paper industries were held responsible for twenty percent of the air pollution in

the United States of America. Waste generated by paper industries plays a significant role in water contamination; data shows that production of 1 ton of paper is accountable for pollution of nearly 20000 gallons of water. Furthermore in any Public Transport System once the passenger reaches the destination, the ticket is no longer useful and is eventually thrown away. To deal with this issue many countries opted digital means of transaction thus eradicating the unnecessary usage of paper. One such method is implementation of a smart ticketing system for public transport systems (PTS).These systems were previously implemented by linking the RFID reader system with the database directly or by using ARM7 microcontroller. However to simplify the overall system we introduced two of the most widely used microcontrollers Arduino Uno and Raspberry Pi to simply the system. Unlike ARM7 which requires its own coding Raspberry Pi uses Python which is accepted globally.

**Title:** UWB MIMO Antenna with Band-Notch Characteristics

**Author:** Pratik Suryakant Ghandade, Siddharth Suhas Parkar, Ayushya Singh Chauhan, Harshad Gajanan Mhatre

**Project Guide:** Dr. Anjali Chaudhari

**Abstracts:** The proposed work focuses on the design of a UWB MIMO antenna with band notch characteristics suitable for wireless communication. A board area of 30.75 × 29.4 mm2 comprehends two half octagonal radiating patches with the feed line stubs printed on the top layer of the FR-4 substrate while the ground plane with a reflector is printed on the bottom layer. The proposed antenna operates over 2.77 GHz to 10.28 GHz (UWB) for an impedance matching of S11 < -10 dB, while rejecting the 4.86 GHz to 6.27 GHz and 7.4 GHz to 9.35 GHz bands. Isolation of about 15 dB is acquired employing the reflector in the ground plane which provides a decoupling path for surface current. The band notch function prevents the interference between UWB and the existing narrowband systems such as WLAN, 5.15 GHz -5.85 GHz, WiMax,5.25 GHz to 5.85 GHz, Dedicated Short Range Communication, 5.625 GHz - 5.95 GHz and ITU uplink satellite communication band, 8.1 GHz - 8.4 GHz. The measured results are in close agreement with simulated ones. Additionally, the band notch UWB antenna

exhibits a stable radiation pattern and adhere to MIMO standards (Envelope Correlation Coefficient < 0.5 and Diversity Gain > 9.8dB).

**Title:** External Parametric Controller for Analyzing Plant Behaviour

**Author:** Aakash Ashok Salunke , Trilok Dattajirao Sawant ,Ashley Samkutty ,Vibhav Umesh Sawant

**Project Guide:** Dr. Gautam Shah

**Abstracts:** In today's world due to man-made pollution the climate is changing which has disturbed the Eco-system. This has caused harmful effects on plants and trees. There was no technology yet developed to analyze the effect of change in environment on the plants so a system which can analyze as well as increase the yield of the crop with respect to the change in plant signal has been proposed. The proposed design mainly aims at converting plant signals to human and machine recognizable language for understanding plant behavior with respect to various changes in the environment. The system takes the electrical signal from plants, conditions it and sends it to the logical operator. The parameters are sensed for a particular time duration by the sensors attached to the operator and these provide as the reference point for the optimal nourishment of the plant. This operator is called as the High End Logic Level Operator that conditions the plant signals and gives the output that is used to communicate with the humans in the form of sound and with the control peripherals in the form of machine language so that the plant can set the environment according to its need.

**Title:** Vehicle Black Box System for Accident Analysis and Prevention

**Author:** Reni Anna Abraham , Akruti Rayon ,Prerna Jaiprakash , Rahil Virani (Roll No. 04)

**Project Guide:** Mr. Ramjee Yadav

**Abstracts:** Automobiles and computing technologies are creating a new level of data services in vehicles. The Automobile Black Box has functions like an airplane black box. It is used to analyze the cause of vehicular accidents and prevent the loss of life and property arising from vehicle accidents. Our project proposes a

prototype model of an Automobile Black Box system that can be installed into vehicles. The system aims to achieve accident prevention by objectively tracking what occurs in vehicles with the help of Arduino and sensors. The sensor data values is stored on the SD card of Raspberry Pi and is uploaded to Thing Speak for analysis and easy storage and retrieval of data.

**Title:** Latin Character Segmentation and Recognition

**Author:** Vadayattukuzhyil Ansumaria John ,Sayli Talawadekar ,Suryakala Yadav

**Project Guide:** Ms. Pallavi Patil

**Abstracts:** Optical character recognition is abbreviated as OCR. It includes mechanical and electrical conversion of scanned images of handwritten, typewritten text into machine text. The character segmentation is done using bounding box. The word images are segmented into different characters by extracting the region of interest from the bounding box. Some of the touched characters are not correctly segmented. For recognition algorithm, we have used feature vector of pixel which generates the pixel values of the characters. The accuracy of recognition were obtained by two different classifier. It is observed that SVM gives better accuracy as compared to k-NN. The accuracy obtained by k-NN is 72.29% and by SVM is 81.09%

**Title:** Breast Cancer Detection

**Author:** Disha Shetty , Hardik Shetty ,Prajwal Shetty ,Hastha Shetty

**Project Guide:** Dr. Kevin Noronha

**Abstracts:** Breast cancer is one of the major types of cancers. Breast cancer is a cancer that develops from breast tissue. Signs of breast cancer may include a lump in the breast, a change in breast shape, dimpling of the skin, fluid coming from the nipple, a newly-inverted nipple, or a red or scaly patch of skin. Identifying tumors from breast mammography images is an important step in pre-diagnosis to aid the doctors and infer the medical condition of the patient. The goal of this project is to increase the diagnostic accuracy using Machine Learning techniques and CNN

architecture for optimum classification between normal and abnormal abnormalities.This might be able to give the patient a good idea of whether or not is there a need for medical attention and can avoid unnecessary panic/false alarms. Here we will investigate and apply existing image processing algorithms and Machine Learning techniques in order to detect tumors in digital mammograms. A system will be developed using the investigated techniques to classify malignant and benign abnormalities. Later the images are classified into normal and abnormal with the Extreme Learning Machine (ELM). Considering the size of the dataset, we have opted for data augmentation for ease in training and to have good accuracy. Some of the experimental results on mammogram images show the feasibility of the proposed approach.

**Title**: Image Colorization and Image Enhancement

**Author:** Yesha Viradia ,Ruchika Panchariya ,Viral Shingala Pranav Walavalkar

**Project Guide:** Dr. Ravindra Chaudhari

**Abstracts:** The method proposed here of image colorization presents a novel approach that uses deep learning techniques for colorizing gray scale images. Colorization of an image makes it possible for different elements to be differentiated based on the different colors. There is always a striving for an advancement made to the existing process in order to overcome the shortcomings of the previous methods. This report proposes a fully automated approach for colorization of images. In order to train a large dataset, we have opted to make use of CNN technique in order to obtain the desired result. A feed forward network in a CNN at test time is implemented. The class rebalancing technique mentioned in this report handles the problems such as de-saturated and unattractive output and produces much more vibrant and aesthetically pleasing images. Inspite of using class rebalancing for better colorized images there are a few limitations to the output. To overcome limitations of class rebalancing, GAN network is used. GAN consist of two network known as generator and critic. Generator uses decrappified image for colorization and feature learning whereas critic is used to reduce the loss and make the colorzation image look more realistic. Pre-trained GAN over a wide range of application is used by making some minor change to work as a

colorization model. The GAN technique is used here in order to preserve the details of the images and enhancing the features.

**Title:** Smart Shopping Trolley System

**Author:** Harsh Patil ,Devesh Pardiwala ,Vipin Pandey ,Parth Parmar

**Project Guide:** Ms. Pallavi Patil

**Abstracts:** Today's world thrives by making human life easier than it already is with every passing moment. Creating a smart cart that takes care of comfort while shopping is another step taken in the same direction. Product detail acquisition in large grocery stores with wide range of products is a tedious and time consuming process. The smart shopping cart explores the mini computers and automatic identification technology. Instant billing without queuing and keeping track of the expenditure is the main but not the sole motive of this intelligent cart. This cart uses modern and cheap technology like RFID and mini computers to make it intelligent and time saving. It helps the consumers to utilise the time saved in other fruitful activities instead of wasting their time by standing in long queues at the checkout counter.

**Title:** Image forgery detection and localisation using PCA

**Author:** Janvi Nandu ,Pratiksha Patil ,Sanika Patne ,Meghna Pembharthi

**Project Guide:** Dr. Ravindra Chaudhari

**Abstracts:** Forgery of an image can be executed easily by using advanced image editing applications, but the recognition of such forged images is difficult for human eyes. Image splicing is one of the popular way of image tampering, in which originality of the image is significantly altered with respect to another. In this project, the goal is to recognize whether a given image is forged or not, as well as to localize the forged part of the image. For localization of the forged region principal component analysis (PCA) based on noise level estimation is used. In the proposed method, first image will be segmented into non-overlapping blocks and then the noise level of each block will be estimated using PCA. Later k-means

clustering will be used to form clusters according to noise levels. Based on the difference between noise levels of the forged and original image clusters are formed. Then coarse-fine strategy will be implemented for precise localization of spliced region. The proposed method has fewer assumptions and can be applied in more forensic scenarios. The experimental results achieves improved performance, especially when the noise difference between the spliced region and the original region is small, unlike other forgery detection methods.

**Title:** Neural Image Caption Generator

**Author:** Harshit Parikh ,Bhautik Parmar ,Harsh Sawant ,Rahul Shah

**Project Guide:** Dr. Deepak Jayaswal

**Abstracts:** The fundamental challenge for computers is to perceive data from images and form sentence-based descriptions from it. Computer Vision and Natural Language Processing are widely used for making it possible. It requires computer vision to understand the content of the image. A language model from the field of natural language processing was used to output words in the right order. Convolutional Neural network (CNN) is a robust image feature extraction algorithm. Gated Recurrent Unit (GRU) is typically used for effective sentence generation. A combination of these two models will generate appropriate captions. Experimentation with various datasets and comparison of the results with existing work was done. Different evaluation metrics were used for benchmarking the results. Our model results in a BLEU-4 score on the MS-COCO 2017 dataset as 53.5.

**Title:** Skin Lesion Classification using Deep Learning

**Author:** Abhishek C. Salian ,Gulam Nasir Shaikh ,Shalaka Vaze ,Pragya Singh

**Project Guide:** Mr. Santosh Chapaneri

**Abstracts:** Skin cancer is one of the major types of cancers that can arise from various dermatological disorders and can be classified into various types according to texture, structure, color and other morphological features. Identifying the lesions

from skin images can be an important step in pre-diagnosis to aid the doctors and infer the medical condition of the patient. Recent work has focused on classifying only melanoma from a given set of skin lesion images. However, some types of skin lesions (Acctinic Keratosis and basal cell carcinoma) can become malignant over a period of time. So by detecting these classes we can say we are cutting down the risk of malignancy and doing the task of early detection. We are able to classify different types of skin lesions (basal cell carcinoma, benign keratosis, dermatofibroma, vascular lesions, melanoma, and melanocytic nevi) with an accuracy of above 80% with Mobile Net, VGG-16 and our custom model which we have designed. With the help of thismodels, which will be embedded in skin lesion analyzer machines. This can give the patients as well as doctors a good idea of whether or not there is a need for medical attention and can avoid unnecessary panic/false alarms. We are using different deep learning architectures to classify skin lesions with good accuracy relative to existing work.

**Title:** Cover Song Identification using CNN

**Author:** Vignesh Pillay ,Zainool Abdin Salmani ,Priya Suvarna ,Snigdha Tarman

**Project Guide:** Dr. Deepak Jayaswal

**Abstracts:** Audio cover song identification is one of the main tasks in Music Information Retrieval and has many practical applications such as copyright infringement detection or studies regarding musical influence patterns. Audio cover song identification systems rely on the concept of musical similarity. To compute that similarity, it is necessary to understand the underlying musical facets such as timbre, rhythm and instrumentation, that characterize a song but, since that kind of information is not easy to identify,interpret and use, it is not a straightforward process. This thesis begins by giving information about the possible musical facets and how they influence the process of identifying a cover. The most common approaches to take advantage of those musical facets are addressed as well as how the similarity values between a pair of songs can be computed. There is also an explanation of how the system quality can be assessed. A system was chosen to serve as baseline and, based on recent work in the field,

some experiments were made in order to try achieving an improvement in the results.

**Title:** IoT Based Smart Mirror using Raspberry Pi

**Author:** Piyush Yanti , Rahul Yadav ,Yukta Shree ,Ajay Pereira

**Project Guide:** Ms.Quanitah Shaikh

**Abstracts:** It describes the design, construction and working of 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 is one of applications of Raspberry Pi. A Resistive screen embedded in mirror looks very futuristic.The Raspberry Pi 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 works as user interface and control home appliances. The Raspberry Pi is connected to monitor via HDMI as well as its also has inbuilt Wi-Fi and Bluetooth interfaces so we can just touch the screen to play audios and videos.

**Title:** Dredger

**Author:** Yash Singh ,Jeel Vala ,Hrishikesh Shenoy ,Neil Vakil

**Project Guide:** Ms. Snehal Lopes

**Abstracts:** This research focuses on the design and manufacture of the ”DREDGER”river waste cleaning system. The research was done to look at the current condition of our national rivers that are polluted with sewage crore liters and filled with toxins, hazardous materials, debris etc. Water gets polluted due to many reasons such as waste from industry, garbage waste, sewage waste etc. water from lakes and ponds are cleaned by traditional methods. We have to incorporate technology such that cleaning work is done efficiently and effectively. DREDGER is our prototype machine which involves removing the waste debris from water surface and safely dispose it.Our machine will track where the waste or debris is,

lift the waste surface debris (of desired weight) from the water bodies, track the weight of the debris and the collection time and store the result in cloud so that we can know how the coordination is going on-this will ultimately result in reduction of water pollution and lastly the aquatic animal's death due to respiratory problems will be reduced. All these results will be done by the core i.e. Arduino Uno. In this project we have store the energy in the battery and used this energy for river cleaning with the help of a motor and conveyor arrangement.

**Title:** Self Parking Car with Object Detection Camera

**Author:** Srajan Puthran ,Khushang Rawool ,Saurabh Shukla ,Harish Tarale

**Project Guide:** Mr. Swapnil Chilap

**Abstracts:** Parallel parking is often the most feared part of the driver's test, and it's something almost everyone has to do at some point. With the increase in population, the parking space is swarming with cars, which leads to collision accidents, causing minor dents and scratches in vehicles. Due to this people often have to wait in long queues to get their cars parked. To solve this issue, we present a simple yet effective method for implementing low cost self-parking car. It will scan for available parking space and park the car by itself without having the driver to manoeuvre the car at all. This makes it easier for people to find parking spaces, and allows the same number of cars to take up fewer spaces. Self-parking cars can also help to solve some of the parking and traffic problems in dense urban areas. Sometimes parking a car in a space is restricted by the driver's skill at parallel parking. A self-parking car can fit into smaller spaces than most drivers can manage on their own. Sensors play a very important part in this project as they provide useful information about the surroundings. The main goal of this project is to design and implement a Self Parking Car, without manually driving it into the parking space along with a Object Detection Camera which will detect an intruder trying to steal the car and send the image via e-mail.

