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LEARNING AND INFORMATION RESOURCE CENTRE

CATALOGUE OF B.E. PROJECT REPORTS

BATCH 2020-2021

<u>BRANCH</u>
<u>CMPN</u>
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ABSTRACTS

Title: GodsEye Smart Virtual Exam System

Author: Clarice D'Silva ,Sancia D'Cunha ,Agnellus Fernandes ,Anisha Fernandes

Project Guide: Ms.Bidisha Roy

Abstracts: The Covid-19 Pandemic has been one of the defining events in recent history. It has affected millions of lives and has an impact on every sector of civilization. No matter the domain, the pandemic has forced it to implement radical and innovative reforms. Education and Academia has been identified as one such sector that has been impacted most adversely due to the Pandemic.

Disrupting the age-old Classroom Design, the Pandemic has forced educational institutes and schools to implement 'Online Classes'. A concept that has now been standardized, by many. However the evaluation aspect of education still remains to be desired. There are no easy to use or accurate means of conducting examinations for students during this Covid-19 Pandemic. There are a few options available, but they are either too expensive for the institutes or inconvenient for the students to use. There needs to be a solution that not only goes hand in hand with the 'e-learning Approach' but also

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is convenient to use by all its users to help institutes validate their students' performance and prepare them for conducting any malpractices.

Title: Akira-Voice Based Email System For The Visually Impaired

Author: NediyaKalayii Reshma Ruby, Shaikh Sara Imtiaz Poojary Roshani Shivram , Prasad Shreya Mukesh

Project Guide: Ms. Jayashri Mittal

Abstracts: The Internet is widely used in all communication systems and recent developments have ensured that they are reliable and efficient in nature. Email continues to remain the most widely used means of communication in the business aspect. Using Email is easy and non-complicated for most users. However, for the visually impaired, it is strenuous and requires external assistance. Although there have been technological advancements like screen readers to accommodate the visually impaired, it does not ensure hassle free and independent usage. We aim to develop a web-based system that will allow a visually impaired person to make use of email without the use of a mouse or keyboard. The system will be completely voice based and responsive by making use of text to speech and speech to text. The system will allow a user to read inbox one by one and at the end of each mail, the user can choose to delete the mail. The user can also download the attachments received from the mail and forward the mail. The user can compose mail by adding the recipient's email and subject then proceed to write the body of the email using speech to text. While composing the email, if the user does not speak for more than 30 seconds, the system will prompt words for the mail being composed. The user can add attachments and can save the mail as draft and send it later. We ensure privacy and secure login of the user by implementing voice authentication

Title: COMPANY TO CANDIDATE MAPPER

Author: Janhavi Parab, Darrel Noronha, Harsh Oza, Shelton Jade Pinto

Project Guide: Ms. Dakshata Panchal

Abstracts: Emerging as well as established companies look for candidates to be recruited in an efficient and organized manner. Companies require a certain number of candidates in a particular domain from time to time. Recruiters act as mediators between companies and candidates to get

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maximum best fit candidates as per their requirement. Recruiters get a lot of applications i.e., resumes from various candidates and going through each resume for a specific job description of a company has always been a tedious manual task. Shortlisting and screening of candidates has always been a challenging task. An intelligent system can be developed that could help in easing the recruitment process by mapping the resumes of the best candidates to the company's job description. The candidates will be ranked on the basis of a scoring system that will act as a mapper. Ranking of the candidates would be on the basis of certain parameters that best match the requirements in a specified job description. Also, recommending resumes to the company based on the previous selection of candidates for a similar job description is a part of such an intelligent system. The significance of this project is to bridge the gap and the challenges faced in the recruitment process.

Title: E-commerce Platform for Small & Medium Enterprises

Author: Antony Alex, Flavita Mascarenhas, Vipul Naik, Ankit Shahu

Project Guide: Ms. Snehal Kulkarni

Abstracts: E-commerce today is a remarkable experience. It has transformed traditional shopping beyond recognition. E-Commerce is now seen as a reality for many businesses and a normal part of a business plan. The immediate benefits, in terms of cost savings, efficiencies and enhanced profitability are clear at every stage in the supply chain. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. Unlike traditional commerce that is carried out physically with the effort of a person to go & get products, e-commerce has made it easier for humans to reduce physical work and to save time. This project is an e-commerce platform project. The aim is to give each seller the ability to set up his own virtual shop profile over which he has control. The central concept of the application is to allow the customer to shop virtually using the Internet and to buy the items and articles of their desire from the store. This e-commerce platform is designed to allow small neighborhood stores to compete against big corporations. It will help small firms to enter global markets. It will allow the small and medium enterprises to participate in international market

Title: IMG2ART - Image Translation

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Author: Ayush Navgiri, Shivani Raul, Alisto Pinto, Abhinav Pisharody

Project Guide: Ms.Vincy Joseph

Abstracts: In fine art, especially painting, humans have mastered the skill to create unique visual experiences through composing a complex interplay between the content and style of an image. Thus far the algorithmic basis of this process is unknown and there exists no artificial system with similar capabilities. Style transfer generates an image whose content comes from one image and style from the other. Image-to-image translation is a class of vision and graphics problems where the goal is to learn the mapping between an input image and an output image using a training set of aligned image pairs. Thus a system is needed for generating art. The system generates art by looking at art and learning about style; and becomes creative by increasing the arousal potential of the generated art by deviating from the learned styles. Thus the system is built over Generative Adversarial Networks (GAN), which have shown the ability to learn to generate novel images simulating a given distribution.

Title: Deepfake Detection in Video

Author: Collin Pereira, Ryan Pereira, Yash Prasad, Jeff Vaz

Project Guide: Ms.Safa Hamdare

Abstracts: In the era of technological advancements and a qualitative breakthrough in the field of artificial intelligence and deep neural networks, a new age of hyper-realistic digital forgery called DeepFake has been born. With this new technology, it is difficult to differentiate between real videos and fake ones that are posted daily to different websites across the Internet. Many open source DeepFake development methods have increased, leading to a rising number of synthesised media clips on the Internet. There are several fast effective methods and techniques designed to detect such phenomena. Our answer is to provide a freely available system to access such detection services and provide the means for reducing the spread of Deepfakes.

Title: Emerging an Intelligent Third-Person Action Game using Unity 3D

Author: Abdus Samad Mukri, Jeetu Jangid, Bryan Devadatha ,Sairaj Hegde

Project Guide: Ms.Varsha Shrivastava

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Abstracts: Gaming has gained immense interest and is also considered as a popular entertainment station. Because of its intractability, people get the chance to alleviate their daily stress, find satisfaction and be the heroic version of themselves. This particular project is about a 3D third-person action game which contains AI controlled players along with human controlled players. The environment of the game has been developed using the unity 3D engine. This gives simplicity to new gaming players and is also going to be easy to play for children. In this game, the main goal of the player is to defeat the incoming waves of non-player characters and at the end defeat the boss in order to complete the game. The game consists of several levels where each level will be the continuation of the previous level. The game environment consists of a city area and different equipment to be used in the game. This work brings a real time scenario into the gaming environment and makes the gamers wait eagerly for the next level.

Title: AGROW CHAIN: Agricultural Supplychain using Blockchain

Author: Sachin Adate, Rahul Bane, Yash Boura, Ankit Chauhan

Project Guide: Mr.Rajkumar Shende

Abstracts: The agriculture industry considers food safety as the major concern. Recently, there has been an increase in agriculture fraud resulting in public health harm, economic harm. This results in an alarming concern regarding the quality and safety of human life. In the agriculture 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 agriculture supply chain using a Distributed Ledger Technology, Block chain. It will help the user to access the information regarding the transactions in the agriculture supply chain in real-time enforcing transparency, security and authenticity. To overcome the inefficiencies of existing agricultural supply chain we have demonstrated how block chain works and how it can contribute to tackle those problems and also provide transparent tracing of transactions.

Title: Deep Audiobook Tuner

Author: Daniel Lobo, Jenny Dcruz, Smita Deulkar, Leander Fernandes

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Project Guide: Ms.Priya Karunakaran

Abstracts: Music plays a very important role in people's lives. The music industry is worth \$19 billion however the average person doesn't have a vast knowledge of music theory. This makes it difficult for these people to come up with original and catchy melodies. Automating the creative process of humans means that companies can get multimedia products faster and cheaper. This essential application can easily be implemented using machine learning techniques. With the development of deep learning, neural networks are being used extensively for tasks such as sentiment analysis of text as well as audio files. These techniques can also be used to develop a music generation model. Some of the approaches to accomplish this are by using Transformers, LSTMs, bidirectional RNNs, etc. Music generation using machine learning has multiple applications. For instance, musicians can use this application to generate new songs using the unique melodies that our system creates. Considering audiobooks, the narration often doesn't include accurate voice modulation. Moreover, one may seldom find background music along with the narration. These factors affect the experience that the author is trying to create with regards to the story. In audiobooks, using sentiment analysis we can generate emotionally relevant background music. For our project, we will be focusing on creating an application that can take an audiobook as the input and generate relevant background music based on the predicted sentiments.