**Title:** Iris and Fingerprint Biometric Controlled SmartBanking System

**Author:** Riya R.Suvarna ,Jinal Patel ,Madhushree Sahu ,Apurva B. Patil

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**Project Guide:** Ms.Quanitah Shaikh

**Abstracts:** The project is based on the security of banking system with the help of biometrics.Using biometrics as the mode of verification of the valid user, the smart banking system has been designed. This Smart Banking system provides the safest way of using the ATM system for various purposes where verification of the user is done with the help of Biometrics. Iris and Fingerprint Biometrics has been used because they are considered the most secure amongst of all the other biometrics. To use the ATM system, the user needs to scan its finger on the fingerprint module. The system uses the Minutiae algorithm for the fingerprint verification. If the user fingerprint has been found in the database of the System, the system will ask for the Iris verification. The system uses Daughman Algorithm for the Iris verification, if the Iris of the user is found in the database; the System will allow the user for using the ATM system for various banking purposes.

**Title:** Implementation of DMVPN over MPLS BGP environment

**Author:** Aditya Patel ,Vinita Rane

**Project Guide:** Mr. Ramjee Yadav

**Abstracts:** Dynamic Multipoint IPsec VPNs (DMVPN) is a software optimization technique proposed firstly by the Cisco Company to overcome the limitations of the classical Virtual Private Network (VPN) implementations. Conventional VPNs are employed to provide secure connectivity between the multiple branches of companies over the internet. The configurational overhead and lack of scalability are the major limitations of conventional VPNs. These two major limitations of conventional VPN is overcomed by Dynamic Multipoint VPN (DMVPN) service. The DMVPN service creates dynamic IPsec tunnels to provide secure communication between branches. We discuss and simulate a DMVPN spoke to spoke tunnel over service provider's MPLS BGP backbone network. The DMVPN service establishes a secure VPN connection by using IPsec over the MPLS BGP enviroment. The proposed service is implemented on GNS3 simulator.

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**Title:** Car Monitoring System

**Author:** Jash Shah , Prakash Suthar ,Pradeep Vishwakarma ,Chandan Yadav (Roll No.37)

**Project Guide:** Mr.Alister D'Souza

**Abstracts:** The purpose of this project is to develop vehicle collision prevention by method of alcohol detector in an effort to reduce traffic accident cases caused by driving under the influence of alcohol. This system is aimed at making vehicle driving safer than before and is implemented using ARM7. We have derived the driver's condition in real time environment and we propose the detection of alcohol using alcohol detector connected to ARM such that when the level of alcohol crosses a permissible limit. The System generates an alarm once the level of alcohol measured above that permissible limit .At the same time engine locking is done with the help of deactivating Relay and DC Motor and then the vehicle will not start. The whole system which is made as compact as possible, senses the alcohol molecules present in specific range and if found ,fails the attempt of the driver to start the engine. In this system we are using Vibration Sensor to detect the Accident and Considering the actuality of the real life system where the driver may not be able to drive, the system is interfaced with the widely used GSM technology to establish connection with GPS to send message of exact location of the accident is send to his/her relevant person.

**Title:** Soldier Health and Position Tracking System Using Internet of Things (IoT)

**Author:** Shantanu Pant ,Kshitij Koli ,Anshul Sharma Mohit Yadnik

**Project Guide:** Dr. Gautam Shah

**Abstracts**: In the last few decades soldier health and position tracking on the battlefield was done using technologies such as cable based system, radio frequency transceiver, walkie-talkie and global system for mobile communication technologies. However many of these technologies suffered from one or more reasons such as high installation cost, loss of signal, high noise and bulky nature. Hence the need of the hour is a system which is not bulk and is highly reliable. This project aims to achieve this by implementing a system that consists of sensors

that monitor the vitals and track the location of the soldier. This information is then sent out to the server via bluetooth and wireless transmission. The information acquired by the sensor is gathered using Arduino Uno which the soldier will be wearing. Using bluetooth the information will be sent by the Arduino Uno to Raspberry Pi Raspberry Pi will be worn by the Squad Leader or the Medic. Raspberry Piwill send the data to a server via wireless tranmission.

**Title:** Smart Buoy

**Author:** Nilima Ohol , Alaric Miranda ,Kushal Dedhia .Sahil Pophare

**Project Guide:** Mr. Sandip Dhende

**Abstracts:** Smart Rescue Buoy is used as a lifesaving buoy designed to be thrown to a person drowning in the water to provide buoyancy. It is a buoy that can be delivered to victims of water mishaps using remote control. It has a connecting line that allows the casualty to be pulled towards the rescuer. This life saving buoy is controlled using bluetooth. The victim needs to hold on to the float and the controller will bring it back safely. The buoy is ring or horseshoe shaped which is a battery powered system. Once the buoy is thrown in the water it has power to drag the victim back to safety. Buo can be used when the victim is far from manual approach or high tide or any other water related calamity. The design of the float makes it feasible to get to the target and save the victim even in turbulence. The features of this bouy helps to facilitate the lifesaving process.

**Title:** Wideband Absorptive Bandstop Filter

**Author:** Abhishek Vijayan ,Rajat Pandey ,Aashil Gandhi ,Rajashree Patil

**Project Guide:** Mr. Sandip Dhende

**Abstracts:** In the following project, ABSF is designed in order to absorb the leakage power that is present between local-oscillator and RF leakage. The power that is leaked is mainly absorbed at port 1. The absorption takes place due to the introduction of lossy resonator to a conventional narrow band and coupled-line band stop filter. We design ABSF along with its various prototype having certain

specifications. Microstrip ABSF has a center frequency of 2GHz, maximal stop band rejection is 60dB, input return loss 10dB, having larger than 90

# INFT

# ABSTRACTS

**Title:** Smart Navigation System for the Blind

**Author:** DEEPAK KUMAR YADAV, SOM SANKAR MOOKHERJI, SIDDHANT PATIL

**Project Guide:** Dr. Joanne Gomes

**Abstracts:** Visually impaired individuals have been gradually claiming a significant stake in the population demographics. To tame this ever alarming issue an intelligent solution incorporating holistic measures is essential. Thus far, to this date, there does not exist an ubiquitous solution which is holistic, autonomous and intelligent in nature to aid the cause of the said fraternity of people. This autonomous device aims to provide a solution by engineering a smart navigation system that will relentlessly scan the environment, detect and classify neighboring objects using a 19 layered convolutional neural network, calculate distances of the said objects from the user and provide adaptive solutions in real time to maneuver the user to safety by providing auditory input in a simplistic manner.

**Title:** Decentralized Cloud Storage Using BlockChain

**Author:** VISHWAJEET MISHRA , MEET SHAH ,MOHAMMEDHASAN SHAIKH

**Project Guide:** Ms. Grinal Tuscano

**Abstracts:** Blockchain is a system of decentralized digital lists, or ledgers, containing records referred to as ”blocks”. Blocks hold information in a secure, transparent, and permanent way that everyone can access. It originally came about to record transactions done using the first cryptocurrency, Bitcoin. Decentralization

allows for complete transparency in all shared information. Furthermore, the network hosting of the information is impossible to tamper with. Rather than passing information back and forth, swapping ownership each time, everyone essentially owns it, and can access it, simultaneously.

**Title:** TRADE FINANCE USING BLOCKCHAIN

**Author:** DEVI DESAI, KARNIKA PADIA, VENNIS SHAH

**Project Guide:** Ms. Purnima Kubde

**Abstracts:** Trade-financing refers to the financing of the exchange of commodities, finished goods and raw materials. It is a centuries-old industry valued at more than $10 trillion USD. The trade-finance industry hasn't seen any significant change over the past decade despite the explosive global trade growth. There are many parties involved in a typical trade transaction. Banks, shippers, importers, exporters, regulatory bodies and the customs officers. These parties each act as a key verification point on the supply chain. Each of them plays a vital role in completing the transaction and any fault at any of these verification points would cause a delay/complete voiding of a transaction. Each party faces different pain points in the trade financing process. Trade financing today is still a very paper-based business. The absence of electronic and digital processing means that typically a trade financing transaction would rely on a long paper trail and hence a prolonged process of document exchanges.

**Title:** PERFORMANCE EVALUATION OF DATA MINING ALGORITHM

**Author:** Priti Nandankar , Anjali Singh ,Bina Trivedi

**Project Guide:** Dr. Nazneen Ansari

**Abstracts**: Data mining, now a day, is the most important field of computer science and it deals with the process of extracting information from a data set and transforming it into an understandable structure for further use. Data mining is also called Knowledge discovery in databases. It is used to define knowledge from data collected by the system. Data mining consists of various steps ranging from

understanding the project and identifying multiple techniques for implementing the project. These techniques help in mapping results which can be used for problem solving. Data mining consists many techniques i.e. Tracking Patterns, Classification, Regression, Association, Clustering etc. Tracking Patterns is One of the most basic techniques in data mining is learning to recognize patterns in data sets. Classification is supervised learning technique, it identifies the model that describes and distinguishes data classes and concepts. Regression algorithms are used to predict numeric values i.e. continuous values. Regression is different from classification as it is used to predict continuous values while classification is used to predict discrete values. Clustering is an unsupervised learning technique. It is the process of making a group of abstract objects into classes of similar objects.

**Title:** ADVANCED HEALTHCARE SYSTEM USING BLOCKCHAIN

**Author:** Kaushal Prasad , Rajesh Prasad ,Nithin Vincent

**Project Guide:** Dr. Minal Lopes

**Abstracts:** Sharing medical data with more stakeholders for various purposes without sacrificing data privacy and integrity has been a problem faced by the healthcare record system throughout the world. Due to an advanced network of intermediaries, several issues arise in the healthcare system and therefore they lack traceability of transactions. Because of its potential, blockchain has gathered important interest within the healthcare business. Blockchain is a distributed peer to peer system where each node in the network stores a copy of data, thus making it immutable. In the proposed system, a user's file is encrypted and stored across multiple peers in the network using the IPFS protocol. IPFS creates hash value which hash value indicates the path of the file and is stored in the blockchain. This paper focuses on the use of the decentralized nature of the blockchain in healthcare so that the patients and hospital authorities can use or access the health records in a secure manner.

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**Title:** YUM-ITOO'S-Smart Restaurant Management

**Author:** Omkar Surve ,Mihir Saldanha ,Hardik Patel

**Project Guide:** Ms.Sonali Vaidya

**Abstracts:** In most of the restaurants the customers have an interaction with the waiters to place their orders and the waiters writes down the order somewhere or just memorizes it till the kitchen. But in busy hours of the restaurant this coordination is a challenge which results in dissatisfaction to the customer. To reduce this inconvenience of the customer our application provides an on-screen menu which is directly connected to the kitchen. Our application also allows customers to customize their orders that to using their own devices which helps the restaurant to be a self- service restaurant. No requirement or disturbance of waiters is there in heir personal space, every service that a waiter provides is provided by our application. Table booking is also done using the user's device with the help of QR scanning method. Our application also supports a social cause which is a Donation service in which the customers can donate food from a zero-profit menu. Customer feedback is a essential entity which helps the restaurant to make improvements and the other customers to get more realistic information about various things. The feedbacks are analyzed using sentiment analysis.

**Title:** CREDIT RISK ASSESSMENT AND FRAUD DETECTION

**Author:** Jovita Hembram ,Bhoomi Patel ,Harshal Patil

**Project Guide:** Ms. Shree Jaswal

**Abstracts:** Estimation or assessment of default on a debt is a crucial process that should be carried out by banks to help them to assess if a loan applicant can be a defaulter at a later phase so that they process the application and decide whether to approve the loan or not. The conclusion derived from such assessments helps banks and other financial institutions to lessen their losses and eventually increase the number of credits. Hence, it becomes vital to construct a model that will take into account the different aspects of an applicant and derive a result regarding the concerned applicant. All available means to loan the money from their illicit activities are used for criminal activities in today's technology-based realm. The

increasing number of bad debts resulting from commercial banks a loans reflects the growing problem of distraught banks within the economic system .Frequency of bank frauds has certainly increased. This calls for some serious measures. We have used data mining algorithms to predict the likely defaulters from a dataset that contains information about home loan applications, thereby helping the banks for making better decisions in the future. Also we have applied data mining techniques to detect a fraudulent applicant approaching the banks or other institutions.

**Title:** SMS-Based Offline Mobile Device Security System

**Author:** Royston Furtado, Atharva More, Jay Bhatt

**Project Guide:** Ms. Vandana Patil

**Abstracts:** There are various systems which provide Online Mobile Device Security which require internet to perform their required functions. Our proposed system SMS Based Offline Mobile Device Security System provides mobile device users with a wide range of security features that help protect the mobile device from theft and also acts as an assistant that helps the users in any problems they may face in their day-to-day lives. The project aims to develop a mobile security system that will allow the user to manipulate his mobile device from any other device through SMS which can be used to get contact information from the user's mobile device remotely, help find the phone by maximizing the volume and playing a tone , trace the current location of the mobile device, get the IMEI No of the device, lock the device, send a message that will be converted to speech and played on the user's mobile device ,call forwarding, message forwarding and various other features.

**Title:** Smart Traffic Signal with Motorbike Safety

**Author:** Pawan Karkal ,Roneel Govekar ,Tanvee Jamsandekar

**Project Guide:** Ms. Grinal Tuscano

**Abstracts**: Current word population is over saturated. It is affecting financial and ecological aspect of every developing country. If we keenly observe the daily life

of citizens, most of them are facing issue with traditional traffic management method. Traffic tends to grow due to predefined traffic signal and emergency vehicles end up reaching their destination late due to traffic jam. Thus, there is a need to handle traffic jams based on current vehicular traffic density and prioritize passage of emergency vehicles. In the proposed Smart Traffic Signal, we have used new technology to manage vehicular traffic jam in order to reduce traffic congestion. We have used Ultrasonic sensor to measure vehicular traffic density and Radio Frequency Identification tag and reader to detect the presence of an emergency vehicle. Their inputs are provided to the microcontroller. Green signal time allocation is generated for every lane as per their respective traffic density. If an emergency vehicle is present near the traffic signal junction, then green signal is set on for the respective lane and then regular traffic management is executed. If no emergency vehicle is present near traffic signal junction, then regular traffic management is executed. In case of high traffic, RTO agent is alerted through android application. Number of deaths or severity of damage in case of motorbike accident is more in absence of helmet. We cannot ensure motorbike rider's safety just by charging them penalty fees. We require a motorbike inbuilt mechanism to make sure that the motorbike rider is not allowed to start his or her engine unless he or she has worn and buckled the helmet. In the proposed Motorbike Safety, we have used temperature sensor to detect rider's body temperature and push button as buckle. First, we check if user has inserted motorbike key. If the condition evaluates to be true then second condition is checked. If the detected body temperature of the rider lies in the pre-defined body temperature range, then final condition is checked. If the buckle status evaluates to be true, then the mechanism allows to start the engine. If any condition evaluates to be false, mechanism does not allow to start the engine. Even after the engine has started, previous conditions are checked after interval of time. If all conditions evaluate to be true then the engine continues to be on, if any condition evaluates to be false, the engine is commanded to stop.

**Title:** DEMAND FORECASTING IN RETAIL INDUSTRY

**Author:** Shweta Kalekar ,Mitali Deshpande ,Anish Palkar

**Project Guide**: Ms. Shree Jaswal

**Abstracts:** Demand forecasting in retail is the act of using data and insights to predict how much of a specific product or service customers will want to purchase during a defined time period. This method of predictive analytics helps retailers understand how much stock to have on hand at a given time. Almost every retail business is always looking for ways to cut costs. It is one of the easiest ways to maximize our profits. When we implement a proper demand forecasting process to your business, we are cutting costs in a few ways. Firstly, we are reducing the amount of capital we have tied up in unneeded inventory. And the less stock on hand we have, the lower our holding costs. Secondly, we are making sure you capitalize on every sale opportunity by not disappointing customers with out of stocks. By incorporating data mining techniques retailers can improve their inventory logistics, reduce handling cost in inventory. Additionaly, trending products and customer behavior can be identified and decrease inventory movement. The retail business in India is expanding in leaps and bounds. With increasing competition, each retailer needs to correctly cope up with the impending demand. The retail firms need to take into account various factors including the lead time and the seasonality of goods.

**Title:** DIGITAL MARKETING OVER ULTRASONIC SIGNAL

**Author:** Saurabh Raut ,Ashutosh Vaity ,Vinit Rai

**Project Guide:** Dr. Prachi Raut

**Abstracts:** Digital marketing is dominating the global marketing scenario and it will continue to do so in the future. The project aims to present a unique system – DMoUS for digital marketing using ultra sound communication. DMoUS helps small business owners to send push notifications or “tokens” to mobile devices present in the vicinity. Using these tokens, the potential customers are able to access product catalogues from offline servers. The system doesn’t require internet

connection.Hence, this system can be used in rural areas where connectivity is an issue. Also, it reduces noise pollution to a certain extent. The system enables customers to view the products available in the shop without entering the shop. This functional will come handy during rush hours. The DMoUS is developed using Android studio and CUE software modem for ultra-sound communication and tested extensively in indoor as well as outdoor environment. The DMoUS was implemented and tested extensively at various indoor/outdoor locations. It was observed that the average range obtained at the indoor location is 6 meters and at the outdoor locations it was 5 meters. DMoUS has also exhibited 70 percent improvement on results presented in the project.

**Title:** PREDICTING WILDFIRE USING NEURAL NETWORK

**Author:** TRUPTI BHUTA ,SRISHTI SHIRGAVI ,MANALI VICHARE

**Project Guide:** Ms. Amrita Mathur

**Abstracts:** Wildfire could be a fire in a part of flammable vegetation occurring in rural areas. Forest fires are chiefly caused because of lighting and sun, or by ignition of dry fuel like wood or dry leaves. Destruction caused because of wildfires are various and wide-ranging. They will have vital impacts on the economy, surroundings, heritage and social cloth of rural areas. For this purpose, wildfire prediction before an unimaginable destruction is caused has become progressively vital. Forest Fire Prediction, employing Artificial Neural Networks to forge a benevolent system that could to an astonishing extent, serve a noble cause in an exemplary fashion. Data used for prediction will include the vegetation and environmental parameters. The data has been taken from UCI repository. The model will learn using this data and predict the possibility of a probable fire if similar environmental conditions occur in future**.**

**Title:** TalkAR: Language Learning in Augmented Reality

**Author:** Annette Menon, Milly Francis, Rajesh Nair

**Project Guide:** Ms. Sonali Vaidya

**Abstracts:** In recent times, learning a foreign language proves to be useful in terms of career growth opportunities. In addition to this, with the advancement of mobile technology, learning using a mobile application opens the path to better results and a better learning experience as compared to the traditional classroom environment. In this paper, we present a mobile application which helps language-independent people to learn the basics of German language in an Augmented Reality (AR) environment. Based on the several studies that were conducted, it was found that Germany is one of the budding countries that requires learning the basics of this language. With this in mind, this application was implemented to initiate interactive learning with the help of a virtual tutor in AR.

**Title:** INTRUSION DETECTION SYSTEM USING NEURAL NETWORK

**Author:** Aneesha D'souza ,Lynelle Fernandes ,Voleta Noronha

**Project Guide:** Ms. Alvina Alphonso

**Abstracts:** The Intrusion Detection System (IDS) can detect any intrusion and alert the administrator. Two types of attacks are possible: Signature based attack and Profile based attack (Anomaly).Signature based attack detects all the predefined attacks. The signature-based files are mapped with the attacks and if matched it will return the attack type. However, it is notable to check anomaly-based intrusion. Due to the available signature-based file the false positive rate is low. Profile based attacks also termed as anomaly-based attacks are those attacks which doesn't use any already predefined path. The IDS which is employed to detect such kind of attack should be flexible enough to handle such anonymous scenario. For the project, CICIDS-2017 dataset is used. The dataset consists of four different types of attacks such as Denial of Service (DoS), Port scan, Web attacks and Bot net attack. First, we select and narrow down the features by omitting values that are redundant or have null values after which they are normalized within a range. Various algorithms are used to select the optimum feature selection technique and then classification models are used to note the performance metrics. A Convolutional Neural Network is built to train and test the model statistics. Accuracy, F1 score, Recall and Precision are used to measure the models and the optimum resultant model is selected. Such models can be used to deploy on

systems and can use real time traffic data to detect any anomalous behaviour in the network.

**Title:** SMART DEVICE INTEGRATED WITH HOME AUTOMATION

**Author:** Malcolm Saldanha ,Omeya Sawant ,Daniel Rozario

**Project Guide:** Ms. Purnima Kubde

**Abstracts:** The project name “Smart devices integrated with home automation” itself says it all. The activities such as 1. Automatic locking the door and unlocking the door: In this activity the wrist band is brought near the door and the door automatically unlocks as soon the wrist band is far away from the door’s sensor the door will automatically get locked and the user can freely move and sleep without worrying about whether the door is locked or unlocked. 2. Heart rate sensor helps with sending the users heart rate to the firebase (the online database) and the value of a particular user’s heart rate is stored in the firebase and according to those values the environment will be controlled and the user can freely move and control various house appliances such as music system, AC temperature and much more. 3. Using the Bluetooth module beacon the appliances will know that the user is nearby and the temperature of the body is either low/high and then the appliance will automatically adjust itself in such a way such that its suitable for the user. Not only the temperature of the AC or the fan the user can also gain access to TV or Music System with the help of the Smart band.

**Title:** DATA STORAGE SECURITY USING CLOUD COMPUTING

**Author:** Sakshi Ghosalkar ,Shinika Gomes ,Shreya Patil

**Project Guide:** Ms. Alvina Alphonso

**Abstracts:** ECC generates keys through the properties of the elliptic curve equation instead of the traditional method of generation as the product of very large prime numbers. An elliptic curve is not an ellipse (oval shape), but is represented as a looping line intersecting two axes (lines on a graph used to indicate the position of a point). ECC is based on properties of a particular type of

equation created from the mathematical group (a set of values for which operations can be performed on any two members of the group to produce a third member) derived from points where the line intersects the axes. Multiplying a point on the curve by a number will produce another point on the curve, but it is very difficult to find what number was used, even if you know the original point and the result. Equations based on elliptic curves have a characteristic that is very valuable for cryptography.

**Title:** POST CRASH HELP

**Author:** Pratha Kulkarni, Neel Desai, Lijin Joy

**Project Guide:** Dr. Prachi Raut

**Abstracts:** Road accidents are often fatal and result into major losses to families and nations. The ideal response situation in case of accidents is arrival of immediate help. However, in many cases timely help cannot be guaranteed owing to remote location of accidents where either help cannot reach or the information of the accident the accident occurs in remote areas where no bystander or passing car is available to notify the police. Furthermore, as many accidents occur on highways and expressways, the vehicles moving at faster speed usually ignore their obligation to stop and help or at least notify highway authority. Precious lives can be saved if medical help is made available to the victims at the earliest. Several systems were proposed which provide automated accident detection and notification facility. However, majority of these systems depend on user's smartphones and applications. This project presents a Post-Crash Assistance system which uses a vehicle's in-built hardware hence eliminating dependency on the smartphone and thus reducing the time required to fetch medical help for the victims of an accident. The system uses accelerometer, force sensor and the Integral Window algorithm for crash detection and classification. The communication between the main server and the car, is done using MQTT protocol and using Cloud MQTT broker.SIM900A which is a GSM module, along with a SIM card is installed in the car, which allows the car to communicate with the server. A GPRS module SKG-13 is used for finding the location and velocity of the car. The system is able to differentiate between various crash intensities and is able to respond accordingly. For a low intensity crash the system will ask the user, if the user is alright. If the user says yes then the system will provide information of the nearest mechanic on either the cars, infotainment screen or the users mobile

phone. However, if the user chooses not alright, or the user does not respond in a particular time (30s) then it is considered that the user is not alright and the car's location is sent to the nearest hospital. The system has been extensively tested under full network as well as partial network connectivity. Currently, the system demonstrates 98.33% accuracy on an average. Also, average response time observed is 16.24s. The system can be scaled up easily in the future. The hardware can be optimized and made compact so that it can be easily stored in the vehicle and can be customized for two wheelers as well. VANET concepts can be used to generate traffic alerts for the traffic that is caused by accidents.

**Title:** ALCOHOL DETECTION SYSTEM TO REDUCE DRUNKEN DRIVING

**Author:** Arjun Kapadia, Melanie Anthony, Ruchi Varia

**Project Guide:** Ms. Mrinmoyee Mukherjee

**Abstracts:** Due to the rapid increase of vehicles on roads, the probability of road accidents is rising steeply. Drunk driving is considered to be a major cause of road accidents throughout the world. The main aim of this project is to develop a system that would detect the amount of alcohol that is consumed by the driver of the vehicle. The proposed system aims at preventing the user from driving when drunk and thereby intends to reduce the number of accidents occurring due to drunk driving. The proposed model is developed using Arduino Uno and alcohol detection sensor (MQ-3) as its major components. As a safety measure, when the level of alcohol crosses a permissible limit, the vehicle ignition system (DC Motor) will be turned off and the concerned authority will be alerted using the GSM module.

**Title:** 3D DISASTER SITE RECONSTRUCTION

**Author:** Rushikesh Jalvi ,Sanket Dalvi ,Harrshada Bhagath

**Project Guide:** Ms. Purnima Kubde

**Abstracts:** 3D Reconstruction of a scene, an evolving technique in the field of computer vision, finds applications in various fields. One such application is in the field of disaster management. Natural disasters typically damage infrastructure, cause injury and massive loss of life. An immediate life-saving response is essential to rescue those who are trapped and stabilize or evacuate survivors. In these critical situations, a 3D model of the disaster site will help in analyzing and

planning efficient rescue operations. The 3D model helps in providing in depth analysis of the damage and can be studied to improve the structural soundness of the site. It helps protect the lives of rescuers from any unwanted dangers which they might head into because of no prior knowledge of the scene. Trapped victims can be located and a direct path can be mapped reducing time to save the life of the victim. We propose a model which captures 2D images of a disaster site and renders a 3D model for the same. The images will be captured using the MI A1 phone camera. Open SFM library is used to generate a 3D model from the captured images. This process of rendering 3D models from images/videos is called Structure from Motion. It works by matching a few thousand points between images, and then figuring out the 3D positions of those points as well as the positions of the cameras simultaneously. For Obtaining a 3d model , various operations are executed in a sequential manner and the generated 3D point cloud of the scene is visualized using ClouCompare.

**Title:** Decentralized E-voting based on Blockchain technology.

**Author:** Shifa Khan , Manthan Mangukiya , Ravid Prince

**Project Guide:** Ms. Vandana Patil

**Abstracts:** Voting is a method for a group, such as a meeting or an electorate, in order to make a collective decision or express an opinion, usually following discussions, debates or election campaigns. Democracies elect holders of high office by voting. Residents of a place represented by an elected official are called a constituents ˆ a, and those constituents who cast a ballot for their chosen candidate are called a voters ˆ a. The conventional method was that the voters had to come to polling booth and show their voting card to the voting committee and the election supervisors to verify whether their choice is valid or not, which takes days in vote counting process. Also the most common problem in such type of elections is data manipulation, security and transparency. Conventional system has a problem of transparency and security. In conventional system, physical representation of person is required. Throughput is less because of which voting may take a lot of time. The traditional voting system also carries the costs of human resources, ballot deployment, and security measures. Also frauds associated with the current voting system are forcing or intimidating voters a particularly the elderly, disabled, illiterate, and those for whom English is a second language vote for particular candidates while supposedly providing them with assistance. Illegal registration and voting by individuals who are not Indian citizens, are convicted felons, or are otherwise not eligible to vote. Changing the actual count either in the precinct or at

the central location where the vote are count Forging the signatures of registered voters on the ballot petitions that must be filed with election officials in some states for a candidate or issue to be listed on the official ballot.

**Title:** An IoT-based Vending Machine using Blockchain for Enhanced Security**.**

**Author:** Sheldon Henriques , Gautam Kotian ,Shaun Lewis

**Project Guide:** Ms. Vandana Patil

**Abstracts:** Various vending machines have been invented for distributing a wide variety of vended goods.These machines are used on a massive scale in countries like Japan, USA, etc. To have these machines checked, the associated company needs to conduct field trips to these vending machine locations, which again turns out to be expensive. However, this can be avoided by the system detecting a problem and then notifying the maintenance team for the same. The implementation of IoT has made it easy for standalone devices which had to be manually operated, but now work on their own by using sensors which give a seamless network of tools which can communicate with each other to ease the life of the end-user. The need exists, however, for an automated vending machine that will be secure for all processes and will help in disintermediation. The proposed system would use crypto currency instead of hard cash, which further enables enhanced security and assurance that the data is legitimate. Current vending machines are facing the problem of slug currency. A slug is a counterfeit coin that is used to make illegal purchases from a vending machine. Other similar issues are coin rolling scams, counterfeit money. Most of the times the tools are out of stock. Vending machines require maintenance checks from skilled technicians. The maintenance field trips to these vending machine increases cost.

**Title:** RecyClick: Recycle at a Click

**Author:** Kaustubh Acharekar ,Pranav Khedekar ,Joanna Dsouza

**Project Guide:** Ms. Sonali Vaidya

**Abstracts:** Waste is generated by every single individual existing on Earth. Certain categories of wastes like E-waste, Plastic waste and Metal waste can pose a serious threat to the ecosystem if not recycled properly using appropriate recycling methods. Nowadays, people constantly stay up to date in terms of technology by changing their existing devices with new ones. The old devices turn out to be

obsolete. The objective of our project is to develop an application to curb the waste menace generated by identifying E-Waste, Metal waste and Plastic waste from user input with the help of machine learning techniques and handle it efficiently by encouraging users to recycle the waste to gain credit points. People usually turn a blind eye to recycling as they find it elusive to personally go to a certain place to deposit the recyclable items.

**Title:** SMART AIRPORT SYSTEM USING BEACON TECHNOLOGY

**Author:** Avinash Castelino , Kirsten Castelino ,Viraj Pai

**Project Guide:** Ms. Priyanca Gonsalves

**Abstracts:** Over the past years due to increase of air traffic changes in the flight timings has become more and more mundane routine for the travelers. Due to these erratic changes in flight timing as well as changes in gate numbers, travelling through an airport has become more of an exhausting job. To overcome this problem, we propose a solution through amalgamating beacon technology inside an airport system. In recent years, innovation in communication technology and the popularity of smart phones make the work easier than ever. Main purpose of innovation in technology has been in simplifying life on earth or making every day's work easier and faster. One regular activity that human beings spend significant amount of time in is shopping. According to a survey carried out by US Bureau of Labor, customers spend 1.4 hours every day on shopping. Moreover, according to a study conducted by CISCO Internet Business Solution Group, the top four reasons for customers to use new technology are to (i) Find best price (63%), (ii) Save time (47%), (iii) Find best assortment (26%) and (iv) best quality (25%). As shopping also happens regularly inside airport too, we have included location-based advertisement in our proposed system. The application will get the notification dynamically when the user will pass through the adjoining store about the related offer inside the store. The application will use beacon technology for the dynamic change in the data inside application. According to a survey carried out by SWIRL Beacon marketing campaigns are influencing shopper behavior: 73% of shoppers surveyed said that beacon-triggered content and offers increased their likelihood to purchase during their store visit, 61% said they would do more holiday shopping at stores that delivered mobile content and offers while they shop, 61% said they would visit a store with beacon marketing campaigns more often, and 60 % said they would buy more as a result of receiving beacon-triggered

marketing messages The Beacon technology has made the process of collecting data on customers easier and faster in order to reduce costs and to improve services and precisely personalized offers based on the customer's preferences.