Title: App to Simplify Alzheimer's

Author: Kalpak Gaonkar, Alisha Dias, Lyrica Dodati, Melita Coutinho

Project Guide: Ms.Ankita Karia

Abstracts: Mobile phone software applications or apps are available for a variety of useful healthcare tasks such as psycho-education, symptom assessment, resource location, and tracking of treatment progress. This study focuses on creating an application for smart phones with an android system. Alzheimer's disease is one of the leading diseases that contribute to dementia cases. The Alzheimer's patient suffers from memory loss and losing judgment due to its effect on the human brain. Technology can help bridge the gap between patients and doctors or the caregiver to improve the quality of life for the cognitive impaired. This system addresses cognitive functioning and quality of life for people diagnosed with dementia via technology. The Android-based mobile application is one of current technologies that can be used to assist doctors to monitor Alzheimer's patient medication and alert the patient when to consume the medicine based on the schedule provided by the doctor. We

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also propose an effective method where the application will help the caretaker keep a track of the patients whereabouts in their daily lives.

Title: ALUMNI STUDENT CONNECT

Author: Jeremy Anton, Vinutha Chelamallu, Amrut Savadatti, Ryan Jacobs

Project Guide: Ms.Varsha Nagpurkar

Abstracts: Students have queries regarding foreign education, industries, companies, their start-ups ideas, etc. which could be answered by alumni who are working in that country or field of industry. Presently teachers and the alumni association are working as a bridge between the alumni and students to fulfil the students requirement. This system is not able to fulfil the requirements of the student at the earliest, even after tremendous efforts of the faculty. 'Alumni Student Connect' project is introduced to improve the present scenario. This project reduces the effort and time of teachers and the alumni association. It will help to create a direct interaction between the alumni and the students without any involvement of the third party. Students and alumni who are interested will have to register with their details which will be encrypted using the SHA hashing method. This project has functional features like Elastic search, Semantics analysis, OCR modules, tokenization of the input text, POS tagging and a couple more. The system has a user interface where students can post their queries and the application analyses the question and checks if a similar type of question has been asked previously or not. If yes, then the system will show the pre answered questions and if no, or the student who has asked the question is not satisfied with the previous answers, the question is sent to alumni. The system finds relevant alumni based on the question and skill set requirement. The alumni can view and answer the question. Alumni Student Connect project is useful to improve the relationship between alumni and students as the rate of interactions increases.

Title: Detection, Classification, and Severity Prediction of Acute Intracranial Brain Hemorrhage

Author: Jesdin Raphael, Prishita Kadam, Prajwal Karale, Ian D'silva

Project Guide: Dr Kavita Sonawane

Abstract

Acute Intracranial Hemorrhage (ICH) is a condition that occurs when a blood vessel within the skull is ruptured or leaks. This condition causes the brain cells to die and the damage thus caused can be severe and result in physical, mental, and task-based disability. ICH accounts for 10 to 20% of all strokes and the mortality rate ranges from 35% to 52% at 1 month. One of the barriers toward a successful mortality reduction has been delayed and incorrect diagnosis. Due to this detection, classification, and prediction of severity of intracranial brain hemorrhage plays a very important role in order to decrease the mortality rate in patients. In this paper, we propose to build a system that would be able to detect even the smallest of intracranial hemorrhage, classify it correctly into its subtype, and then predict whether or not it's severe. For this, we have proposed three different Deep Learning Architectures: Xception, Xception LSTM, and Xception GRU. In the latter two, we have combined Convolutional Neural Network (CNN) and Recurrent Neural Network (RNN). We have kept the base model (Xception) the same to perform a proper comparison between these architectures and to see which of them will perform better detection, identification, and classification. Furthermore, by using Glasgow Coma Score (GCS) we are predicting whether or not the detected hemorrhage is severe. Additionally, we have also performed Windowing using different windows like Brain Window, Blood/Subdural Window, and Brain Window in order to maximize subtle differences between the features which would further lead to better feature extraction.

Title: PE PACKER TO EVADE ANTIVIRUS

Author: Ashley Dsouza ,Gliston Dsouza ,Ojas Dhere ,Vishal Desai

Project Guide: Ms.Nidhi Gaur

Abstracts: As cyber security is an interesting and demanding field, there is an extreme need for pentesters to test their system, with malicious files, to see how secure their system is. Many black hat hackers try their best to hack a system and get private and valuable information .One of the best ways of verifying the security of the system is to test their application using our product. The current problems with today's open source PE cryptors are that they are outdated and even innocent files are flagged that are packed using a PE encryptor. Other commercial packers are very expensive. This is the reason why we have decided to make a PE cryptor to encrypt a malicious file to bypass antivirus and test the security of the system for pentesters. The purpose of the project is to encrypt an exe file such that it bypasses antivirus. Our project is also useful for anyone interested in malware in general,

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whether it is developing malware or analyzing it. This project aims to develop a packer for PE files that can alter the way of delivering the malware to the systems using encryption techniques and multiple obfuscation procedures. The packer will create a container each time the encrypted file is built and dead code will be inserted into it. It will also create new and randomized control flows by introducing more conditional branches. Which also will create a new import table with randomized functions which will be called during runtime. The input PE will be encrypted with a strong AES key. A seed of the encryption key will be passed to the container which will then be used to derive the actual key at runtime. The packer will be made in C++, using default visual studio console application to build the exe. Built-in stub, each stub will contain obfuscation and other codes that would help in evading anti viruses. Random control flows will be inserted to evade behavioral analysis.

Title: IMPROVISED 3D ROOM MODEL GENERATOR USING MACHINE LEARNING 3D

Author: Ankit Jaiswal, Peter Richie Jacob Munduchirackal, Aishwarya Sreenivasan, Sybil Fernandes

Project Guide: Ms. Varsha Shrivastava

Abstracts: 2D floor plans play a crucial role in designing, understanding, or remodeling the residential spaces. Three-dimensional reconstructions of indoor environments are useful in various augmented and virtual scenarios. Analyzing a floor plan is a complicated task. Due to the lack of engineering standards in creating these drawings, they can have multiple different appearances for the same floor plan. This study attempts to predict Improved 3D Room Model using CNN, Integer Programming. The performance of the system depends on the parameters like floorplan junctions (walls), doors, icons. Algorithms such as CNN, Naive Bayes, Support Vector Machine were analyzed and CNN proved the most efficient algorithm with 94% efficiency.

Title: Recommendations for yield enhancements in semi-hydroponic operations

Author: Jayashree Domala, Kevin Dsouza, Dwayne Fernandes, Manmohan Dogra

Project Guide: Ms. Anuradha Srinivasaraghavan

Abstracts: Some centuries ago, botanists realized that plants absorbed nutrients via a readily available medium - soil, this led to the soil being a reservoir for holding the nutrients for the plant. However, it

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fails to serve the ever-growing needs of the population and has a lot of pitfalls. Cultivation of several crop cycles renders the soil infertile, use of chemical fertilizers and pesticides have adverse health effects, overconsumption of resources leads to a reduction in profits. Population growth has also led to the depletion of arable land. Hydroponics coupled with an intelligent system is a potential solution to the aforementioned challenge. Hydroponics is known for using fewer nutrient materials for plants, it is immune to pests as cultivation is indoors, and it can receive almost everything it needs in the right proportions under a semi-controlled environment. This intelligent system that harnesses the power of modern technology and AI would be able to grow and cultivate crops in a semi-controlled environment using hydroponic techniques. The plant growth and health would be monitored at every time step and the right amount of nutrients would be supplied based on the plant's needs thus optimizing the yield, minimizing the wastage, and maximizing the profits. Health monitoring in the form of disease detection of the plants would also be done leveraging the power of computer vision using deep learning. Apart from this, the system would help guide agronomists or farmers in making informed choices in crop selection to help assist them in receiving a high-quality yield based on season and profitability.

Title: SMART COMPLAINT LODGING AND MANAGEMENT SOLUTION

Author: Akshat Bhagat, Liza Fernandes, Millennia Fernandes, Orvin Fernandes

Project Guide: Mr. Rupesh Mishra

Abstracts: There are various local corporations that provide a wide variety of consumer goods and services to users. These organizations/companies can be service providers or small online e-commerce websites, public departments like Municipal Corporations, Nagar Palikas, and Gram Panchayats to general supermarkets. Local public serving bodies usually have a customer service office that handles such queries through calls which causes redundancy and delay. We have addressed this problem by implementing a smart application named Takrar that gives a manageable and administrable solution to the consumers as well as the companies which handle these kinds of frequent complaints. Our project focuses on creating a digital complaint management system which allows the consumers of such consumer-based organizations, to lodge their complaints in their regional language and also has an option to attach a photo regarding the same. The lodged complaints are automatically classified and pushed to distinct categories the organization has to offer. The data stored is owned and curated by the organization. GPS technology is also used to track location of users. We have built the application for Municipal Corporation with chosen domains for

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demonstration purposes. The application will help to avoid frequent complaint calls and increase productivity and quality of service for the development of the locality by neglecting the barriers between the local service providing organization and people.

Title: QresQ A Disaster Monitoring and Response System

Author: Shubham Raorane , Sharon Elsa Mathew, Chelsea Fernandes, Joshua Fernandes

Project Guide: Ms.Anuradha Srinivasaraghavan

Abstracts: Every year millions of people are affected by different natural disasters, leading to property loss as well as loss of life. Actions by Disaster Management authorities during the crucial time of crisis is time critical and thus it is important that they have the right amount of knowledge and overall picture of the disaster. The project aims to provide a system where details regarding the disasters are plotted, visualized along with the trends or patterns discovered. Data regarding the latest disaster alerts are gathered using scraping frameworks like scrapy along with related news and social media posts are stored. This data is then processed and mined using machine learning models to find the different trends, patterns giving a wider picture of the disaster at hand. The different visualizations are accessible to disaster authorities and citizens via a website. This consolidation, processing and visual representation of disaster related data aids in critical decision making where time and money has to be frugally exploited for saving the valuable lives of people.

Title: CloudCrate - Cross cloud document sharing platform

Author: Manas Acharya, Ritika Bhole, Sahil Nirkhe, Sanket Dalvi

Project Guide: Ms.Pradnya Rane

Abstracts: World is in the middle of major digital transformations. Businesses need to go online for file storage, internal communications, sharing documents with a client or another organization. Currently, the collaboration is done via Email. But it is not ideal for a long-term collaboration where the client is with the company for many years, and a lot of documents have been shared. The organization usually chooses a cloud storage provider and application stack which suits their needs. The companies in collaboration may not have the same cloud storage provider. The mission of CloudCrate is to solve the data transfer problem between organizations. During B2B interactions at many

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instances there involves transfer of hundreds of large files. This process is time consuming as it involves downloading; uploading and local storing of large files. With Cloud Crate our aim is to enable the end user to directly transfer data from the existing cloud storage service to the new cloud storage. This will be accomplished with serverless technology stack thereby reducing functional costs and improving time to market for the product. CloudCrate aims to reduce the difficulty of transferring files between cloud storage systems and providing a platform that makes local storage in this process completely redundant. CloudCrate will allow the transfer Initiator to select files he/she wants to include in the crate. With the help of DMS libraries built by the team CloudCrate can access the files metadata from its respective Cloud Storage Service. Once the crate is built it is stored in CloudCrate's database (Amazon DynamoDB). Now it can be reviewed by a signing authority after which the crate proceeds to the upload stage. All files are taken from Cloud Storage A and moved to an intermediary storage with AWS S3 which can be configured by client or CloudCrate will use its own S3 service.

Title: YOGACHARYA: AN INTELLIGENT SYSTEM TO LEARN AND PRACTICE YOGA INDEPENDENTLY

Author: Ratujith Bangera, Ivan Chettiar, Alisha Jaitu , Sahil Kotian

Project Guide: Ms.Snehal Kulkarni

Abstracts: Yoga is a structured practise of physical exercise, relaxation, positive thinking and meditation aimed at developing harmony in the body, mind and environment. It is a healthy and effective exercise to increase physical activity in order to improve physical and mental well-being, strength, endurance and balance. As a result, over the past few years, it has expanded exponentially around the world. Nowadays, yoga is very popular around the world. People now use their mobile phones to learn how to do yoga poses and start doing that but when doing so, they don't even realise that the yoga pose they do is right or not. However, the issue with yoga is that, like any other workout, it is of utmost importance to do it properly as it can be unproductive and potentially harmful to any incorrect posture during a yoga session. This contributes to the need to provide an instructor to track the session and correct the posture of the participant. Traditionally, yoga is done in a yoga centre/class in the presence of a yoga instructor who can guide their trainees. But these days, with our fast-paced lives, people typically tend to exercise at home and feel the need for an instructor to evaluate their exercise form. People also tend to have a variable time schedule for their work and day-to-day lives that keeps on changing every day, so not all are capable of maintaining a fixed time

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schedule for exercise. Since not all users have access to an instructor or resources, an artificial intelligence-based technology can be used to recognise yoga poses and provide personalized feedback to help people improve by themselves whenever they want.

Title: Analyzing Evolutionary Behaviour using Reinforcement Learning

Author: Shivani Bisht ,Sougat Ganguly, Jerin Varghese, Arbaz Khan

Project Guide: Mr.Shamsuddin Khan

Abstracts: The evolution of living beings on Earth was not a simple or short process, but instead a long, tedious and steady journey of survival and adaptation. This project aims to evaluate the process of evolution of living things like humans in a natural environment. The different factors affecting the survival of creatures are taken into consideration and accordingly the agents learn to adapt to the changing conditions and mutation of genes occur accordingly. The famous “survival of the fittest” theory by Charles Darwin is analyzed to see how a particular genetic species adapts to the environment. Reinforcement Learning is in nature similar to the process of evolution itself as it consists of agents trying to fit themselves to the constant or changing environment. We have used reinforcement learning to make the agent adapt to the environment to survive in the short-term while the environment shows a gradual change in the long-term period.

Title: INDIAN SIGN LANGUAGE COMMUNICATION SYSTEM

Author: Rutuja Rane ,Urvi Shivan ,Kirk Rodrigues ,Om Vinayak Pise

Project Guide: Ms.Ankita Karia

Abstracts: Sign Language detection by technology is an overlooked concept despite there being a large social group that could benefit from it. There are not many technologies that help in connecting this social group to the rest of the world. Understanding sign language is one of the primary enablers in helping users of sign language communicate with the rest of society. Although the sign language is known to hearing-impaired people due to its widespread use among them, it is not known much by other people. Our goal is to create a web application that uses a computer’s webcam to capture a person signing the Sign Language alphabet, and to display the translation in real time as a voice message. As no dataset is available on the internet for alphabets and digits, we created our own

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dataset for these alphabets and digits. We are allowing the user to create and train his own gesture as well for the convenience of the user. They can train words and assign a gesture for those respective words. During the video call once the gesture is performed it is converted to text and audio on the device. For extracting the spatial features from the video stream, we opted for CNN model.

Title: A vision based model using CNN and IOT for auto-driven cars

Author: Sahil Shinde, Vivek Shrivastava, Dharmi Hemani, Naitik Zaveri

Project Guide: Ms. Varsha Shrivastava

Abstracts: With the rapid growth in technology, implementation of self-driving cars has been the largest technological research going on currently. Autonomous cars are the future of the automobile industry. There are various companies like Tesla, Voyage, etc. who are trying to develop a self-driving car which will follow human behaviour and run according to the environment, considering the safety of the passengers. Likewise, we are trying to implement a self-driving Radio Controlled Car (Rc Car) in our project. One of the advanced neural networks called Convolutional Neural Network (CNN) is used along with IOT devices for real-time video analysis. Our model makes use of Raspberry Pi for controlling the Radio controlled car.

Title: Mining Crime Data For Prediction

Author: Prajal Patil, Dipika Surve, Rutuja Chaudhari, Sonali Bhoir

Project Guide: Ms. Snehal Kulkarni

Abstracts: This system will be used for police departments and law enforcement organizations to better understand crime issues and provide insights that will enable them to track activities and predict the likelihood of incidents. Data mining is an approach for analyzing and identifying different patterns, relations, and trends within a data. Most of the system includes visualization about crime rate is increasing or decreasing in a particular region and trends prediction. If the crime has increased necessary measures can be taken by the officials to study why the crime has increased and also how to reduce the crime rate in that region. We also incorporate multivariate visualization, graph mining techniques and trends within these datasets. Machine learning is similar to data mining concepts of

machine learning can be used for better prediction. The data privacy, reliability, accuracy can be improved for enhanced prediction.

Title: ANDROID APPLICATION TO DETECT PARKINSON'S DISEASE

Author: Megha Saboo, Luvima Thommana, Rutika Tuscano, Jerin Ann Abraham

Project Guide: Ms. Anuradha Srinivasaraghavan

Abstracts: Parkinson's disease (PD) is one of the most common degenerative disorders of the central nervous system that affects elderly. Four cardinal symptoms of the disease are tremor, rigidity, slowness of movement, and postural instability. The current diagnosis is based on clinical observation which relies on skills and experiences of a trained specialist. Thus, an additional method is desirable to help in the diagnosis process and possibly improve the detection of early PD as well as the measurement of disease severity. Many studies have reported that the spiral analysis may be useful in the diagnosis of motor dysfunction in PD patients. Therefore, implement a mobile, safe, easy to use, inexpensive, and android application for detection of movement disorders with a comprehensive test analysis according to the indices from Archimedean tracing tasks. A widely used Android mobile operating system, the fastest market share growth among smartphone platforms is chosen as this development platform for early detection of the disease with simple easy to use spiral tests before clinical examination and treatment.

Title: PLAYING 3D GAME USING HAND GESTURES

Author: SUMIT RODRIGUES, SAVIL D'SOUZA, ASTLE DABRE, CHRIST RODRIGUES

Project Guide: Mr. SHAMSUDDIN KHAN

Abstracts: Gestures are a major form of human communication. Hence gestures are found to be an appealing way to interact with computers, as they are already a natural part of how we communicate. A primary goal of gesture recognition is to create a system which can identify specific human gestures and use them to convey information for device control and by implementing real time gesture recognition a user can control a computer by doing a specific gesture in front of a video camera linked to the computer. The system is built to identify specific human gestures, and then use them either to convey information or to control a device. The gestures used have to be intuitive,

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simple and universally acceptable to ensure they are easily adopted by users. This project aims to develop a hand gesture recognition system for playing games. Gesture recognition technology utilizes advanced computer vision and body tracking software to convert simple hand movements into direct keyboard control in any environment.

Title: Quora Duplicate Question Pair Detection Using Semantic Analysis

Author: Jai Mulye, Anshul Pawaskar, Tannmay Redij, Akshata Talankar

Project Guide: Ms.Safa Hamdare

Abstracts: Quora is a question-answer platform where users submit questions and seek relevant answers or opinions. On Quora, people can ask questions and join with others who contribute genuine quality answers and opinions. So, the quality of questions becomes an essential part of the community. There may be people who might ask questions differently of an existing question. To reduce the redundancy on the platform and reduce the manual task of identifying the questions to match the correct answer for same. The task is to identify which questions asked on Quora are duplicates of questions that have already been asked. This can be useful to instantly provide answers to questions that have already been answered. The current Quora questions are merged based on the presence of similar words. Consider the following pair of questions: 1. Is talent nurture or nature? . Are people talented by birth or can it be developed? These are duplicates; they are worded differently, but they have the same intent. Suppose we have a fairly large data set of question-pairs that has been labelled (by humans) as “duplicate” or “not duplicate.” We can then use natural language processing (NLP) techniques to extract the difference in meaning or intent of each question-pair, using machine learning (ML) to learn from the human-labelled data, and predict whether a new pair of questions is duplicate or not. We intend to compare three models to check for best accuracy & further creating a model to detect similar meaning question pairs.