**Title:** Anti-Phishing Mailbox.

**Author:** Janhavi Mestry ,Harshika Naik ,Pratik Patil

**Project Guide:** Ms. Vandana Patil

**Abstracts:** Phishing is a form of identity theft in which deception is used to trick a user into revealing confidential information with economic value. Similar forms of identity theft, in which worms or viruses install key loggers, are sometimes also referred to as phishing. This report focuses on phishing involving deceptive electronic messages. While the term "phishing" originated in AOL account theft using instant messaging, the most common type of phishing message today is email. In a typical scenario, a Phisher sends fraudulent email, in bulk, claiming that there is a problem with a recipient's account at a financial institution or other business. The email asks the recipient to visit a web site and provides a link. If a recipient enters a valid user name and password into the fraudulent web site, the phisher can impersonate the victim. This may allow the phisher to transfer funds from the victim's account or cause other damage. There are many variations on this scheme. It is possible to phish for other information in addition to user names and passwords, such as credit card numbers, bank account numbers.

**Title:**Detection

**Author:**

**Project Guide:** Dr. Joanne Gomes

**Abstracts**: Most Deep Fakes on the Internet include pornographic images of men, usually by female celebrities such as those often used without their consent. Extraordinary pornography is being released surfing the Internet in 2017, especially Reddit. Deep Fake is also used to misrepresent famous politicians. In separate videos, Argentine President Mauricio Macri's face has been replaced by Adolf Hitler's face, and Angela Merkel's face has been replaced by Donald Trump's. The first known attempt to make a face-to-face exchange was seen in the photograph of Abraham Lincoln. The lithography superimposes his head with the body of John Calhoun. The engravings of his head on other bodies appeared quite

often after his assassination. In our proposed system the dataset comprises 900 deep fake videos out of which frames were gathered and then frame level feature extraction was done using a combination of Dense and Convolutional Neural Networks to detect the pixel manipulations in the sample video. It was observed that 91% accuracy was obtained in Adam and 88% was obtained in sgd(stochastic gradient descent) for categorical cross entropy. In binary cross entropy, 90% accuracy was seen in Adam and 86% accuracy was noticed in sgd whereas, 86% accuracy in Adam and 80% accuracy in sgd was obtained in mean square.

**Title:** Smart Cultivation

**Author:** Amisha Antiya ,Dimple Swami ,Komal Annaldas

**Project Guide:** Dr. Nitika Rai

**Abstracts:** Agriculture is regarded as the basis of life for the human species as it is the main source of food grains and other raw materials. Growth in the agricultural sector is necessary for the overall improvement of the economy of a country. It is instrumental in providing employment opportunities to a very large proportion of the population, especially in India. The manual collection of data and human intervention in the field is labor-intensive. Automation of data collection at regular and frequent intervals reduces labor requirements and costs. Unfortunately, many farmers still use the traditional methods of farming which leads them towards low yielding of crops and fruits. The use of technology or more specifically precision agriculture can aid in improved yield of higher quality while parallelly enabling farmers to be more aware of critical aspects such as choice of crop, administering fertilizer and pesticides, etc. Systems developed typically use wireless sensor networks to collect data from different types of sensors and then send it to the main server using wireless protocol. The collected data provides information about different environmental factors which in turn helps to monitor the system by operating certain actuators. Monitoring environmental factors are not a sufficient solution to improve the yield of the crops. Several other factors affect productivity to a great extent. These factors include the adequate water supply and the attack of wild animals and birds,which needs to be checked.

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**Title:** AGRO ADVISORY SYSTEM USING BIG DATA ANALYTICS

**Author:** Namratha Bhat , Siddhi Martal ,Sohan Pawar

**Project Guide:** Dr.Nazneen Ansari

**Abstracts:** The main source of food and raw materials, agriculture is the basis of life for humans. Big data can enhance the execution of decision systems by providing an efficient way to farm. Most of the agriculture related data comes from various sources and networks. The objective of the system is to aid farmers and the agriculture experts. The ideology consists of data about farming and related aspects. Farming processes are becoming increasingly data-driven and data-enabled. Big Data is expected to have a large impact on Smart Farming and involves the whole supply chain.Agro Advisory System provides answers according to authoritative experts. Provide guidance for improving agricultural production. It is important to take an analytical look at the farming situation in India, collecting relevant data and mapping points of interest. This work presents a system in form of a website, which uses big data analytic in order to predict the most profitable crop.

**Title:** Predicting Price of Cryptocurrency- A Deep Learning Approach

**Author:** SAMIKSHA MARNE, SHWETA CHURI, DELISA CORREIA

**Project Guide:** Dr. Joanne Gomes

**Abstracts:** Bitcoin, a type of cryptocurrency is currently a thriving open-source community and payment network, which is currently used by millions of people. As the value of Bitcoin varies every day, it would be very interesting for investors to forecast the Bitcoin value but at the same time making it to predict. Bitcoin is a cryptocurrency technology that has attracted investors because of its big price increases. This has led to researchers applying various methods to predict Bitcoin prices such as Support Vector Machines, Multilayer Perceptron, RNN etc.To obtain accuracy and efficiency as compared to these algorithms this research paper tends to exhibit the use of RNN using LSTM model to predict the price of cryptocurrency. The results were computed by extrapolating graphs along with the Root Mean Square Error of the model which was found to be 3.38.

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**Title:** SABLE PLAY

**Author:** Himanshu Mehta, Prem Shah, Sohil Vohera

**Project Guide:** Ms. Shree Jaswal

**Abstracts:** Currently there are many websites that are selling musical instruments and providing some services related to it. For e.g. Amazon, Flipkart, Bajao, etc. These sites provide musical instrument at reasonable rates. Even the instruments a company also provide online platform to purchase their ˆinstruments However, the prices of instruments differ in each site by some difference. Sometimes, even the quality of instruments is different. Also, the aftersales service provided by each company can have differences. The buyer has to make a deep analysis for buying any instrument online, which is a pain to do. The analysis involves study of customer rating, prices, aftersales services, etc. The product may differ from site to site based on these factors. So as to buy an instrument online is a hectic work to do. Based on these factors, best instrument at the best price from the best site can be determined and shown to the Buyer.

**Title:** Assisted Intelligent System for the Blind on Android Platform - ASISTO

**Author:** RONAK RADADIYA, NEREUS RAYAN, SARVESH SHARMA

**Project Guide:** Mr. Vaibhav Kala

**Abstracts:** Although mobile devices include accessibility features available for visually impaired users the user interface of majority of the mobile apps is designed for sighted people. It is clear that “Design for Usability” differs, depending on the final user being a sighted user or a visually impaired user. The project ASISTO is an ANDROID and DEEP LEARNING based human interaction system that assists the visually impaired people in using their basic cell phone functionalities like making a call, sending a text message, knowing the status of the phone etc.by a two way interaction method using speech as the source of input. Also there is a lot of future scope to this system like including responses in different regional languages, and many more features can be added later on. ASISTO would be supported on Smartphone devices specifically android based operating system as most of the crowd today opts for such devices and they are

available at affordable rates too. Hence we believe that this system will be of great help to total as well as partial visually impaired people.

**Title:** SWACHH SMART TOILET

**Author:** Rachel Mascarenhas, Rhea D'souza , Shruti Muralidas

**Project Guide:** Ms. Grinal Tuscano

**Abstracts:** In India, almost 60 percent of its population prefers open defecation over hygiene hence public toilets play a vital role. Although in recent times public toilets built by government help in reducing open defecation but the maintenance of these toilets in hygienic manner is still an issue. Due to the foul smell and improper maintenance the usage of these toilets are less preferred. Open defecation leads to multiple diseases and health problems such as diarrhea. Hence, the issue of open defecation and the hygiene and maintenance of public toilets needs a solution. Government of India has also introduced"Swachh Bharat" (Clean India). Providing uncontaminated toilets is the main objective of"Swachh Bharat" scheme. This paper could be fruitful in order to encourage the clean Bharat scheme. In this paper, we address the above mentioned issues and propose the implementation of public toilets using modern technologies to deliver clean and hygiene toilets, thereby reducing diseases and health problems and improving efficient usage of water and electricity resources.

**Title:** WIRELESS GESTURE CONTROL WHEELCHAIR

**Author:** Rushia Fernandes, Jessica Kakkanad , Shanelle Fernandes

**Project Guide:** Ms. Mrinmoyee Mukherjee

**Abstracts:** With the growth of technology there has always been an effort to use the technology for the betterment of mankind in various domains. One such feature which is beneficial for the disabled and the elderly is a wheelchair as it helps to ease their movements. As per the studies done by the WHO (World Health Organization), it is estimated that out of 650 million people with disabilities 10 percent of them need wheelchairs for their day to day locomotion [2]. The popular wheelchairs in today's market are mainly joystick controlled that expects a patient to grip onto the joystick and move it, with a certain amount of force. Due to varied strengths in hands all users including elders, physically challenged, partially paralyzed patients, quadriplegics, stroke patients, spinal cord injury patients etc.

cannot use the joystick as they lack physical strength. Although alternative control methods are available, they are very expensive and might not be affordable by all. The wheelchairs that are being used in the present time are controlled by the persons sitting over them. The person sitting on the chair has to exert a force by his hands in order to move the chair and get to the desired location. Thus, taking into consideration the lack of force applied to maneuver the wheelchair by the handicapped; a new implementation could be made on the wheelchair which requires the application of minimal force. There are various options to modernize the traditional joystick-controlled wheelchair that can operate by touch, eye movement, voice recognition and body gestures. Under gesture control, there are a number of options available which include movement of the head, arm, palm, etc. This research paper focuses on wheelchairs operating on hand gestures. The advantage of using hand gestures is that it supports wireless technology that can help improve the movement of the wheelchair by increasing the range of transmission in which they operate. The communication occurs between the glove worn by the patient and the wheelchair unit. Data transmission among these takes place with the help of Radio Frequency. This application will be done by using microcontrollers and an accelerometer sensor and will give patients the independence of using the wheelchair without the help of any other person.

**Title:** Supply Chain Visibility using Blockchain

**Author:** Rahul Lotlikar ,Nirav Shah ,Rahul Jadhav

**Project Guide**: Ms. Purnima Kubde

**Abstracts:** A supply chain is a very complex network of multiple exchanges between different entities involved and has developed over a very long period of time. And the introduction of e-commerce has also increased the demands of the supply chain in the past few years. There are many malpractices in this industry such as shipping of fake or used products, tampering with MRP. In the food and beverage industry, regulations, labeling standards, and audits make trace-ability a mandatory objective. But in some industries due to the nature of its products and customer consumption patterns, supply chain product traceability is a low priority, for example, the apparel industry. To tackle this problem we propose a system where the information regarding the supplier, product, and customer will be stored using blockchain technology. This system will use Blockchain technology to record the entity(s) involved in the supply of products from the supplier to the customer into an immutable ledger so as to keep a permanent record of the transaction. For this system, a virtual Ethereum blockchain will be used using the

software Ganache, and the interaction with the blockchain will be done using the web3.js library and Truffle framework. A smart contract will validate and carry out all the transactions that take place between the entities.

**Title:** An Efficient System for Implementation of GST using Blockchain

**Author:** Naman Talati ,Niranjan Sharma ,Rishabh Ranka

**Project Guide:** Dr. Nitika Rai

**Abstracts:** The Goods and Services Tax (GST) came into effect from July 1, 2017 through the implementation of One Hundred and First Amendment of the Constitution of India by the Indian government with the objective of making India, a One Nation, One Tax, One Market ˆ a. The tax replaced the existing ˆmultiple flowing taxes levied by the central and state governments. It is meant to replace a slew of indirect taxes with a federated tax and is therefore expected to reshape the country's 2.4 trillion dollar economy. GST is an indirect tax (or consumption tax) imposed on the supply of goods and services. It is a comprehensive multistage, destination based tax: comprehensive because it has subsumed almost all the indirect taxes except few; multi-staged as it is imposed at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer and as a destination based tax, as it is collected from point of consumption and not point of origin like previous taxes. Goods and services are divided into five different tax slabs for collection of tax - 0The tax rates, rules and regulations are governed by the GST Council which consists of the finance ministers of center and all the states. As stated, GST is multi-staged tax which is imposed at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer and as a destination based tax, as it is collected from point of consumption and not point of origin like previous taxes. This refund process generally takes around 2 to 3 months and needs to be tracked by each stake holder which is a tedious and painstaking process In this project, we aim to employ decentralized Blockchain system to overcome this issue. The designed system will include generation of Smart Contract will do the needful calculation of taxes and will adjust the amount of tax to be paid back to the user and to the government , thus speeding up the traditional process of G.S.T refund.

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**Title:** A PERSONAL ASSISTANT FOR MENTAL HEALTH WELLNESS

**Author:** Neel Shelar, Sanjay Soman, Harsh Shah

**Project Guide:** Ms. Prajyoti D'Silva

**Abstracts:** The World Health Organization (WHO) defines mental health as a state of well-being in which the individual realizes his or her own abilities to cope with the normal stresses of life and work productively and fruitfully, and be able to make a contribution to his or her community [1]. Mental health can affect daily life, relationships, including our physical health. It also includes a person's ability to enjoy life i.e to attain a balance between life activities and efforts to achieve psychological resilience. According to the National Institutes of Health, nearly 1 in 3 of all adolescents ages 13 to 18 experience an anxiety disorder. These numbers have been rising steadily; between 2007 and 2012, anxiety disorders in children and teens went up 20%. These stats combined with the rate of hospital admissions for suicidal teenagers also doubling over the past decade leaves us with many concerning questions [2]. The stigma linked to mental illness can be attributed to lack of education, fear, religious, general prejudice, shortage of mental health personnel, perceived stigma etc. pose a great problem in the treatment of mental health problems. Thus, Good mental health can enhance one's life, while poor mental health can prevent an individual from living a fulfilling life. The most common way in which people deal with this issue is by approaching a psychiatrist. However, physical psychotherapy alone provides only point-in-time support. Technological advances in the field of medical care are now providing diagnostic and treatment capabilities to patients. AI enabled, empathetic, conversational mobile app technologies could play an active role in filling this gap by increasing adoption and enabling reach. AI provides a better solution to reach a larger population at a lower cost and maintain anonymity as well. Thus, we have developed a system containing a chatbot called "YourGoToFriend" with whom any teenager is able to share his personal things without any fear or vulnerability. The chatbot acts as a friend to the individual, by being available 24/7 and responding empathetically to the user. The chatbot also answers various user queries regarding mental health. The system is also integrated with a questionnaire which allows concerned users to gauge their mental health; if found suffering from mental illness, they are provided with details of personal psychiatric they can consult.

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**Title:** Plagiarism Checker using NLP

**Author:** Christie George , Lydia Nadar , Akash George

**Project Guide:** Ms. Shree Jaswal

**Abstracts:** In a digital library system or a database of an educational institute, documents are available in digital form and therefore are more easily copied and their copyrights are more easily violated. This is called Plagiarism. Plagiarism diminishes one's innovative thinking, creativeness, imagination and improvement of knowledge also it is considered as unethical behavior in a moral society. This is a very serious problem, as it discourages owners of valuable information from sharing it with authorized users. There are two main philosophies for addressing this problem: prevention and detection. The former actually makes unauthorized use of documents uneasy or not possible while the latter makes it easier to discover such activity. This paper proposes a system for registering documents and then detecting copies, either complete copies or partial copies. This system will decrease the problem of plagiarism in an organization though it cannot be completely avoided. The software will incorporate various algorithms detecting overlapped documents also provide means to store all the documents Thereby maintaining the integrity of the work of an individual or a particular organization.