Title: ERP System for Patuck Technical High School & Jr. College

Author: Rexson Thatu ,Ben Jacob Thomas, Emmanuel Thomas, Abhyuday Suresh

Project Guide: Ms.Varsha Nagpurkar

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Abstracts: Our ERP system provides a simple interface for maintenance of different students, departments, faculties and other information. All the colleges usually have a number of departments and educational modules such as courses, seminar hall, etc. Managing all these departments and other modules manually is a very difficult, hard, ineffective and expensive task. So here we propose an ERP system for college. Our ERP system has all the information about the students, teachers, courses with respect to the departments, room numbers for particular subjects and other respected information. The system allows the admin to add students, faculties and any other events. Our system allows a faculty to enter or input student's attendance into the database which can later be viewed by students and faculties. And the teachers can view the students' attendance in the form of graphs and histograms. Teachers can also view how many students enrolled into a particular course. The students can view his/her attendance through a separate student login. The student & Teacher can view the course, instructor & room for a particular subject which can save them a lot of time. The students and teacher can view the fees structure and fee schedule. Our system allows the Teacher and Admin to view the student-guardian details which makes it easier for them to contact in case of some emergency. The time table is then available to be viewed by faculties and students on the web portal. These systems will have an easy user interface and will have a powerful data management system which will make this system very useful.

Title: TEXT TO IMAGE GENERATION USING GENERATIVE ADVERSARIAL NETWORK

Author: Deveshwari Pujari, Alan Parmar, Jhanvi Shah, Raj Rajwade

Project Guide: Ms.Dakshata Panchal

Abstracts: Imagination and visualization, are an import talent that human has down pat throughout a protracted time of evolution. As of nowadays, solely human can produce pictures and paintings from ideas or descriptions. Artists can draw a painting of a flower given an outline "Draw a painting of yellow flower with sharp petal and thorny stem" with none difficulties. Whereas Photographers are still restricted to capture pictures of visual appearing objects present in reality timeframe .With the advent of modern editing tools like photoshop, still photographers are far away from their goal of capturing desired depicted scenarios in their pictures. Currently, this talent is barely restricted to human. Human beings are quickly able to conjure and imagine images related to natural language descriptions. For instance, after you browse a story of sailing ship swinging on stormy sea waves, a picture of a cruise ship in bad weather would possibly pop into your head. Artificial synthesis of images using text descriptions or human cues could have profound applications in visual editing,

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animation, digital design and computer-aided content creation. Books containing only text typically aren't nearly as interesting or exciting as books that use picture illustrations to add more depth, context and detail and offer comfort. Using text to image synthesizer pictorial digital form of every book can be obtained. This project wishes to push the boundaries of state of art algorithms using tweaking of various flavours of Generative Adversarial Networks. The proposed methods are an attempt to create optimizations to the Machine Learning Pipeline of text to image generation.

Title: BLOCKCHAIN BASED FUNDRAISER APPLICATION

Author: Shantanu Phatke, Tarun Moses Akumalla, Mario D'souza, Minal Matre

Project Guide: Mr.Rupesh Mishra

Abstracts: A government or private organization is set up to provide help and raise money for those in need. These organizations today face funding issues because they are not transparent enough about their transactions which causes donors to lose their trust. This also affects the impact of Social projects as they are not able to reach their full potential due to insufficient funding. The cause for drop in these organizations by the public can be uplifted by Blockchain which offers complete transparency in all transactions. A secure, transparent donation system can be built on Ethereum Blockchain Development Platform.

Title: Image Encryption Using Jumbling Salting

Author: SUMEET S.VERMA, SWAPNIL S. SONTAKKE, YASH S. SOLANKI, SURAJ R. MAURYA

Project Guide: MS.PRADNYA RANE

Abstracts: Today almost all digital services like internet communication, medical and military imaging systems, multimedia system requires reliable security in storage and transmission of digital images. Due to faster growth in multimedia technology, internet and cell phones, there is a need for security in digital images. Therefore, there is a need for image encryption techniques in order to hide images from such attacks. In this system we use JS (Jumbling Salting) algorithm in order to hide the original image. Such Encryption technique helps to avoid intrusion attacks. In cryptanalysis, a dictionary attack or brute force attack are the most common ways of guessing the key values. There

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we perform digital image processing, obtain the data that can use the JS encryption algorithm, combine both approaches. It provides a new access to satisfy high level security of interactive information requirements in the fields of aerospace, military, confidential, financial and economic, national security and so on. In order to augment the security aspect regarding images, we are devising JS algorithm which will be responsible for preventing intrusion or brute force attacks on the image. As JS algorithm deals with randomization, the image encryption technique forms a highly secured form of encrypted image.

Title: Dapp for Charity

Author: Vaibhav Rajesh Shah, Shrikanth Mallesh Basa, Jaynish Manoj Morakhia,
Rushabh Abhay Shah

Project Guide: Ms.Varsha Nagpurkar

Abstracts: Our aim is to develop a blockchain based charity application where transactions between a donor and an organisation would be much secure, traceable, transparent and trustworthy. We aim to create a platform where contributors can see the journey of the donation in real time and confirm it's reaching deserving hands or not every transaction done on the application will be recorded on the blockchain making it immutable and reliable. We are going to develop a Decentralized App for charity application that will work as follows:

Multiple NGO's will be listed. Donor need to donate to its favourite NGO in ethers. For Donation the donor will be receiving a receipt of donating which can be useful for its tax reduction. Donor will be able to track the donations which he has made.

Title: Social Distance Detector

Author: Dhruvi Kakadiya, Ritik Lodha, Nehal Panara, Onkar Pednekar

Project Guide: Ms.Nidhi Gaur

Abstracts: Social distancing has been proven as an effective measure against the spread of the infectious

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COronaVirus Disease 2019 (COVID-19). However, individuals are not used to tracking the required 6-feet (2-meters) distance between themselves and their surroundings. An active surveillance system capable of detecting distances between individuals and warning them can slow down the spread of the deadly disease. Furthermore, measuring social density in a region of interest (ROI) and modulating inflow can decrease social distance violation occurrence chance. On the other hand, recording data and labeling individuals who do not follow the measures will breach individuals' rights in free-societies. Here we propose an Python based real-time social distance detection and warning system considering four important ethical factors: (1) the system should never record/cache data, (2) the warnings should not target the individuals, (3) no human supervisor should be in the detection/warning loop, and (4) the code should be open-source and accessible to the public. Against this backdrop, we propose using a web camera and deep learning-based real-time object detectors to measure social distance. If a violation is detected, a non-intrusive audio-visual warning signal is emitted without targeting the individual who breached the social distance measure. Also, if the social density is over a critical value, the system sends a control signal to modulate inflow into the ROI. We tested the proposed method across real-world datasets to measure its generality and performance

Title: Covid-19 Detection and Classification

Author: Preen Kothari, Vinson Noronha, Purva Shah, Adesh Kamble

Project Guide: Dr. Kavita Sonawne

Abstracts: In the course of our research, we have studied the various approaches contributing to the medical field of diseases, especially highlighting the repercussions of false detection of Covid-19 that can lead to more spread of the virus. Among all the possible ways to detect and diagnose the virus, we have chosen the image processing techniques to facilitate the doctors with a second opinion on the currently present testing mechanisms and also determine the severity of the patient. Through the first half of the project, we have thoroughly read research papers related to present work in image-based classification of images and various optimal techniques used for it, and we have also shortlisted the ones to be implemented so as to fulfill the technical specifications and requirements. We have also successfully completed the flow of the entire system regarding image processing and CNN (Convolutional neural networks) techniques. Image pre-processing techniques that will be used are image resizing, segmentation, removing noise and image enhancement AI mainly uses computer techniques to perform clinical diagnoses and suggest treatments. AI has the capability of detecting meaningful relationships in a data set and has been widely used in many clinical situations to

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diagnose, treat, and predict the results. We are working on two models, the first one is obtained for reviewing research papers which uses a CNN architecture for generating feature maps and SVM algorithm for classification of the disease. In the later approach, we plan to use a pretrained model CheXnet and fine tune it to work for COVID-19 X-ray images. In the remainder of our project's duration, we aim to successfully implement these approaches and evaluate based on their performances. As an end result provides a suitable approach for classification of patients based on X-rays in an accurate manner.

Title: WOMEN'S SECURITY APP

Author: Aaron Benny, Niyati Bilurkar, Shalil Dsilva, Jess Dmonty

Project Guide: Mr. Rupesh Mishra

Abstracts: Introduction of Smart phones redefined the usage of mobile phones in the communication world. Smart phones are equipped with various sophisticated features such as Wi-Fi, GPS navigation, high resolution camera, touch screen with broadband access which helps the mobile phone users to keep in touch with the modern world. Many of these features are primarily integrated with the mobile operating system which is out of reach to public, by which the users can't manipulate those features. Google came up with an innovative operation system termed as ANDROID, which is open system architecture with customizable third-party development and debugging environment which helps the users to manipulate the features and to create their own customizable applications. 'Women Safety App' application using Google's Android Mobile Platform is addressed. Many unfortunate incidents have been taking place in woman's case. Problems may come from any direction such as women walking on the road after the work, going to super market or many other reasons for which they go alone.