**Title:** MULTI PURPOSE UNMANNED VEHICLE FOR DISASTER MANAGEMENT

**Author:** Samson Correia , Fesdil Dmello ,Akshay Raina

**Project Guide:** Ms. Prajyoti Dsilva

**Abstracts:** Considering the political unrest in the country and cut throat competition for emergence of super power across all countries in the world, which can led to war like conditions at any point of time is the main cause of taking up this project. The need to provide timely ammunition, medical services, transportation etc in both sea and land at any point of time during any critical situation apart from war, situation like natural calamities is another motivation behind taking up this project. The current research in this field gives us method to build and design a hovercraft as shown in [1] however this alone is unable to merge in multiple technologies required for remote access. Author named Stubbs, Andrew, et al. [2] has devised a system for decentralized control of hovercraft,

however use of advanced communication and networking technologies that can include wireless technology such as WiFi, GPS/GSM vehicle location tracking, 360 degree viewing camera which includes sensors for capturing live data that can be useful for security reasons and other useful causes are missing. Authors Munawar A Riyadi*, Lazyo Rahmando and Aris Triwiyatno have proposed a solution for the COG. [3]Mechanical systems in the prototype of hovercraft are very influential for stability when on the movement. Specifically, the design of hovercraft prototype must have the COG (Center of Gravity) approaching the orientation axes so that the movement in maintaining body stability could be done with less hassle. Considering the high-speed hovercraft navigation safety and its complicated maneuvering and control performance, it is necessary to study the real-time obstacle avoidance combined with the hovercraft dynamics performance. [4]This paper the authors Yuanhui Wang, Wenchao She, Mingyu Fu* Fuguang Ding, introduced an improved Follow the Gap Method (FGM) with dynamic window approach (DWA) considering the real-time hovercraft dynamic performance to avoid obstacles. The traditional DWA is used to find an appropriate velocity that is the vehicle selects the possible velocity in the admissible velocity space to avoid collision during a specific time interval. And then choose the most appropriate velocity by using an objective function. From a detailed review of the available literatures about the motion controllers of hovercraft, only simple three degrees of freedom (DOF) model were adopted. And aerodynamic and hydrodynamic forces and moments acting on the body were not represented in their equations of motion. Any analysis of a marine vehicle must include the analysis of the structure of these forces and moments. And in practice, when the hovercraft is turning, roll angle always exists and increases with the increase of the turn rate and drift angle [3]. Roll angle is important for the performance and safety of hovercraft, just like drift angle [2]. It is also shown from that the four DOF model including roll motion is closer to the performance of the real ship than three DOF model. Hence, four DOF model of hovercraft is established in this paper [1], [4]And the forces and moments acting on the hovercraft are represented including aerodynamic profile drag, wave making drag, air momentum drag and skirt drag. Especially, the influence of the rudder forces on the surge, sway and roll dynamics which always be ignored in many studies are considered here.The common hovercraft is a kind of under actuated vehicles. In the last few decades, different control techniques have been proposed to deal with the control of under actuated marine vehicles such as cascaded approach Lyapunov's direct method, backstopping technique dynamic surface control (DSC) technique, sliding mode control (SMC) technique, and more**.**

**Title:** Mining Techniques To Improve The Effectiveness Of Marketing And Sales

**Author:** Aman Singh, Vishal Yadav, Ravi Talla

**Project Guide:** Ms. Mrinmoyee Mukerjee

**Abstracts:** Data mining, now days, is the most important field of computer science and it deals with the process of extracting information from a data set and transforms it into an understandable structure for further use. Data Mining is defined as a large amount of Data in Data warehouse, or other information obtained potentially useful and ultimately understandable patterns of nontrivial process. Evaluation of a dataset provides answers to various performance criteria of an algorithm like accuracy, classification error, absolute error, of likely products to buy together, etc. Market basket analysis in data mining is a modelling technique based upon the theory that if you buy a certain group of items, you are more (or less) likely to buy another of group items.

**Title:** BOTTLE DETECTION USING IMAGE PROCESSING AND MACHINE LEARNING

**Author:** Shyam Joshi, Denni Stephen, Joaquim Abraham

**Project Guide:** Mr. Vaibhav kala

**Abstracts:** In today as world of extreme competition, cost reduction is of utmost importance for organization, ˆprimarily in the retail and customer product goods industries. All the major players in these industries try to focus on cost cutting and maintaining optimum inventory levels to gain a competitive edge In addition to cost optimization, having just the right amount of inventory is also becoming important for customer satisfaction especially in the perishable retail good market. The shelf out of-stock is a challenging problem for retailers and suppliers, still unsolved over the years and that needs a solution. Accordingly this problem does not involve only lost revenues, but it may also entail the loss of customers in the long run

**Title:** HUMAN HEALTH MONITORING SYSTEM

**Author:** Shawn Hendricks, Vaibhav Savaliya,Jefrin Jose

**Project Guide:** Dr. Minal Lopes

**Abstracts:** Urban lifestyle is getting faster, hectic and tight scheduled day by day. People are struggling to balance their work and health. In this view, various technological developments of present era have come-up to aid the health care industry. So we are proposing an idea of creating a wearable in which there will be various sensors attached to it in order to monitor various health parameters while the person continue to be in their comfortable home environment instead of visiting healthcare facilities frequently. As well as this wearable will be useful for senior citizens while they are out alone, an alarm notification will be sent to authorized persons if there is any emergency.

**Title: ROUTING FOR DELIVERY OF PERISHABLEPRODUCTS USING DATA MINING**

**Author:** PARTH JOSHI, ROLVIN KHARJIA, SHAUN COUTINHO

**Project Guide:** Ms. Prajyoti D'Silva

**Abstracts:** With the increasing advent of e-commerce services like, online Restaurants, Food Delivery Apps, E-Groceries, etc., where customers can order goods through the Internet and have them delivered at home; the problem of vehicle routing with time windows has become more and more important [1].Because of such explosive growth of e-commerce and the ever-increasing desire for faster service, current logistics capabilities are stretched to (or beyond) the limit, and the players in the sector are seeking new and creative solutions to address the unprecedented challenges and are exploiting new and emerging business models to drive change [2]. These recent advances in communication and mobile device technologies has necessitated and facilitated the transportation sector to go through a revolutionary transformation .Moreover, the aforementioned e-commerce services also requires the solution to be dynamic in nature and respond to real time inputs to the system and adjust the route accordingly. The successful deployment and operation of delivery networks for delivery of perishable products is difficult not only due to the scale of these systems, but also due to the dynamism and urgency of arriving orders [3]. Without exaggeration, delivery of perishable goods is the ultimate challenge in last mile logistics: a typical order is expected to be delivered within an hour (much less if possible), and within minutes of the order becoming ready, thus reducing consolidation opportunities and imposing the need for more vehicles operating simultaneously and executing shorter routes. Furthermore, such delivery networks must be able to respond to wide, and often abrupt, swings in demand both in spatial and time

dimensions. In an attempt to achieve the desired responsiveness without the costs linked to employing a sufficiently large permanent fleet of vehicles (and full-time drivers), delivery providers have adopted "digital marketplace" business models - where the supply of couriers, i.e., independent contractors making deliveries [4, 5], is managed indirectly through economic incentives. This strategy, first explored in the context of taxi and ride-hailing services, externalizes fixed costs (to couriers) and enhances the ability of the system to plan and control capacity levels over time and geography in sync with demand fluctuations. The proposed system considers a variant of the Vehicle Routing and Delivery Scheduling Problem with Time Windows (VRDSPTW) where each vehicle can perform several routes during its workday and has to respond to real time changes in delivery routes. For example, in the home delivery of perishable goods, like food, routes are of short duration and must be combined to form a complete workday. Surprisingly, this problem has received little attention in the literature in spite of its importance in practice.

**Title:** EYE MOVEMENT BASED CURSOR CONTROL

**Author:** Ameya Patkar ,Rodney Pinto ,Akshada Dongre

**Project Guide:** Dr. Minal Lopes

**Abstracts:** In this Project, a computer application is developed using Python and OpenCV. The proposed system is a virtual interactive module for the users and can be used as an alternative module of touch screen technology. It will make it possible for the user to move the cursor point on the screen of the computer and also additional functionalities like clicking on the computer screen. In this system, after the input is taken from the user, the real-time image and video input are processed and face recognition is performed. A point on the user's face would control the cursor on the screen and the right and left wink would implement the right and left click respectively. Squeezed eyes would facilitate the enabling of the scroll function in case of reading PDFs and other documents. It would thus facilitate the use and movement of the cursor through the eye movement. The android application can be implemented on desktops and laptops. With the help of this application, the user can perform actions like move the cursor in all directions, scroll, click buttons like the back button and the home button. Thus the system would be extremely helpful for physically challenged users.

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**Title:** AID, CHARITY AND DONATION TRACKING SYSTEM USING BLOCKCHAIN

**Author:** Aashutosh Singh, Rohan Rajak, Harsh Mistry

**Project Guide:** Dr. Prachi Raut

**Abstracts:** Blockchain is a promising technology and is becoming predominant for solving problems related to security and privacy under the control of both public and private sectors. Blockchain is gaining popularity within the domain of charity. Due to lack of transparency in the transactions involved in Donations the donor(s) are not able to know whether their donations are being utilized properly, which has made people lose trust in Charities. This work proposes a Blockchain based Decentralized Donation tracking system built on Ethereum Blockchain which will provide full transparency, accountability and direct reach to the intended recipients.

**Title:** Integrating Different Data Mining Algorithms for Gaming Industry

**Author:** Pratik Dias, Harsh Desai, Breezem Fernandes

**Project Guide**: Dr. Nazneen Ansari

**Abstracts:** The gaming industry has now become one of the most important field in case of revenue generation. With the advent of mobile gaming and improvements to hardware used in playing games, gaming has become a feasible shape of amusement for gamers from all regions and ages. The gaming industry is an emerging industry in cutting-edge world. Games are played internationally on various platforms like mobiles, computers, and consoles. These games generate superb quantities of information. This gaming statistics may be used to carry out mining operations and for this reason generates results that can help in improving the overall gaming industry. Game telemetry is facts logged from clients or servers about how players play games, or conversely approximately how the sport client itself responds to player behavior. Analysis of telemetry information can be finished by making use of game facts mining tools and the outcomes may be used to classify gamers who play positive games, their behaviors in the sport, and their recreation play patterns. This project aims to apply data mining techniques like Association, Classification and Clustering on game telemetry data. Algorithms like

Apirori, Support vector machine, Random forest and hierarchical clustering are used to perform analysis on game telemetry data. The results obtained from these algorithms then can further be used to improve various features of games like game marketing, game life, game design improvement and game stickiness. The analysed data then can be fed to decision making support systems to improve the overall gaming quality of the use.In the project, Apirori algorithm is used to improve the game life feature of games, Support vector machine and Random forest algorithms are used to for targeted marketing i.e. improving the gaming marketing feature of the game and hierarchical clustering single linkage algorithm is used to improve the game design factor of games.

**Title:** DEEP BELIEF NEURAL NETWORK FOR ABNORMAL BRAIN IMAGE CLASSIFICATION

**Author:** Sarita Acharya, Shreya Bandodkar , Prachi Gupta

**Project Guide:** Ms. Amrita Mathur

**Abstracts:** Glioma is a common brain tumor, which may lead to short life span in their highest grade. Thus to improve the quality of life of cancer patients is the early diagnosis of brain tumor, which is a stage of treatment. MRI (Magnetic Resonance Imaging) is a widely used medical imaging technique used to assess tumors, but large amounts of data produced by MRI may vary greatly. Thus manual detection is challenging. To segment brain tumor in magnetic resonance imaging many automated diagnostic systems play an important role. Deep belief neural network for abnormal brain classification system mainly include three steps namely preprocessing, classification and post processing. A Y-net based segmentation method is used to segment MRI images which can yield the result accurately. BRATS 2018 brain image dataset is used. The model will learn using this data and segment the MRI images.

**Title:** AUTONOMOUS BOT USING NEURAL NETWORK

**Author:** Shruti Ambre , Mamata Masurekar , Micheal Erickson ,Chris Dmello

**Project Guide:** Ms. Amrita Mathur

**Abstracts:** In Computer Vision and Computer Graphics, 3D reconstruction of a scene plays a fundamental role capturing the shape and appearance of real objects. In case of disasters three-dimensional rendering of the area will offer a better visual of the disaster. Robot navigation through an alien environment benefits from a 3D map to support obstacle avoidance, path planning, and autonomous exploration.

**Title:** Simulating Poacher Detection Using UAVs

**Author:** Shreya Gaikwad,Cyril Dabre,Pranit Mhatre

**Project Guide:** Dr.Nazneen Ansari

**Abstracts:** Illegal trade of wild animals is a merciless offence as various species of animals like elephants, rhinos and tigers are being killed for their valuable possessions like ivory, horn, skin, etc. The forest rangers conduct patrols with the aim of preventing poaching activities that are killed by poachers .activities. However, the sanctuaries and wildlife conservatories are spread over a substantial land and it is manually impossible for a team of rangers to patrol this widespread land day in and day out. Poaching activities bring a huge chunk of income which is persuading the poachers to carry out such activities risking their lives. Hence there is a need to automate the process of monitoring poaching activities. Hence, the task is automated. Yolo algorithm which is currently a state-of-the-art algorithm can be used to locate these poachers from a distant place. Also, it is comparatively faster than its competitors and hence a better option for detection of poachers.

**Title:** HOSPITAL AUTOMATION USING QR CODE AND IVR

**Author:** AGAM SHAH, DEEP SHAH, KEYUR TOGADIYA

**Project Guide:** Ms. Priyanca Gonsalves

**Abstracts:** Visiting a doctor isn’t most people’s favorite activity, as a patient one pretty much has a terrible experience visiting a hospital. Long waiting times in infamously long queues in hospitals, lack of timely appointments, and poor access to information are some of the reasons that contribute to unpleasant experiences, which ends up having little bearing on how good a doctor really is. Hence in this

work, we propose a system that uses QR (Quick Response) and IVR (Interactive Voice Response) for efficient appointment booking. A QR Code is a two dimensional square bar code which is used to store data from a black and white square array, a machine-readable code that allows faster access to stored data. They can be read using Smartphones and dedicated QR reading scanners, a QR Code scanners can be as simple as application on your smartphone that uses the camera and some decoding algorithm. QR Codes offers a number of advantages over traditional bar codes; these help increase flexibility, reliability and ease of use. These advantages help to reduce the cost of implementation which has helped drive QR Codes popularity. Some of the features of QR codes are High Storage capacity that allows more storage of data, require less space to store data compared to bar code, dust and damage resistant that is a small amount of damage would not affect the readability of the code, readable from any direction that is scan from any angle, readers don't need to be aligned to the orientation of the code, structure appending which means data can be split over multiple codes which when scanned can be combined to reconstruct the original content. While IVR is a technology that enables a computer machine to communicate with human beings using DTMF (Dual-Tone Multi-Frequency Signaling) tones and voice. The use of IVR technology enables people who do not have a smartphone or access to the internet to book an appointment. The proposed system will provide a way to easily and quickly book appointments over the phone, store and maintain virtual medical records to avoid manual paperwork, thus providing faster access to medical data anywhere, providing patients with one-click access to doctor's details, online prescriptions.

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# ABSTRACTS

**Title:** Real Estate Service Portal

**Author:** Diparth Shah, Gaurav Tiwari, Joyan Serrao, Shervin Fernandez

**Project Guide:** Ms. Bidisha Roy

**Abstracts:** Real Estate is a significant sector in today's public domain. With the ever changing and evolving dynamics of land usage in the country, the sector has made rapid strides over the last couple of decades. The Real Estate Service Portal is an attempt to venture into this domain, explore its functioning, identify its shortcomings, and come up with viable solutions.

One of the most striking disadvantages of the current real estate system is its tediousness, owing to the fact that most procedures are largely offline.The Real Estate Service Portal works on this flaw by taking procedures online, a step that beautifully eradicates the rigidity of the existing system, also eliminating the chances of discrepancies and malpractices that have come to define the existing offline system. By making procedures digital, the portal brings in the much-needed fluidity, in what is otherwise a pretty cumbersome system. Digitalizing the present offline services and incorporating a set of highly robust techniques (end-to-end encryption, OAuth-based authentication, computer vision and multilingual website support to name a few) will ensure that the procedures are streamlined, fast-paced, highly secure and most importantly, convenient for the end-user

This project report documents the salient features of the Real Estate Service Portal in great depth, thereby offering a comprehensive study review for analysts and users of the system. The highlights of the report can be encapsulated in the following points –

• Offers a detailed overview of the problem at hand.

• Sheds light on potential solutions.

• Captures the requirements (functional and non-functional), specifications, and a Systematicwork flow for the project.

• Makes use of software engineering tools and concepts to offer an analytical vision to the project.

By shedding light on the points mentioned above, this report gives the onlookers, be it users, analysts, or industry experts; an extensive overview of the design and working of the proposed system.

**Title:** Woyse - A Multilingual Entity Recognition System

**Author:** Siddhesh Kishor Bhoir, Bhushan Milind Borole , Nishant Maxie Carvalho

Riya Subhash Jain

**Project Guide:** Mr. Rupesh Mishra

**Abstracts:** Named Entity Recognition and classification is the task of identifying the text of special meaning and classifying into some categories. These categories have a wide variety of range from person, location, organization to dates, quantities, numeric expressions etc. Since 1996, Named entity recognition has been an important research area. Due to its important use in various natural language applications, it is a required field to be studied. In this paper, we present a survey of named entity recognition techniques, issues and challenges and application domains. The performance analysis of some well-known rule-based and machine learning based named entity algorithms has been done. This work will help the researchers to select the most suitable named entity recognition technique in a specific application and will also serve as a guide to identify the areas that need attention from the research community.

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**Title:** SUSPECT FACE GENERATION

**Author:** Canute Corda, Sunny Dsouza , Harsh Jalan ,Gautam Maurya

**Project Guide:** Ms. Dakshata Panchal

**Abstracts:** Currently sketch artists are employed by the police to draw sketches of suspects based on the description given by an eye-witness, these sketches can sometimes be inaccurate due to incorrect drawings of the artist or the incorrect description given by the witness. GAN is short for Generative Adversarial Network which is a way of training a Neural Network to output images which belong to a specific class. This network is trained by making it compete with another network which predicts whether the image made by Generative Network is enough to qualify as real. In order to generate high resolution images, PG-GAN is used. TL-GAN is used to generate image based on latent-space input obtained from the input features. This alteration is made using TL-GAN. TL-GAN offers users the ability to gradually tune one or multiple features using a single network.The main objective of our project is to develop a Suspect Face Generation System as the sketches made by sketch artists are only 13 out of 160 times (approx. 8%). This Face Generation System can be used by military, police and government organizations to generate images of suspects or individuals. This system will help the society in reduction of misidentification of crime suspects. It will also considerably reduce the crime rate.

**Title:** NETWORK INTRUSION DETECTION AND

PREVENTION USING MACHINE LEARNING

**Author**: Savio D’Costa, Noel Chacko, Snehal Yadav

**Project Guide:** Ms. Pradnya Rane

**Abstracts:** With the widespread usage of internet and increases in access to online content, cybercrime is also happening at an increasing rate. Intrusion detection is the first step to prevent security attacks. Hence the security solutions such as Firewall, Intrusion Detection System (IDS), Unified Threat Modeling (UTM) and Intrusion Prevention System (IPS) are getting much attention in studies. IDS detects attacks from a variety of systems and network sources by collecting information and then analyzes the information for possible security breaches. The network based IDS analyzes the data packets that travel over a network and this analysis are carried out in two ways; Anomaly Based and Signature Based

Systems. The challenges with anomaly based intrusion detection are that it needs to deal with novel attack for which there is no prior knowledge to identify the anomaly. Hence the system somehow needs to have the intelligence to segregate which traffic is harmless and which one is malicious or anomalous. In this project, we aim to create a system which can efficiently and accurately detect and deal with attacks such as the Brute Force attack, Heartbleed attack, Botnet attack, DoS and DDoS attack, and a variety of web and infiltration attacks. We have taken our dataset from the Canadian Institute of Cybersecurity (CIC) which consisted of about 2 million data entries of network connection traces spanning across 79 attributes of each network connection. This dataset will be used to create our model using machine learning algorithms such as the decision tree algorithm and the random forest algorithm which will provide us with an efficient way to detect the type of network connection that will pass through the ecosystem. The incoming network will be detected by wireshark and the attributes of the network will be fed into the system. The model will process that network connection to detect the nature of the network connection. If the network connection is detected to be malicious in some way, the packets of that network connection will be dropped and the network will be restricted to enter the ecosystem.

**Title:** AUTOMATED DATA CLEANING

**Author:** Jowin Jestine, Anushka Kamath, Maroof Khatib, Priya Nawal

**Project Guide:** Mr. Shamsuddin S. Khan

**Abstracts:** Data cleaning is the process of identifying and removing the errors in the data warehouse. While collecting and combining data from various sources into a data warehouse, ensuring high data quality and consistency becomes a significant, often expensive and always challenging task. Without clean and correct data the usefulness of Data Mining and data warehousing is mitigated. This paper analyses the problem of data cleansing and the identification of potential errors in data sets. The differing views of data cleansing are surveyed and reviewed and a brief overview of existing data cleansing techniques is given.

**Title:** VERA: AI CAREER COACH

**Author:** Arbaz Khan,Vinit Masrani,Anoop Ojha

**Project Guide:** Ms Safa Hamdare

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**Abstracts**: Unemployment and Unemployability are one of the biggest issues in India. The report reveals that 80% of Indian engineers are not fit for any job in the industry. Currently there is no standard and proper resource which can prepare an individual pertaining to industry requirements. Career guidance encompasses assisting individuals with career development. It includes help with career choice, job search, and career advancement. There has been an increasing hype and usage of chatbots now a day. If chatbots are used as career assistants which can guide an individual to the right track then this will motivate people to learn and acquire new skills. Currently there is no standard and proper resource which can prepare an individual pertaining to industry requirements. So, this project will help develop standard platform where users can get all the career related queries solved and also resources needed for industry. VERA is built with the aim to leverage the latest technologies to help job seekers, career aspirant and tech enthusiastic to realize their dream.VERA uses the latest technology in AI and Natural Language Processing to understand the user query and fetch the relevant information from thousands of possible sources, all in a matter of milliseconds.

**Title:** Product Recommendation System Using CNN and KNN

**Author:** SUSHAIN BHAT,JESON D'SOUZA ,MYLES D'SOUZA

**Project Guide:** Ms.Varsha Nagpurkar

**Abstracts:** In this work we describe a CNN-based method for finding similar apparels based on just an image or a potentially complex image and subsequently consider the identification of the type of apparels. The presented system employs innovative methods including convolutional neural networks. Two different networks are trained and evaluated on the Fashion dataset. The usage/evaluation of convolutional neural networks is presented through a software system. Data set is used from ImageNet. We also use KNN (K-Nearest Neighbor) after the classes are generated to find out the nearest possible result or in other words the most similar results.According to research, people on an average look up clothing apparels more than anything else as it is hard for them to know what kind of apparel a certain apparel is or what specific brand is that apparel of. Over the past decade it has become clear that people consider fashion as an integral part of their life and that it is necessary for them to stay updated with the latest trend of apparels.So our aim is to let the users have a little more information about the apparel that they see in their day to day life so that they can stay updated with the trends and buy the apparel that they like without putting in a lot of effort for it.

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**Title:** VIDEO ENHANCEMENT USING DEEP LEARNING

**Author:** Atharva Dhuri, Akshay Patil, Varun Patil, Asmit Save

**Project Guide:** Ms.Vanessa D'Britto

**Abstracts:** Enhancing of images and videos refers to super resolving low quality media. A majority of this process today relies on traditional methods of enhancement which add blank pixel layers or similar pixel colors across adjacent pixels to generate a high pixel output. Such processes tend to be very tedious since they are done manually and addition of similar pixels does not necessarily generate a good quality high resolution output. An undesirable softened effect on the image is highly probable. This reduces overall quality of enhanced images and videos thereby leaving the output undesirable. We instead propose a fully automated solution which can replace manual methods of image resolution using deep neural networks. The process uses a video dataset which is downscaled and provided as an input to the model. The model uses deep neural networks for training. The output of the model is compared with original dataset and per pixel difference is analyzed to calculate loss function value. This loss function needs to be further minimized. This is done using Generative Adversarial Networks (GAN). The final output is a high-resolution video that minimizes loss function.

**Title:** SUBJECTIVE ANSWER EVALUATION USING MACHINE LEARNING

**Author:** Akshant Churi, Snovia Gonsalves, Sitanshu Kushwaha, Nisha Ladhe

**Project Guide:** Ms. Priya Karunakaran

**Abstracts:** The subjective answer evaluation using machine learning is not a new idea and has been in consideration for quite some time now. In this paper, by critiquing various methodologies used for this task in the past we are identifying the challenges of the problem at hand. Thus, we would like to propose a solution that uses Prediction based Word Embedding and try various similarity algorithms to evaluate the answer based on its semantic rather than just keywords. We also propose a methodology to use our Text data Algorithms to evaluate Block diagrams and Flow charts. The approach thought to do this will be based on the similar meanings of the students' answer and the teachers' answers since students can write answers according to their understanding and in their own words and not in any rotted textual way, and not on the presence or frequency of some number of

words and phrases. In this way, we can understand how much knowledge the student has acquired of the subject, and grade them on that basis. This will be very helpful to evaluate student's exam papers i.e. on a large scale with huge amount of data and large number of papers effectively, efficiently and in an unbiased way.

**Title:** Digital Eye Glass Using IOT

**Author:** Joyson Almeida, Glen Pinto, Ankit Rambia, Cain Tavares

**Project Guide:** Dr. Kavita Sonawane

**Abstracts:** As technology is growing rapidly and integrating itself to all aspects of people's life, designers and developers try to provide a more pleasant experience of technology to people. One of the technology trends which aims to make life easier is wearable computing. Wearables aim to assist people to be in control of their life by augmenting the real life with extra information constantly and ubiquitously. One of the growing trends of wearable computing is Head Mounted Displays (HMD), as the head is a great gateway to receive audio, visual and haptic information. Also due to the Google Glass project, wearables in form of glasses gained much more attention during the last years. However, because of the early stages of the technology adaptation, there is still much to explore on social acceptancy, key use cases and design directions of glasses as a type of wearable computing. This project focuses on two things, the first thing is to explore the different use cases of a wearable eye tracker concept in different context and study the user's perception of such a device. The second thing, is to design different alternatives for a wearable eye concept and evaluate the concepts by conducting focus groups to understand the user perceptions toward different industrial design concepts of such a system.

**Title:** LIE DETECTION USING MICRO-EXPRESSION AND SPEECH PATTERN ANALYSIS

**Author:** Mandar Acharekar, Amritha Prakash, Shruti Chaudhary, Vinay Deshmukh

**Project Guide:** Ms.Vincy Joseph

**Abstracts**: Deception is a very common phenomenon. Most people lie for reasons like concealing rewards or avoiding embarrassing situations so that they are accepted by the society. Detecting lies is an important task which can be applied in

various sectors such as job interviews, court-hearings,etc. This project makes use of multiple disparate features to determine if the subject is lying. It is a robust system which comprises three modules to cross-verify the results of each individual module: First, micro expressions classifier is used which detects involuntary muscle movements exhibited by a person when they are lying. Second, a speech pattern analyzer that uses multi-class classifiers is utilized to determine deception from the speech of the subject. Finally, an eye blink and pupil dilation analyzer determines the probability that the person is lying. All three modules independently determine the veracity of the subject's statement, and are passed through acombining unit to give a final answer which indicates whether the subject is lying or not.

**Title:** HUMAN ACTIVITY TRACKER AND FITNESS ADVISORY APPLICATION

**Author:** Aaron MaryDas, Charles Mathew, Aloysius Chettiar, Jaison Menezes

**Project Guide:** Ms. Tejal Carvalho

**Abstracts:** If one really wishes to be healthy, all they need is the proper nudge from some authenticated source. This helps one to make certain modifications in their lifestyle and daily habits, if necessary. And, these fitness app are the best to provide the nudge in the right direction. These keep you motivated and focused to achieve the desired level of fitness. In the past few years the people have become more serious about their health & fitness. Fitness mobile apps are a perfect solution for those users who want to change their daily life eating habits and improve their overall health conditions. Our application will help them with just that and help them for their benefits. This application will help the user maintain their diet regime with taking their health problems like Diabetes, high or low blood pressure or any kidney problems. Also this application will give diet plans based on their preferred diet for example a vegetarian or non-vegetarian diet plans. It also has other feature like keeping a track of the steps taken by user and calculating the calories burnt, also finding heart rate and blood pressure just by using the users' index finger and flashlight of the camera.Overall, this application could really help one to improve their lifestyle andkeep them fit.

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**Title:** VOICE OVER PERSONAL ASSISTANT

**Author:** Leo Amit Dcosta, Jollyson Degutania, Clive Pereira

**Project Guide:** Ms Anuradha Srinivasaraghavan

**Abstracts**: Voice assistants are software agents that can interpret human speech and respond via synthesized voices. Apple's Siri, Amazon's Alexa, Microsoft's Cortana, and Google's Assistant are the most popular voice assistants and are embedded in smartphones or dedicated home speakers. Users can control home automation devices and media playback via voice and manage other basic tasks such as email, to-do lists, and calendars with verbal commands. This device will explore the basic workings and common features of today's voice assistants. It will also discuss some of the privacy and security issues inherent to voice assistants and some potential future uses for these devices. As voice assistants become more widely used, librarians will want to be familiar with their operation and perhaps consider them as a means to deliver library services and materials.

**Title:** INTERACTION ANALYSIS OVER SPEECH FOR CALL CENTRE

**Author:** Veerus D'mello, Parth Kholkute, Rhea Kolhapurkar, Nicholas Patric

**Project Guide:** Ms. Ankita Karia

**Abstracts:** Customer Service Center is the second most important consideration just after the actual product. Also, customer service is one of the biggest contributors to the cost component for any firm. We aim to apply well-known data mining techniques to the problem of predicting the quality of interactions like those done in call centers and the problem of predicting the quality of service. The analysis of call center conversations will provide useful insights for enhancing Call Center Analytics to a level that will enable new metrics and key performance indicators (KPIs) beyond the standard approach. These metrics rely on understanding the dynamics of conversations by highlighting the way participants discuss topics. The main focus will be to reduce the average handling time, is a call center metric for the average duration of one transaction, typically measured from the customer's initiation of the call and including any hold time, talk time and related tasks that follow the transaction. Get real-time solution. The main operations will be speaker diarization, speech to text, agent analysis, emotion recognition and other measures to help with the analysis. We will use RAVDESS (Ryerson Audio-Visual Database of Emotional Speech and Song) for emotion analysis, consisting of vocal emotional expressions in sentences spoken in a range

of basic emotional states (happy, sad, anger, fear, disgust, surprise and calm). Emotion recognition is done by extracting features from the audio from its Mel-frequency cepstral coefficients (MFCCs) and passing it through a convolutional neural network. All of this will happen in real time as the call is taking place.