Title: BLOCKCHAIN BASED SOCIAL NETWORK

Author: Kartik Munjal , Neel Shukla, Brian Soares, Jessica Kinny

Project Guide: Mr. Rajkumar Shende

Abstracts: Social media refers to the mobile or network based application, which supports the creation, exchange and access of user generated content among members. Advances in Block chain

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and distributed ledger technologies are driving the rise of incentivized social media platforms over Block chains, where no single entity can take control of the information and users can receive crypto currency as rewards for creating or curating high-quality contents [1]. As we all know, traditional social media applications are centralized i.e., all the data is stored on a centralized server. This raises concerns of data leak and secret algorithm problems. These problems can be addressed by creating a Decentralized Application using Block chain. A decentralized application for communication and resource sharing is need in today's world, where keeping data on a centralized server can be risky and costly experience. Block chain serves as an immutable ledger which allows messaging to take place in a decentralized manner. Together with Block chain and Decentralized Application, we can create a secure and reliable social network where people can post and get paid in system defined crypto currencies.

Title: MY LAWYER: ANDROID APPLICATION

Author: Shriram Kumbhar, Pradeep Gupta, Vinay Kadhi, Goodlish Mourya

Project Guide: Dr. Kavita Sonawane

Abstracts: The rapid accumulation and slow disposal rate of pending cases has increased the burden on our judicial system tremendously. On the other hand, the cost and inefficiency of dealing with records has crept up slowly over the time and become extremely cumbersome. The problem lies not only in the lack of institutional facilities, but also in the very mindset of the legal community. Today, with the increased level of IT literacy among the general public, there is increased demand on the Government to embrace ICTs at various levels of Courts. The E-Judiciary mission mode project is a much needed judicial reform in India. We have reached a stage where deployment of ICT in the Supreme Court and the High Courts has reached a significant level of maturity. However, the lower judiciary, District and Taluka courts across the country are largely untouched by the ICT revolution.

Title: WELFARE SYSTEM & DISPENSARY MANAGEMENT USING ERP

Author: Ashir Nadar, Swapnil Chaware, Stavan Nemade, Savio Vegnesa

Project Guide: Ms.Priya Chaudhari

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Abstracts: Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often information (on forms) is incomplete, or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores. A significant part of the operation of any hospital involves the acquisition, management and timely retrieval of great volumes of information. This information typically involves; patient personal information and medical history, staff information, room and ward scheduling, staff scheduling, operating theater scheduling and various facilities waiting lists. All of this information must be managed in an efficient and cost wise fashion so that an institution's resources may be effectively utilized. Welfare and Dispensary Management System will automate the management of the hospital making it more efficient and error free. It aims at standardizing data, consolidating data ensuring data integrity and reducing inconsistencies. The Welfare and Dispensary Management System is designed for replacing their existing manual, paper based system. The new system is to control the following information; patient information, room availability, staff and operating room schedules, and patient invoices. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks. A significant part of the operation of any hospital involves the acquisition, management and timely retrieval of great volumes of information. This information typically involves; patient personal information and medical history, staff information, Available rooms, staffs, etc. Welfare and Dispensary Management System scheduling, operating theater scheduling and various facilities wait lists. All of this information must be managed in an efficient and cost wise fashion so that an institution's resources may be effectively utilized. Welfare and Dispensary Management System will automate the management of the hospital making it more efficient and error free. It aims at standardizing data, consolidating data ensuring data integrity and reducing inconsistencies.

Title: VOTEBLOCKS: AN E-VOTING SYSTEM USING BLOCKCHAIN

Author: Aston Lopes, Lydia Saju, Ryan Crasta, Talitha Fernandes

Project Guide: Ms.Priya Karunakaran

Abstracts: Voting is the method by which a group of people or the citizens of a whole country express their individual choice and make a collective decision to elect a representative. In a

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democratic environment such means of election becomes vital to preserve the integrity of the governing legislation. Traditionally there have been many modes by which the process of voting has been carried out. But such modes have shown serious drawbacks in the domain of security. With the rise in technological advancements it is possible to overcome them and build a secure system. By this project we propose to build a system using the blockchain technology to securely cast votes online. Manipulation of a single vote demands the manipulation of the whole chain which is practically impossible due to very high computational power. The processing power can be harvested from the voters themselves. Blockchain networks lack centralized points of vulnerability that computer crackers can exploit; so, no centralized point of failure. Vote privacy and integrity can also be maintained. Implementation of such a model will decrease the cost of a nationwide election too. This will also ensure better voter turnout.

Title: Cloud Based Secure Data Storage

Author: Framin Carvalho, Liston Lopes, Preet Fernandes, Brijoy Lopes

Project Guide: Ms. Jayashri Mittal

Abstracts: With the advance of cloud computing technology, more economic benefits have been brought to users. While satisfying the needs of users, cloud computing brings its advantages-low costs, rapid deployment and flexible scale adjustment into full play. Increasing numbers of data is stored in all kinds of networks with more and more companies and people using cloud computing services, thus putting severe challenges on user data security and availability. Under these circumstances, we analyzed the issues of data security on cloud based systems. The security challenges cloud computing has brought to us are how to prevent user data from leaking, and how to guarantee data safety in case of data breaches occurring on the system. The challenges include the security of user data and the privacy of users. In the proposed system, an enhanced encryption method with Diffie-Hellman algorithm is used for protecting the files on insecure communication paths. MD-5 is used for integrity. The cloud used for storage is Amazon Web Services S3 (AWS S3) i.e. Amazon Simple Storage Service. Strategies on secure data transmission and storage based on cloud computing, including encryption and decryption processing, were also implemented. Measures were also taken to ensure the data integrity of encrypted data on the cloud

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Title: BLOCKCHAIN AS A SERVICE FOR ORGANISATIONS

Author: ROHIT D'ALMEIDA, JAGJIT SINGH PURBA, AJINKYA CHAVAN

Project Guide: Ms.Vincy Joseph

Abstracts: Generally, the process of organ donation involves surgical removal of organs from the donor, their preservation in a protective environment and the surgical transplantation to the recipient. India is one country in dire need of organ transplants since lakhs of sufferers await availability of organs and many of them succumb to death. Hence it is established that organ transplantation is an extremely crucial and life saving process. Traditional systems of organ donation that are in place follow centralised approach of storing and accessing data of applicants which is vulnerable to loopholes, attacks and manipulation. The systems in place lack transparency, security, tamper proof mechanism. To overcome these drawbacks, our system of Organ Donation Management has introduced the revolutionary technology of blockchain into the picture. This project aims at automating the donor to recipient match making process completely by eliminating human influence. The admin entity has privileges to add doctors and hospitals to the database, link doctors to hospitals, assign hospitals to donors and patients for transplantation procedure. Admin can also view a detailed list of available donors and patients, list of registered hospitals and approved doctors, list of doctor-hospital pair sport assignment, list of doctor-donor and doctor-patient pairs after being assigned by the admin. Admin is allowed to request the system for match generation but not participate in it. Admin is allowed to view a list of transactions on the blockchain which represent the match details in encrypted format, thus increasing security and anonymity.

EXTC

ABSTRACTS

Title: Helmet detection using YOLO Algorithm

Author: Chirag Joshi, Savio Sebastian, Karan Nachankar, Moksh Shah

Project Guide: Mr.Santosh Chapaneri

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Abstracts: A driver must obtain information about road conditions during driving. Drivers will however not note several data at the same time, which certainly raises certain safety risks. This project designs a helmet detection system based on the You Only Look Once (YOLO) algorithm, taking this issue into account. This system's underlying core algorithm adopts the YOLO version3 (v3) architecture with the best end-to-end network comprehensive detection efficiency. This is the primary point of this project. The Map of recognition were obtained by two different classifier. It is observed that YOLO v3 gives better mAP as compared to YOLO v2. The mAP obtained by YOLO v3 is 66.28% and by YOLO v2 is 63.33%

Title: Plant Disease Detection and Classification using Deep Learning

Author: Saurabh Dandekar, Joel Dcunha, Tanmay Joshi, Aman Nai

Project Guide: Mr. Vaqar Ansari

Abstracts: The timely and accurate diagnosis of plant diseases plays an important role in preventing the loss and reduced quantity of agricultural products. In order to solve such problems, methods based on deep learning can be used. Over the years, deep learning, which is widely used in image processing, offers many new applications related to agriculture. In recent years deep learning methods have been shown to outperform previous state-of-the-art machine learning techniques, with computer vision being one of the most important cases. Convolutional neural network models can be developed to perform plant disease detection and diagnosis using images of healthy and diseased plants, through deep learning technologies. Training of the models can take place with the use of an open database of 60,000 image examples, containing 14 different plants in a set of 38 classes of plant disease combinations, including healthy plants. In this study, deep feature extraction from various fully connected layers based on pre-trained deep learning architectures can be done. Deep feature extraction depends on extracting features learned from a pre-trained convolutional neural network. These features are of essence to train machine learning classifiers. This technology can take shape and help many farmers, researchers and educational institutions in their quest for quality products while keeping losses at bay.

Title: Detection of Pneumonia in Chest X-Ray using Transfer Learning Based Approach

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Author: Zuber Ansari, Gaurav Bavdane, Neha Bhujbal, Nameera Shaikh

Project Guide: Ms.Pallavi Patil

Abstracts: Pneumonia is a life-threatening infectious disease affecting one or both lungs in humans. According to World Health Organization (WHO), one in three deaths in India is caused due to pneumonia. Early diagnosis can provide a significant chance for correct treatment and survival. Deep Learning techniques during the last few decades had tremendous impact on various fields be it image recognition or speech recognition. It is also highly relevant for medical imaging. There is lack of data availability as some of the medical data is subjected to patient privacy issues while the outbreak of a new disease also arises the same issue. Current trend in deep learning technique involves training a model over large dataset and exposing it for testing but this convention might not hold against real world applications where uncertainty is common syndrome. Thereby the proposed method, use of transfer learning technique, serves a multi prong solution as it need not require data from the same feature space. Particularly training a large CNN architecture (ResNet50) over a large ImageNet Dataset then transferring the weights of initial layer and fine-tuning the last layers will result in a higher precision and recall value and faster performance in terms execution time as compared to existing methods. In this work, the collected dataset is passed through six different preprocessing steps before it is fed to the ResNet-50 module, in order to improve the validation and classification accuracy of the proposed model and achieve remarkable test accuracy. The same methodology will also hold good for any detection and localization of abnormality in Medical Images (eg. classification of Covid-19) with consistent performance which involves even multi-class classification problems

Title: Automatic Motorcyclist Helmet Detection using Deep Learning

Author: Yash Desai, Yash Dhepe, Arihant Jain, Harris Pereira

Project Guide: Mr.Vaqar Ansari

Abstracts: Motorcycle is another major mode of transport after the public modes in countries like India with high population density. In India, 47% of the households own a motorcycle. It is observed that out of 10 only 5 or 6 of them wear a safety helmet while riding. Using safety helmets can reduce the risk of having head or severe brain injury. It is a legal and valid rule to be obeyed by every motorcyclist to wear a safety helmet but still some people neglect these basic rules by posing senseless reasons such as they are only travelling a short distance or they ride carefully avoiding accidents. As it is not possible for each Traffic Inspector to monitor every possible rider, so there is

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need for automation in this domain to easily detect them. So, to mandate this, the system have been developed which is based on Python libraries. The use of Transfer Learning has been done in the proposed design to make the system more efficient. The system will have minimal complexity, less prone to error, very minimal time for training, consuming minimal storage and as well as portable (Can be installed on any CCTV camera). This system may definitely help to reduce the number of deaths due to motorcycle accidents, also helpful for Police Department to respect their laws, encouraging and spreading awareness about wearing Safety Helmets while riding a Motorcycle.

Title: Breast Cancer Analysis

Author: Ronil Angane, Gaurij Bhogale, Sejal Lanjekar, Rutvika Sawant

Project Guide: Dr. Ravindra Chaudhari

Abstracts: Breast cancer is a crucial reason for deaths in females. Breast cancer affects one out of eight females worldwide. Early recognition of this disease with the assistance of mammography reduces the death rate. As the modern science is improving many researches and techniques have been emerged to eradicate this dreadful disease. Deep learning is an approach being utilized and requested by radiologist that assist them in making an accurate diagnosis and helps to improve outcome predictions. This research includes a new approach of breast cancer detection using convolutional neural network for mammogram imaging system to classify mammogram image into benign (non cancerous) and malignant (cancerous). For this a custom model is created which is in resemblance with the VGG 16 model. A series of mammogram images are used to carry out preprocessing. In order to get the better results and avoid overfitting we take the benefit of preprocessing methods containing cropping, augmentation and balancing image data. Feature extraction is done through a CNN and classification is performed in fully connected network. The outcome described here demonstrates that the accuracy rate of the proposed automated method is better than other existing methods. Experimental results shows the accuracy of 99.45% on training data. Classification report gives the prediction accuracy of 99% with good precision, recall and f1 score.

Title: Design of Multiband MIMO Antenna with High Isolation for Wireless Applications

Author: Aditya Kolte, Toufeeq Shaikh, Vinod Sharma, Karthik Shetty

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Project Guide: Ms. Jovita Serrao

Abstracts: This project, Firstly Simple and compact novel-shape planar monopole antenna for multi-band operation such as Digital cellular system (DCS), Bluetooth, and ultra-wide-band (UWB) is Simulated. Simulated antenna comprises of circular ring with extended rect-angular monopole antenna in one of the arms of the circular ring and inverted L-shape monopole antenna at the centre of the structure is placed to generate multiple resonances at different frequencies. In this structure, Bluetooth frequency band generates due to extended rectangular patch, DCS band by inverted L-patch, and UWB bands due to circular ring. Easily available FR4 substrate with permittivity 4.4 and loss tangent 0.02 is used for fabrication with antenna dimensions (35.5 × 24.5 × 1.6) mm³. Antenna structure is fed through 50 Ω micro-strip line and terminated by SMA connector. Measured return loss of the antenna is 10 dB with effective control over the three operating frequency bands. The simulated antenna will be converted into multi-input multi output (MIMO) antenna by placing a mirror image and extending ground plane. In addition, some selected key parameters which affect the impedance bandwidth are analysed and results are discussed.

Title: Multiband Reconfigurable Antenna for Wireless Applications

Author: Darsh Agrawal, Dhruval Bhau, Jonathan Almeida, Siddhi Bagwe

Project Guide: Dr. Anjali Chaudhari

Abstracts: With the phenomenal advancement in Electronics, achieving compact size, cost efficiency and battery life has become very important. This paper presents frequency reconfigurable antenna which is compact in size and cost efficient. The antenna is designed and optimized to cover various wireless applications. The proposed antenna has four RF pin diodes, which is used as a series switch for frequency reconfiguration. Frequency reconfigurable antennas can adjust their frequency of operation dynamically. They are particularly useful in situations where several communications systems converge because the multiple antennas required can be replaced by a single reconfigurable antenna, hence reducing its cost and size. The antenna that we fabricated works on the frequency of 1.53GHz-1.66GHz and 2.4GHz-2.47GHz. The antenna parameters such as VSWR, S₁₁, gain and radiation pattern are simulated. The analysis are performed using Ansoft HFSS v13.0 software.

Title: Reduction of SAR in Antennas using EBG Structure

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Author: Bhavesh Dalvi, Soham Dambal, Parth Mehta, Abel Joseph

Project Guide: Dr. Uday Pandit Khot

Abstracts: The main aim of this proposed work is to have an insight into the various issues caused by high level of specific absorption rate (SAR) on human body and also in free space . To protect a human head from exposure to electromagnetic fields and comply with exposure guidelines is the ideal aim of this proposed work . Various antenna configurations and designs will be referenced in the work. Keeping in mind the various requirements , parameters, and the main agenda of the work , an appropriate model would be chosen to work on with. The antenna designed would be used to achieve high gain, end fire radiation pattern, and decreased path loss. The antenna would be used to reduce the specific absorption rate (SAR) while increasing the antenna gain when placed on human body. The proposed work furthers towards the design and analysis of the antenna model. Antenna gain has been increased by 42.59 percent There is a reduction of 42.59 percent in the SAR value on different parts of the human body when backed without EBG and with EBG.

Title: Comparison of Anomaly based Intrusion Detection System

Author: Neha Parepalli, Priyanka Sawant, Nityaprakash Soni

Project Guide: Ms.Monika Cheema

Abstracts: As technology is developing day by day and the number of networked digital devices is increasing manifold, the number of intruders and the type of attacks are also increasing. Signature-based IDSs are unable to detect novel attacks if no signature exists to match an attack type. However, IDSs that capitalize on machine learning methods helps to overcome this limitation. Hence this work is focused to use anomaly based techniques with machine learning and deep learning techniques and then compare the results of these techniques considering various parameters for evaluation such as accuracy, precision, loss.

Title: PERFORMANCE ANALYSIS OF ROUTING PROTOCOLS IN VEHICULAR AD HOC NETWORKS

Author: Jay Makwana, Aaron Lewis, Bhavya Kavathia

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Project Guide: Ms. Monika Cheema

Abstracts: A Vehicular Ad-hoc Network (VANET) is a system of nodes (vehicles) that are being connected with each other by wireless technologies. Usually, the nodes are moving with very high speeds and, thus, the topology is unpredictable and frequently changing. Such networks can be stand alone and making paths along vehicles or may be connected by an infrastructure internet. System characteristics such as multi-hop paths, node mobility, large network size combined with device heterogeneity, bandwidth and unlimited battery power make the design of routing protocols a major challenging. Many routing protocols have been proposed for VANETs. The available routing protocols are Ad-Hoc On Demand Distance Vector Routing (AODV), Optimized Link State Routing (OLSR), DestinationSequenced Distance-Vector (DSDV) and Dynamic Source Routing (DSR) that have been proposed for Mobile Ad-hoc Networks (MANETs). These routing protocols are proposed with the purpose to maximize the throughput and minimize the delay packet and packet loss. In this project, we will implement and study the performance protocol for VANETs by employing NS-3 simulator.