**Title:** Personality Assessment using Social Media for Hiring Candidates

**Author:** Roshal Suresh Moraes, Mrunal Dilip Pilankar, Larissa Lancelot Pinto

**Project Guide:** Ms Pradnya Rane

**Abstracts:** Personality determines how we live, speak, react, and indicates our preferences, and even affects our mental health. Personality analysis is an intuitive ability of humans, carried out every day with multiple people, and for innumerable reasons. Personality profiling, specifically, has several real-life use cases, such as mental health screening tests, screening during human resource interviews etc. Hiring candidates is one of the most crucial and time-consuming process for any company. Our system plans to overcome some of the inconsistencies in the system and make the selection process fair. Personality Analysis using social media is an actively developing field and our project tries to merge it with the job hiring process, which will help the employer get an overall idea of the candidate's ideas and ideals. Using personality prediction system, for hiring candidates will enable a more effective way to shortlist submitted candidate Resumes from a large number of applicants providing a consistent and fair ranking policy. Personality assessment to predict job performance System aims to automate personality assessment process by extracting text from candidate's Twitter account and perform personality analysis. This process will be done for the college students in Third Year from all departments. Prior data access permission will be taken from each candidate safeguarding their privacy. The results obtained must be used to shortlist candidates along with other factors. This system will make use of the text taken from the resume of the candidate and his/her tweets. This data will be used for personality analysis of the candidate providing him/her with a separate Myers Briggs Type Indicator personality analysis, Big 5 personality analysis and suggest general job roles suitable for the candidates. The employer from the hiring company will be shown a metric of the applied candidates' personality analysis.

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**Title:** AUTOMATED SQL GRADING SYSTEM

**Author:** Nishita Dubey, Chelsea Fernandes, Samruddhi Kalsekar, Shohna Kanchan

**Project Guide:** Ms. Safa Hamdare

**Abstracts:** A grading system is an integrated arrangement of methodologies used by teachers to assess and evaluate a student's educational performance. The generic method employed by teachers and tutors over the globe for grading and evaluation is dependent on various physical parameters.Considering the overall incrementing number of students, our project improvises the obsolete evaluation system by automating the entire process. Thereby, improving not only its accuracy but also its efficiency. In a general grading system, manually grading Structure Query Language (SQL) assignments is quite laborious and time consuming. For grading assignments and conducting tests, it is usually not sufficient to just check if a query is correct. Moreover, the basic approach for the same is inefficacious due to the adaption of manual methods. Thus, if the query is incorrect, partial marks may need to be given, depending on how close the query is to being correct. The correctness of SQL queries is usually tested by executing the queries on one or more datasets. Erroneous queries are often the results of small changes or mutations of the correct query. We extend the XData system by adding features that enable the awarding of partial marks to incorrect student queries. Our system is able to go beyond numerous syntactic features when comparing a student query with a correct query. These features of our grading system allow the grading of SQL queries to be fully automated. In this paper, we propose the implementation of an Automated Grading System for SQL Queries which thus provides an efficient way to assess a student's performance by awarding appropriate scores. The Automated Grading System is implemented for partial marking using PostgreSQL. The front-end of our system is executed with a database-driven website using Django. This project automates the generic grading process that employs partial grading by incorporating various sub-techniques under querypre-processing. The corresponding project will thereby be of great value to database course instructors, teaching assistants, online courses as well as to the global educational systems.

**Title:** Eye Disease Detection

**Author:** Lenwyn Lobo, Gwyn Mendonca, Warren Fernandes, Genius Machado

**Project Guide: Ms.**Vanessa D'britto

**Abstracts:** The proposed system with the help of deep learning will help in detection and classification of four diseases of the eye, DME, Macular Hole, Cystoid Edema and Serous Macular Detachment. The input is an OCT image is grayscale; this is compressed down with the use of concepts like Max Pooling and Average Pooling. The pooling techniques help in retaining the main features of the image into the compressed image. With the help of CNN technology and passing the compressed image to its layers, the proposed system detects the disease if any. The CNN system analyzes each pixel of the input and finds the distinguishing features which help is classification. The output if a disease is detected is the type of the disease, or a healthy eye. Hence, deep learning (Machine Learning) was used throughout the processing of image until the disease detection and output processing.

**Title:** MALARIA PARASITE CLASSIFICATION USING

IMAGE PROCESSING AND MACHINE LEARNING

**Author:** Anushree Shanbhag, Shruti Sureshan, Hrishikesh Telang

**Project Guide:** Dr. Kavita Sonawane

**Abstracts:** Malaria is a severe infectious disease caused by a peripheral blood parasite of the genus Plasmodium. In this work, a proposed approach primarily focuses on image processing techniques to process and enhance stained thin blood smear images for feature extraction, as well as machine learning techniques for the final classification of feature space. In the past, conventional microscopy techniques have proven to be time-consuming and had observed a lack of differentiation due to poor accuracy and lack of algorithms used. Researchers in this domain have already used various preprocessing, segmentation, and feature extraction techniques. In this project, our emphasis is to address the issues of conventional microscopy methods using techniques such as Otsu's method and Watershed algorithm for segmentation, followed by extracting texture features

using CNN. We have also calculated color features using Bins Approach, statistical features using color moments, and texture features using GLCM matrix,which also equally play a pivotal role in feature extraction for classification. Further, these images will be classified into parasitized and uninfected cells by applying machine learning classifiers such as Linear SVM, Random Forest algorithm, and KNN over feature space. The proposed algorithms have been experimented using the subset of Lister Hill National Center for Biomedical Communication (LHNCBC) dataset, which is a part of the National Library of Medicine (NLM). The performance of the algorithms is evaluated and compared using different performance evaluation parameters like accuracy, precision, recall and F1-score. It is expected to obtain better results of classification concerning these parameters.

**Title:** Water Scarcity Prediction and Supply Scheduling

**Author:** Swapnil Verlekar, Alisha Shah, Nigel Martis

**Project Guide:** Ms. Snehal Kulkarni

**Abstracts:** Today, water resource management is one of the major problems we are facing. Presently manual analysis to meet the need of water demand has been practiced. India is very dependent on rainfall through dams as a fresh water resource. This leads to high uncertainty in water supply. In India, one of the cities that is badly affected by water scarcity is Chennai. Nevertheless, in most urban areas, a decent water supply is followed after a scarcity is noticed, but this lacks in rural areas. This project is based on developing a system for an efficient and accurate Water Scarcity Prediction for Chennai. This system simplifies data management, enhances the ability to diagnose scarcity, assists in preventing supply/scheduling errors, and improves operational efficiency. It can also play a pivotal role in knowing about areas with abundance of water resource. This system majorly focuses on automating a Scarcity predictor and providing an accurate visualization graph scheduling a supply from nearby abundant water resources. This system is designed to create a model based on real-time data, which in turn would contribute to most of its accuracy. It eliminates the need to track manual analysis of data to predict the upcoming scarcity if any. Based on the analysis of the data set, it is certain that rainfall in Chennai greatly affects the water level in the resources. The system has been developed using aRandom Forest Regressor to create a model at the backend.

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**Title:** Agriculture Portal

**Author:** Neeraj Dahad ,Hinal Jain ,Zenas Mukadom ,Priyansh PID 172264

**Project Guide:** Ms. Sweedle Machado

**Abstracts:** Through technical and policy interventions, India has reached a record level of 277.49 million tons of food grain production, becoming the second-largest producer of fruits and vegetables. However, due to inadequate logistic support, lack of refrigerated storage, supply chain bottlenecks, poor transport, and underdeveloped marketing channels around 30 percent of the produce is lost, falling heavily on the economy of the farming community including women farmers. The proposed system is an interactive and modular portal that intends to iron out these flaws and offer a strong, technology-backed framework for streamlining the delivery of agricultural services.

**Title:** REALTIME PLANT IDENTIFICATION

**Author:** Astle Machado ,Aron Pereira ,Ian Rodrigues

**Project Guide:** Tejal Carvalho

**Abstracts:** Plant identification based on various features like leaf, flower, fruits, stem structure etc. of the plants is becoming one of the most interesting and a popular trend. Each feature carries unique information that can be used in the identification of plants. For the identification of plants based on leaf, fruit, flower and stem structure the images need to be pre-processed accordingly to extract these critical features. In the proposed system, Convolutional Neural Network (CNN) model will be used to classify the plants and then the system will display the medicinal uses of plants for treatment of human diseases followed by its basic information. The proposed system classifies plants using the CNN model based on its morphological features.

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**Title:** Detection of Sybil Attacks in Social Networks

**Author:** Allan Lobo ,Yukta Mandekar ,Sonali Pundpal

**Project Guide:** Ms.Bidisha Roy

**Abstracts:** The advent of the Internet revolutionized communication between people in different geographical locations. It has brought about a reduction in the turnaround time, for exchange of information between people, from days to seconds. Social networks have become an important part of life. They provide aplatform for people to connect and communicate with one's kith. As they have an important role in communication, social networks are under the threat of cyber-attacks. Sybil attacks are a form of security breach where the network is infiltrated with forged identities.Multiple duplicate identities are created by malicious users to flood the system with fake information, negatively influencing the performance of the system. These attacks make the system look unreliable. This paper builds on Asadian and Javadi's [1] work of detecting sybil nodes in a network. They proposed using Jaccard index as a similarity measure which is then used by Louvain algorithm to divide the dataset into communities.Apart from the two usualcommunities in which nodes are allocated, Honest and Sybil, this paper introduces a third community, the Questionable community, where suspicious nodes are assigned. This allows the nodes to be quarantined and keep tabs on their activities without removing them from the network and risking loss of goodwill.We then explore the Honest community using L2 Norm and those found below a threshold are assigned to the Questionable community. This refines the results found in the first part of the system. The results obtained are promising and should provide favorable results in real time systems. The system presented in this paper returns a precision value of 0.98, equal to SICTF and Improved KD-Tree method [2] and returns a recall value of 0.94, which is better than other methods available.

**Title:** PHYSICAL INTRUSION DETECTION SYSTEM

**Author:** Sumukh Maduskar,Pankaj Masaye ,Suyog Mule

**Project Guide:** Ms. Priya Chaudhari

**Abstracts:** Vision-based surveillance is a current study field in computer vision. Precisely observing forbidden regions should be crucial for video surveillance.

Visual surveillance had gained attention not only from the research community but from defense establishments, too. One type of solution available is to build a physical fence around the area of interest. But the costs of construction, maintenance, and repair make them exponential. In some other circumstances, it may not be possible to have physical sensors connected to the objects. In such cases, vision-based systems offer cost-effective solutions.The proposed solution is to develop a system based on person detection and facial recognition. The functionality of the system is divided into two phases - working hours and post working hours. The system will try to check the current timestamp. Depending on the time, it will turn to any of the tasks. During working hours, it will detect and recognize the faces of the people entering the region. After finding an unknown face, it will generate an alert message. The unknown face stored in the local storage system as evidence. After working hours, there is less chance of people entering the area, so it will change to person detection. Such activity will be reported to the security personnel. This will allow him to verify if the person is trying to encroach the prohibited area. The same activity will be stored on the local storage, similar to the facial one. The system is dependent on the face of each person coming in the camera viewpoint and the person entering after working hours. It will work on moderate to high-end computers with a lightweight, yet powerful dashboard and GPU based processing.

**Title:** AugShop: An Augmented Reality Android Application

**Author:** Calvin Pinto,Rakchhit Singh,Sandeep Yadav,

**Project Guide:** Ms. Priya Chaudhari

**Abstracts:** Augmented reality (A.R.) is a type of interactive, reality-based display environment that takes the capabilities of computer generated display, sound, text and effects to enhance the user's real-world experience. Augmented reality combines real and computer-based scenes and images to deliver a unified but enhanced view of the world. The proposed system, AugShop is an A.R. application that enables users to visualize home decor products before making a purchase. Online shopping is preferred today when it comes to buying furniture/home decor. While sites that provide these services do provide the dimensions and representative images for the same, it is inconvenient for users to get an idea of how an object on a screen will map to the real world. Also there are limited provisions in current online shopping sites to compare two or more products. The proposed system attempts to solve this problem by rendering the furniture and other home decor items in Augmented Reality using the Android studio for

building the application, AR Core plugin to incorporate augmented reality in our application

**Title:** DRIVER DROWSINESS DETECTION

**Author:** Ameya Dalvi ,Urjit Desai ,Gandharva Deshpande ,Shreya Nambiar

**Project Guide:** Ms. Supriya Solaskar

**Abstracts:** Driver drowsiness detection is a car safety technology which helps prevent accidents caused by the driver getting drowsy. Various studies have suggested that around 20% of all road accidents are fatigue-related, up to 50% on certain roads. Driver Drowsiness detection is the task of identifying a drowsy driver and generating an alert to indicate the drowsiness to avoid accidents. After drunk driving, driver's fatigue is the second largest cause behind the accidents. Thereby, this is an important issue that needs to be addressed. The proposed work intends to develop a feasible, fast and accurate system that detects driver drowsiness and sets off an alarm if the driver is found to be drowsy and thereby mitigate road accidents. The system uses live video stream from a camera while the model detects facial features like eye aspect ratio, yawning, head tilts to monitor driver's state etc. to yield an output. The approach is essentially based on deep learning method, implemented on embedded systems so as to depict real life scenarios. This work makes use of a deep neural network. Facial features such as eye aspect ratio, yawns and head tilts are detected. These features are extracted from the training set and serve as input to the Multi Level Perceptron (MLP). The final values of these features are then tested on the testing data set before implementing the system in a real vehicle.

**Title:** Treating Phobias using Virtual Reality

**Author:** Akshay Belnekar, Vanessa D'Souza ,Maria Varghese ,Jayesh Kedar

**Project Guide:** Ms. Dakshata Panchal

**Abstracts:** Phobias are one of the most common types of anxiety disorders, affecting a significant number of people around the world. In recent years, Virtual Reality Exposure Therapy has emerged to help in phobia treatment. It combines elements of both Imaginal and Vivo exposure so that a person is placed in situations that appear to be real but are actually fabricated. Virtual environments created by using virtual reality (VR) tools can help make the treatment of certain types of phobias more efficient. In our project, we have mainly focused on three types of phobias- claustrophobia, acrophobia and arachnophobia and have created virtual environments that can be used in the treatment of these phobias. This system can efficiently help in the treatment of phobias ensuring patient's security, low costs and easy availability of software.

**Title:** Intelligent Healthcare System for Niramay Mothercare Centre

**Author:** Alicia Chettiar ,Boscosylvester Chittilapilly Saket Dalvi Avril Serrao

**Project Guide:** Ms. Anuradha Srinivasaraghavan

**Abstracts:** Most Indian hospitals are adopting computer systems for automation of its departments and to move from paper based records to computer based records. But other than multi-speciality hospitals and a few mid-range hospitals, a large number of hospitals and local clinics still rely on paper based approach for keeping track of records. In addition to lots of manpower and resources for tracking the day-to-day activities, such manual record keeping is prone to mistakes and lack to provide adequate information for analysis.The proposed system majorly focuses on automating the working of Niramay Mother Care Center by providing a full fledged ERP system. This would simplify records management, enhance the ability to diagnose problems, assists in preventing treatment errors, and improves operational efficiency. This system is designed to store data accurately and to capture the state of a patient across time.