Title: NEXT GENERATION AUTOMATION IN AUTOMOTIVE SYSTEM

Author: PRATIK BHOSALE, OMKAR CHAVAN, ADITI KHANIVADEKAR

KARISHMA OTAWKAR

Project Guide: Ms. SAVITA KULKARNI

Abstracts: Modern automotive electronic control technology is the integration of electronic technology and automotive mechatronics. It is increasing widely used in the car. Application and development of electronic technology and electronic car will drive into a new era, not only in the 21st century car traveling on the highway, also flew on the information superhighway. Due to increasing usage of IoT in automotive Embedded Systems, Smart Car application has gained enormous attention among the users. It's Difficult to trace missing vehicles in metropolitan cities or any theft activities when the Owner is not around the vehicle. This paper provides an overview of a method used for image capturing and location tracking followed to trace the missing vehicle or malicious activity in the vehicle. We introduce the concept of automotive electronic control technology, modern

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automotive electronic control system applications and the development of feelings of automotive electronic control technology.

Title: Vital Measuring Machine

Author: Oam Pandya ,Riddhi Pandya ,Anuja Patel, Atharva Sathe

Project Guide: Ms.Savita Kulkarni

Abstracts: In these difficult times, the burden on our healthcare system is immense. Not every patient can get around the clock medical attention and support. In these circumstances, the technology, called the Internet of things, will be helpful. We proposed a system that consists of two parts, a device which will take which will collect your vitals, namely heart rate, temperature, and oxygen levels along with a sensor that determines whether social distancing from an infected person is maintained or not. In the second part, this data is transferred to a secure database where it can be accessed through the internet. The data is updated on a predetermined schedule and can be accessed with a user login. If any abnormality occurs, a notification will appear to alert the patient as well as the doctor. Such a system will not only ensure the safety of medical workers but also of the patients. This type of system can also help the government in securing beds and medical attention for patients who experience grave complications. This technology is cheap, remote, and reliable. Internet of things, when implemented correctly, has the potential to revolutionize the healthcare system as we know it.

Title: AgriTech: Framework for Smart Agriculture

Author: Tanay Dangaich, Vishal Karkera, Anirudh Kulkarni, Manasi Odassery

Project Guide: Ms.Jovita Serrao

Abstracts: Existing traditional method of soil testing is either expensive or time consuming. The concept of visible near infraRed is a way to achieve a cost-effective model while takes minimum amount of time needed for soil analysis. This will help in maintaining the soil quality and also protect the consumer for saving money and time. The project aims to implement a module which be measuring the moisture content, the pH level, the temperature of the soil, and basic soil nutrient contents such as nitrogen, phosphorus and potassium level. Using the VIS-NIR concept, we are making an optical transducer which will tell about the NPK constituents of a soil.

Title: IOT Based Residential Convenience System

Author: Devashish Gawde, Abhishek Chavan, Vidip Kamdar, Parth Mistry

Project Guide: Dr.Gautam Shah

Abstracts: This work presents the use of the Internet of things (IoT) applied to a control of an actuator that works through temperature and approximation values. The proposed technology consists of three principal parts: Hardware (Raspberry Pi 3), a virtual machine installed in "the cloud" and a mobile device with a Global Positioning System (GPS) application. A system was developed in the Raspberry Pi 3 that is connected to Cloud which monitors the external position and is connected to a mechanical actuator. The mobile device consists of an Android application based on GPS position which is able to send a positional message to the cloud that is stored on a database. A cloud development records the latest position which are then compared to a predetermined threshold value in development. Through the logical operation And between the comparisons of the Voice Command and position values with the threshold values, the decision to switch the actuator on or off is taken. The system performs the storage and comparison of the cloud data each time interval ($t = 15$ seconds) predetermined in the development. PIR sensor is used to control the appliances automatically by detecting the movement in the room. The proposed system was validated through a case study.

Title: Hardware Implementation of FFT Using Polyphase Decomposition

Author: Kaushal Bhat, Moksha Mehta, Joshua Mendes, Navin Nadar

Project Guide: Dr.Ravindra Chaudhari

Abstracts: FFT is the most fundamental unit of any signal processing system. Performance characteristics like speed, computational complexity, power efficiency and consumption are dependent on FFT. Optimizing FFT algorithm plays a significant role in optimizing the signal processing system. Hardware Implementation of FFT follows strict mathematical sense and hence has many problems with its VLSI realisation. In this report, we propose a new technique for FFT implementation to reduce computational complexity and at the same time not giving up on speed. We suggest an alternative algorithm using the principle of decimation, taken from Polyphase

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Decomposition which is a concept mainly used in multi-rate signal processing. Polyphase decomposition when paired with a suitable architecture reduces the computational complexity. The proposed work can also calculate any "even-length" FFT within a specified range which depends on the decimating factor. We make use of MDC Architecture to implement the proposed design idea because of its higher throughput.

Title: Theft Detection Using Smart Surveillance

Author: Janvi Kotkar, Sneha Kweera, Niyati Makwana, Vaibhavi Naik

Project Guide: Ms.Snehal Lopes

Abstracts: Deep Learning is a part of Artificial Intelligence which is involved in emulating the learning approach like human beings utilize to get different types of knowledge. For the last two decades, analyzing videos, a part of deep learning, has been one of the most basic problems of computer vision and multimedia analysis, and the problem somehow still persists. The job is very challenging as the video contains a lot of information with large differences and difficulties. Human supervision is still a must in all surveillance systems. New advancements in computer vision is observed as an important trend in all surveillance systems and have led to credible efficiency gains. For tracking of thieves, we propose CCTV-based theft detection. We use image processing to detect theft and the motion of the thieves in CCTV footage, without the use of sensors. This system focuses on object detection as well. The security personnel will be alerted if any human individual is found suspicious of committing robbery using Real-time analysis of the movement from CCTV footage and thus gives a chance to avert the same..

Title: Environment Adaption technology for indoor large scale farming

Author: Ankita Jeevan Chavan, Shivam Mainbhadur Gupta, Devesh Nandkishor Gujar ,Chirag Bhupatbhai Seta

Project Guide: Ms.Savita Kulkarni

Abstracts: It is a well-known situation that nowadays people are opting for organic food grown in an ecological way to reduce carbon footprint and damage to the environment. Ecology is suffering because of the use of pesticides and crop protection chemicals due to the damage caused to the flora

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and fauna in the environment where the crops are being cultivated. Combined with this, people are trying to get the freshest vegetables, fruits, and even flowers. Because of these situations, it is more common nowadays to find people trying to grow their food, or plants that they can't get in the place they live. Vertical farming is the practice of producing food and medicine in vertically stacked layers, vertically inclined surfaces or integrated in other structures such as in a skyscraper, used warehouse, or shipping container, terrace etc. The project implements optimum uses of resources such as land and water so that maximum output can be achieved to overcome the food scarcity in future.

Title: Design of Microstrip MIMO antenna with reduced mutual coupling

Author: Tejas Ghag, Neil D'souza, Punit Dhole, Aditya Kamble

Project Guide: Dr. Uday Pandit Khot

Abstracts: The main aim of this project is to design a periodic defected ground structure (PDGS) to reduce mutual coupling between the antenna elements. The antenna elements are placed on same plane and also work on the same frequency band with center frequency of 2.57 GHz. The distance between the centers of the two antenna which are in same plane, is decided to be 50 mm. Selection of appropriate structure to place between the antenna elements is to be decided to reduce the mutual coupling of the antenna elements.

Title: Design of Triband MIMO Antenna with high isolation

Author: Aniruddha Nevgi, Hemant Maurya, Shivam Singh, Saurabh Rawool

Project Guide: Dr. Anjali Chaudhari

Abstracts: A triband MIMO antenna with high isolation is proposed. The proposed MIMO antenna system consists of two symmetric antenna elements designed to operate over 2.5, 5.2 and 6.4 GHz frequencies. High isolation is achieved by reducing mutual coupling between the antenna elements using isolation techniques such as extended ground plane (EGP) and ground slots (GS). The antenna can be used for various wireless applications like Wi-Fi, Bluetooth, WiMAX and WLAN.

Title: Design and Development of a Control panel for Bucket Elevator

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Author: Ramesh Chaudhary, Kaustubh Joshi, Aditya Gholkar

Project Guide: Dr. Deepak Jayaswal

Abstracts: 'Time is money and accuracy builds credibility'. This project deals with the 'Design and fabrication of the control unit of a z- type bucket elevator'. The sole purpose behind this machine was to eliminate the strain caused to the workers responsible to lift up heavy loads, carry them and then turn them over into a hopper. The existing process thus was very much tiring and resulted in a slower production. This led to the fabrication of a z-type bucket elevator whose driveway is coupled with a 3-Phase Induction motor which will be driven using the technology of Variable Frequency Drive. There are several different sensors that are needed to be interfaced which will always ensure that adequate payload is added to each basket. The most challenging part is to ensure that the system comes to an immediate halt as soon if there is any malfunctioning in the drivetrain of the system.

Title: Detection of COVID-19 through chest X-ray using WGAN-GP

Author: Saurabh Mangalvedhekar, Karthik Manthitta, Hitarthi Mokashi, Aditya Nayak

Project Guide: Mr.Santosh Chapaneri

Abstracts: Generative Adversarial Networks (GAN) are powerful generative models but have many drawbacks related to convergence and mode collapse and suffer from instability. The proposed plan is to apply Wasserstein GAN (WGAN) with Gradient Penalty (GP) in order to expand the database of chest X-ray images and produce high quality plausible images, as WGAN has been proven to have better stability and efficiency in comparison to its predecessors. These images would then be given to a CNN which would then classify the images and indicate the probable presence or absence of COVID-19 in the patient.