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**Title:** ROUTE AND COST OPTIMIZATION FOR WAREHOUSES

**Author:** Jasmine Pinto, Alston Quadros, Disha Rathod

**Project Guide:** Ms. Jayashri Mittal, Mr. Rushikesh Dadge

**Abstracts:** The objective of the model is to help a transport company efficiently use its resources to the optimal stature. We will be creating a system as per the real time needs of the warehouse. We will create an application for the warehouse wherein the warehouse manager can track the status of the truck. The warehouse owner will be notified when the truck driver deviates from the path. Our main focus will be route and cost optimization for the warehouse. We will integrate our application with Google maps in order to provide the most optimal path. According to the extracted data for delivery of the product, we will create multiple shortest paths. For every shortest path, we will generate a specific itinerary and a loading sequence of items such that the item to be delivered first is loaded last. This will help us to save costs by optimizing the consumption of fuels as well as help in increasing the efficiency of deliveries on time better. We will also provide optimal size for the truck so that the truck does not topple.

**Title:** AUTOMATED ATTENDANCE MANAGEMENT SYSTEM USING FACE RECOGNITION

**Author:** Prithvi Shetty ,Rithika Shetty ,Susan Sara Thomas ,Sakshi Tholar

**Project Guide:** Mr.Rajkumar Shende

**Abstracts:** Attendance maintenance is an important task in educational institutions; it is an important metric to evaluate the performance of students. The traditional pen-and-paper based approach has several shortcomings. To start with, it's tedious and time-consuming. The fact that it's entirely manual implies that there's the inevitable risk of human error creeping in. It's a setupthat's riddled with loopholes, one that can be cleverly duped by miscreants. Automation, via biometric techniques, offers an elegant alternative. The proposed system is a dynamic, secure and highly efficient alternative. It makes use official recognition. In its fully functional state, the system will follow a series of well-planned steps. The preliminary step is student registration. The application would be aided by a high-quality camera set-up that'll capture an image of the whole classroom. The image will be captured twice – once at the beginning of the class and once at the

end, to ensure that the concerned student has attended the whole class. Thereafter, comes the driving component of the system – face detection and recognition (feature extraction and classification). The procedure would culminate with the attendance-related details being furnished on the institute's portal.

**Title:** COUNTERFEIT PRODUCT DETECTION USING TWO LEVEL QR CODE

**Author:** Sanskruti S. Gawas ,Poournima S. Naik ,Swarada L. Puranik

**Project Guide:** Ms. Supriya Solaskar

**Abstracts:** The expansion of counterfeit products is increasing day by day, and the technologies used for making these products are used with utmost precision to match the original product. One such product which when forged creates an impact on students and institutes is marksheet. There are cases where forged marksheets are used to gain admission seats, which not only affects institute reputation but indirect injustice to students seeking admission through legal means. QR Codes have been widely used in digital business marketing purpose and has gained a lot of attention in past years due to its easy to access property and versatility in data storage. So, by using these advantages we introduced a new QR Code which has two storage levels. The above problem can be minimized to a certain extent by differentiating these counterfeit marksheets from the original marksheets by using Two-Level QR Code. The Two-Level QR Code consists of two levels, Public QR code which stores conventional student data and Private QR code stores AES-encrypted marksheet number which stands unique for each certificate. The main use of Two-Level QR Code is that the private level can only be scanned using a custom-made QR Code scanner, while the public level QR Code can be scanned using any generic QR Code scanner. The generation of private QR Code is done by LSB algorithm. The Android Scanner Application consists of student and staff/faculty login. The faculty can report the counterfeit marksheets to university or concerned authorities through the application. The students can verify the authenticity of marksheet through the application.

**Title:** SHOW AND TELL: A Neural Visual Storyteller

**Author:** Linton Pereira , Melron Pinto ,Kinshuk Shah

**Project Guide:** Mr.Shamsuddin S. Khan

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**Abstracts:** Automatically describing the content of an image is a fundamental problem in artificial intelligence that connects computer vision and natural language processing. RNN, CNN, NLP and LSTM are powerful techniques that help us to work toward generation of captions. This model will describe complex images using technologies like Recurrent Neural Network (RNN) and Natural Language Processing (NLP). Convolution Neural Network (CNN) is used for object detection. RNN is a network with memory: it keeps feeding its inputs back into itself, so it can remember past information. RNNs are used for sequential data but, they do have some flaws in remembering information. To overcome these flaws LSTM is used.

**Title:** BREAST CANCER DETECTION USING IMAGE PROCESSING

**Author:** Richa Fernandes ,Ethan Rebello ,Kunal Shirodkar

**Project Guide:** Ms. Sweedle Machado

**Abstracts:** Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. When these abnormal cells are been seen in the breast tissue, it is known as breast cancer. Breast cancer is now a common cancer in India and is the second most common cause of death in women. There are various cancer detection techniques like MRI scans, Mammography, CT Scan, etc. out of which accuracy rate of Mammography has high accuracy and safety and it can be used for effective early breast cancer detection. In this project, a proposed approach primarily focuses on image processing techniques to process and enhance the Mammography images. In this project, various algorithms will be used such as Histogram modification, Median filter, Otsu method, Structuring element and Region Props for preprocessing and detection of cancer cells. The proposed algorithms will be experimented using Mammography images of King Edward Memorial Hospital. The performance of the algorithms will be evaluated and compared using different performance evaluation parameters like accuracy, precision and recall and it is expected to obtain better results for detection with respect to these parameters.

**Title:** Predictive Analysis of Chronic Kidney Disease

**Author:** Sanjay Gupta ,Oscar Menezes ,Arnold Lewis

**Project Guide:** Ms. Snehal Kulkarni

**Abstracts:** Predictive analytics for healthcare using machine learning is a challenging task to help doctors decide the exact treatments for saving lives. Machine learning techniques can be used for predicting the chronic kidney disease using clinical data. Machine learning methods are explored including naive Bayes, logistic regression and more. These predictive models are constructed from chronic kidney disease dataset and the performance of these models are compared together in order to select the best classifier for predicting the chronic kidney disease. Kidney disease is very dangerous if not immediately treated on time, and may be fatal.

**Title:** SECURE CLOUD BASED COLLEGE MANAGEMENT SYSTEM

**Author:** Ashal Correia ,Sherwin Gonsalves ,Agnelo Nunes ,Sneh Vartak

**Project Guide:** Mr. Rupesh Mishra

**Abstracts:** In a world state of affairs, like faculty field, the information is inside the kind of notice, hand manual, verbal message, is being unfold among the students. Currently it's of the essence to not entirely use the predictable varieties of statement, but together new forms like phone technology, for faster and easier communication among the students. The core set up of this project is to implement automaton based collage Management application for advancement of multinational and educational system.

Android College Management system is an android application which is helpful for students as well as the colleges. In the existing system all the activities are done manually. It is very costly and time consuming. In our proposed system, students can view results using Android phones. The data will be stored in the college server. The faculty can login into their college account through the app itself and update the academic result. In this system, students have easy access for viewing the marks, provided their authentications are correct and they are not permitted to change/update the marks.

The proposed work has two modules: 1. Student 2.Admin. In the student’s module, student need to register their roll no, college registration number, student name. Admin module maintains the student’s marks of internal college exams. Other than

this the advanced features are: In case of natural calamities such as floods, etc. notification to students will be sent from admin office through app directly. Any new notice for a particular semester will be uploaded by professor through application notifying to respective semester students. Additional feature in this application is that the students can play quiz based on various topics. This will help in enhancing the student's knowledge regarding that particular subject. Instead of playing random games on mobile now students can play this educational quiz and gain information.

**Title:** PRODUCT TRACEABILITY USING BLOCKCHAIN

**Author:** Rishabh Bhatnagar, Sneha Jha ,Shrey Singh

**Project Guide:** Mr. Rajkumar Shende

**Abstracts:** The food industry considers food safety as the major concern. Recently, there has been an increase in the food fraud resulting in public health harm, economic harm. This results in an alarming concern regarding the quality and safety of human life. In food supply chain, with the rapid growth of internet technologies, a lot of emerging technologies have been applied in traceability systems. However, to date, nearly all of these systems are centralized which are monopolistic and opaque that could result in the trust problem, such as fraud, corruption, tampering and falsifying information. We aim to address this issue by tracing the food supply chain using a Distributed Ledger Technology, Blockchain. It will help the user to access the information regarding the transactions in food supply chain in real-time enforcing transparency, security and authenticity. We have given a demonstration of how Blockchain can be applied on the food supply chain and provide transparent tracing of transactions.

**Title:** SCHOOL BUS SECURITY USING BIOMETRIC AUTHENTICATION

**Author:** Jay Dmello Vinay Pereira Velina Rodrigues Rion Tuscano

**Project Guide:** Ms. Ankita Karia

**Abstracts:** A lot of children need to communicate between homes to school daily. In recent days safer transportation of school children has been a severe issue as it is often observed that, the child is forgotten to exit in the respective bus stop and if the child not entering the bus in a respective stop. Nowadays, women and child safety is a prime issue in our society. The count of the victim is increasing day by

day. The proposed system intends to find another solution to solve these problems by developing a bus safety system that will control the entry and exit of students from the buses through an advanced methodology. The proposed system recommends an android based solution which assists parents to track their children location in real time. To track the location GPS module is used and to identify the identity of the child a biometric identification is used which is inbuilt in the system. Whenever a child boards a bus, the biometric identification is done in the bus and the system will identify the child and update the login server will send to the parents consisting of the current location and time. This proposal recommends an android based solution which assists parents to track their children location in real time. To track the location GPS module is used and to identify the identity of the child a biometric identification is used which is inbuilt in the system. Whenever a child boards a bus, the biometric identification is done in the bus and the system will identify the child and update login server will send to the parents consisting of the current location and time.

**Title:** INTUITIVE USER INTERFACE

**Author:** SURAJ NEGI  SHAKHAF JOSEPH  CYDNELLE ALEMAO

**Project Guide:** Ms. VINCY JOSEPH

**Abstracts:** Search engines have become a gateway to access the internet for majority of the users. Although search engines have been in use for a long time, their user interface hasn't seen a lot of change over the years. The usability of a search engine can be greatly improved if the results are displayed in a more informative manner. Currently the results page consists of a certain number of links to the websites that the search engine has found. The user has to visit a link to know how useful it is. We believe that the functionality of a search engine can be greatly enhanced by a better user interface. In this paper we propose to improve the interface of the search engine in a manner that will increase the ease of access to all the relevant information. We plan to change the way the results are displayed as well as the way we interact with the interface by allowing the user to use hand gestures to interact with the UI without the use of physical devices. The frontend and backend of our system will be connected using Django framework to present the results as tiles and a Convolutional Neural Network to detect and identify hand gestures.

**Title:** STOCK MARKET PREDICTION BASED ON TWITTER DATA AND NEWS ARTICLES

**Author:** Preethi Bhutelo Alisha Fernandes Archana Yadav NirajKumar Yadav

**Project Guide:** Ms. Priya Karunakaran

**Abstracts:** Social media has become an integral part of everyone's life. Twitter is the most prevalent social networking service where a large number of users share vast amount of information on a daily basis. Aggregation of these tweets provides a reflection of public sentiment which has a notable impact on the Stock Market. The objective of our proposed model is to predict the impact of Tweets and News Articles on the Stock Market and provide insights to the investors to help them decide whether or not to invest in a company. Methodologies have been proposed that perform sentiment analysis on twitter data and predict the possible fluctuations in Stock Market based on this analysis. The paper proposes a method to improve the efficiency of the existing methodologies by including news articles along with tweets for scrutinizing the public sentiment and preprocessing the tweets by adding specific weights to each tweet based on authenticity and followers of the twitterer, impact of the tweet and the number of times it has been retweeted. It also considers the sentiments expressed via emoticons and converts prolonged words into their normal form to increase the efficiency of sentiment analysis. Subsequently, it uses N-gram representation for Feature Extraction and performs sentiment analysis on the collected tweets and news articles using Natural Language Processing and classifies the result into negative, positive or neutral using Naive Bayes classifier. The empirical results displayed in graphical format show that the proposed system can predict the fluctuations in the stock prices based on the sentiment analysis performed on the previous day's collected tweets and new articles.

**Title:** Web Secure Files

**Author:** Riya Dabre Shalom Dbritto Prevail Dias Saviour Fargose

**Project Guide:** Dr. Shobha Tyagi

**Abstracts:** Biometric technology has been used for decades as a strong method to identify and authenticate individuals. As for its effectiveness and accuracy, biometric technology has gained popularity in a wide range of fields and applications, including government, health care, security, and forensics. However,

the use of biometrics has been primarily used in local applications and has not been widely deployed for remote applications due to many challenges in terms of privacy, security, and trust.

In addition, network coded systems are vulnerable to pollution attacks where a single malicious node can flood the network with bad packets and prevent the receiver from decoding the packets correctly. In existing system, the parameters measured resulted with AES 128 bits inferred encryption time of 1.91 sec and decryption time of 1.94 sec. The primary goal of this research is to explore how biometrics can be deployed in the cloud and how the enrolled biometric templates can be shared between the API calls and Services, taking into account the challenges faced when using biometrics for distributed applications. These challenges include the security of biometric templates, the privacy of users, and the trust for remote biometric operations. An enhanced encryption method with AES-256 algorithm is used for protecting the biometric traits on insecure communication path. MD-5 is used for integrity. To increase the strength of the system, AES is used with Chaos. The cloud used for storage is Amazon Web Services S3 (AWS S3) i.e. Amazon Simple Storage Service.

The proposed system designed used input file as text file with size of 14KB, the resulted encryption time was 206msec and the decryption time was 150msec. The enhancement done resulted in difference of throughput for encryption 1722.41 and decryption 230.24 than the one implemented with AES 128 bits. The project implemented will be used practically to serve protection of the biometric traits captured and stored on cloud for legal purposes. The future scope of this model focuses on to meet recognition module to be incorporated into the cloud and hence authentication will be carried on cloud which will increase the performance and scalability of biometric system**.**

**Title:** SKIN DISEASE PREDICTION

**Author:** Lyron Colaco Chris Dsilva Nash Dsilva Sanil Fernandes

**Project Guide:** Mrs. Jayashri Mittal

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**Abstracts: We propose a skin disease detection method based on image processing techniques. This method is mobile based and hence very accessible even in remote areas and it is completely noninvasive to patient's skin. The patient provides an image of the infected area of the skin as an input to the**

**prototype. Image processing techniques are performed on this image and the detected disease is displayed at the output. The proposed system is highly beneficial in rural areas where access to dermatologists is limited. A deep neural network-based ensemble method is experimented for automatic identification of skin disease from dermoscopic images**

**Title:** Online Pass Generation and Recognition System

**Author:** Shivani Raut Steve Rodrigues Merryl Tuscano

**Project Guide:** Mrs. Varsha Nagpurkar

**Abstracts:** This project provides an effective solution for managing railway pass information using a database. Our system has three login for user, admin and ticket checker. This system provides an android application for people to get their railway passes online. This system is useful for users to get their railway pass online instead of standing in long queues to obtain their railway passes. This system is helpful to reduce the paper work; time consumption and user get the railway pass in simple and faster way. User can refill their account and extend the validity of card when the pass is going to expire.

This system provides functionality like accessing basic information of user for authentication and provide Railway pass for the user without placing them in long queues. This system provides security option for user. The ticket checker in railway would be able to verify the pass by scanning the QR code provided on the pass with a recommended device. The notification generated by the system would be send to the user in form of message such as when where and what time the card was use. This system also provides online payment facility.