Title: Chatbot In Banking Domain

Author: Saisha Vartak, Neil Zaveri, Shefali Tandel, Mrunmay Thakur

Project Guide: Ms.Pallavi Patil

Abstracts: In the modern Era of technology, Chatbots are the next big thing in the era of conversational services.Chatbots are replacing some of the jobs that are traditionally performed by

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human workers, such as online customer service agents and educators. Chatbots are intelligent systems that understand a user's natural language queries and respond accordingly in a conversation. From the initial stage of rule-based chatbots to the era of rapid development in artificial intelligence (AI), the performance of chatbots keeps improving. Chatbots are an effective solution for cutting costs and that is why there has been an increasing hype and usage of chatbots nowadays. Banking being one of the most important fields to be looked upon in recent times, a chatbot in this domain has been decided to be implemented. A Good Chatbot is the one which can act as a guide on your spendings and saving. The main goal of the chatbot will be to minimize the time over customer care and satisfy the basic queries of people quickly. RASA software will be used to implement the chatbot, which is an open-source conversational AI and a tool to create basic chatbots.

Title: Malware Detection and Classification using Deep Learning

Author: Praful Thangappa, Amarjit Singh, Rahul Shirsat, Sahil Surve

Project Guide: Mr. Kevin D'souza

Abstracts: As a major threat to cyber security, malware has been increasingly damaging national security. Malwares have become a significant threat to computer systems and recently, a massive growth has been observed by experts in the number and sophistication of new malwares. Therefore, the task of malware detection and classification is of utmost importance. Recently, image processing techniques along with machine learning techniques have been explored by researchers for visualization and classification of malwares.. Malware binaries are visualized as gray-scale images with the observation that for many malware families, the images belonging to the same family appear very similar in layout and texture. Motivated by this visual similarity, a classification method using standard image features is proposed. Malware database that we use consists of 10181 total images out of which 842 are normal executable files and remaining are Malwares.

Title: Facial Emotion Recognition

Author: Shubham Patil, Kalpesh Rane, Ronil Rodrigues, Aditi Shirke

Project Guide: Mr. Kevin D'souza

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Abstracts: The use of machines to perform different tasks is constantly increasing in society. Providing machines with perception can lead them to perform a great variety of tasks; even very complex ones such as elderly care. Machine perception requires that machines understand about their environment and interlocutor intention. Recognizing facial emotions might help in this regard. During the development of this work, deep learning techniques have been used over images displaying the following facial emotions. In this research, a pure convolutional neural network approach outperformed other statistical methods results achieved by other authors that include feature engineering. Utilizing convolutional networks involves feature learning; which sounds very promising for this task where defining features is not trivial. Moreover the network was evaluated using some selected emotions and the accuracy of the network varied vastly, though the results achieved were not impressive but, the evidence gathered points out deep learning might be suitable to classify facial emotion expressions. Thus, deep learning has the potential to improve human-machine interaction because its ability to learn features will allow machines to develop perception, by having perception, machines will potentially provide smoother responses, drastically improving the user experience.

Title: Genre Based Hit Song Prediction

Author: Pravin Yadav, Karthik Iyer, Sagar Vora, Omprakash Mandal

Project Guide: Dr. Deepak Jayaswal

Abstracts: Record companies invest billions of dollars in new talent around the globe each year. Gaining insight into what actually makes a hit song would provide tremendous benefits for the music industry. In this research we tackle this question by focusing on the genre based hit song prediction problem. Being able to predict whether a song can be a 'Hit' has important applications in the music industry. Although it is true that the popularity of a song can be greatly affected by external factors such as social and commercial influences, to what degree the audio features computed from musical signals (whom we regard as internal factors) can predict song popularity is an interesting research question on its own. Motivated by the recent success of deep learning techniques, we attempt to extend previous work on hit song prediction by jointly learning the audio features and prediction models using two different approaches. We experiment with Feature Based Model using Spotify API features and Tag Based MusiCNN Transfer Learning Model that takes the primitive and raw Log Mel-Spectrogram as the input for feature learning.

Title: Emotions Received by Music

Author: Varsha Rana, Kaushik Shinde, Virendra Wadher

Project Guide: Dr Deepak Jayaswal

Abstracts:

Music emotion recognition (MER) field rapidly expanded in the last decade. Many new methods and new audio features are developed to improve the performance of MER algorithms. However, it is very difficult to compare the performance of the new methods because of the data representation diversity and scarcity of publicly available data. In our paper, we adapt triplet neural networks (TNNs) to a regression task, music emotion prediction. Since TNNs were initially introduced for classification, and not for regression, we propose a mechanism that allows them to provide meaningful low dimensional representations for regression tasks. We then use these new representations as the input for regression algorithms such as support vector machines and gradient boosting machines. To demonstrate the TNNs' effectiveness at creating meaningful representations, we compare them to different dimensionality reduction methods on music emotion prediction, i.e., predicting valence and arousal values from musical audio signals. Our TNN method outperforms other dimensionality reduction methods such as principal component analysis (PCA) and autoencoders (AE). This shows that, in addition to providing a compact latent space representation of audio features, the proposed approach achieves higher performance than the baseline models.

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Title: Data Transmission using LI-FI

Author: Shrutee Khot, Muthulaxmi nadir, Anvit Surve , Sanket Wadodkar

Project Guide: Dr. Kevin Noronha

Abstracts: Imagine a world where every light could connect you to the internet. Lights that illuminate our offices, homes, cars and our streets also connecting us to data and powering our growing demand for connectivity. Whether we're using wireless internet in a coffee shop, stealing it from the guy next door, or competing for bandwidth at a conference, we have probably gotten frustrated at the slow speeds we face when more than one device is tapped into the network. As more and more people and their many devices access wireless internet, the clogged airwaves make it difficult to latch on a reliable signal. Hence, the focal objective of this paper is to develop improvements in the modern communication as due to the emergence of wireless technology, there is a vast growth in the devices with the need to access the internet. Congestion is the major evident complication created due to it. It is the need of the hour to find another means of communication. Light fidelity is such a technology which can be used as an alternative as it uses visible light communication in the electromagnetic spectrum. It has high durability, high data transmission rate with its additional quality of long-life expectancy which is an appreciative quality of the Light Emitting Diodes (LEDs) which are being used here as the source of light. In the proposed project, a Light Fidelity (Li-Fi) model based on visible light communication technique is used to transmit the data in order to demonstrate the use the case study of Light Fidelity technology. Here, two types of data transmission i.e. Audio and text is carried out using Li-Fi. We demonstrated that our system can transmit audio and text data wirelessly via the light.

Title: Implementation and Performance Analysis of SDN Firewall on POX Controller

Author: Avijit Paul, Parbat Singh Rajpurohit, Divolka Sawant, Kanhaiya Jha

Project Guide: Dr. Kevin Noronha

Abstracts: Software-Defined Networking (SDN) is an emerging architecture that is dynamic, manageable, easily operatable and adaptable for today's application in Networking. SDN makes networks wholly controlled through software applications and gives a hope to change the limitations of current networks infrastructures. In SDN, the data plane and the control plane are separated. The functionality of a device's data plane is dependent on instructions coming from the centralized

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controller's control plane. This simplified the control of networks. In this project, we are dealing with the most concerning problem for a network that is Security. We are implementing firewall functionalities by writing some firewall applications that run on top of pox controller. A firewall is a network security device that monitors incoming and outgoing network traffic and permits or blocks data packets based on a set of security rules. Our firewall filters packets based on their headers and matches them against the predefined policies. If the matching is found, a packet is blocked otherwise the packet is forwarded.

Title: Performance Evaluation of Coded Index Modulation for Wireless Networks

Author: Hiteshree Panchal, Rachit Poojary, Dhariya Solanki, Kaustubh Tamhankar

Project Guide: Ms.Jayasudha Koti

Abstracts: The increasing demand for higher data rates, better quality of service and fully wireless networks lead the researchers to seek new solutions beyond 4G wireless systems. It is anticipated that 5G wireless networks will achieve ten times higher spectral and energy efficiency than current 4G wireless networks and will support data rates up to 10 Gbps. Orthogonal Frequency Division Multiplexing (OFDM) is an efficient modulation format used in modern wireless communication systems. The coding pattern which can be implemented in OFDM systems, Convolutional Coding, is a widely used error-correcting coding method in which the message comprises of data streams of arbitrary length and a sequence of output bits are generated in an encoded format depending on the code rates and generator polynomials used. In coding theory, a generator matrix is a matrix whose rows form a basis for a linear code. In our project, we have implemented the OFDM system with different code rates such as $1/2$ and $1/3$, wherein, we have used a different generator polynomial for each rate as well. Finally, we aim to compare the Peak to Average Power Ratio (PAPR) for each case. The PAPR is the relation between the maximum power (peak value) of a symbol in a given OFDM signal divided by its average power (mean value). In simple terms, PAPR is the ratio of peak power to the average power of a signal.

Title: A Load Balancing Strategy for SDN Controller based on Distributed Decision

Author: Arpan Lad, Kartik Naik, Shubham Naik

Project Guide: Mr.Ramjee Yadav

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Abstracts: Software-Defined Networking (SDN) enabled by OpenFlow, represents a paradigm shift from traditional network to the future Internet. Replicate or distributed controllers have been proposed to address the issues of availability and scalability that a centralized controller suffers. However, it lacks a flexible mechanism to balance load among distributed controllers. To address this problem, we propose DALB a dynamic and adaptive algorithm for controller load balancing totally based on distributed architecture. This algorithm is running as a module of SDN controller. On one hand it adopts an adjustable load collection threshold so as to reduce the overhead of exchanging messages for load collection, and on the other hand it can make policy and election locality in order to reduce the decision delay caused by network transmission. In this project we are planning to create a prototype system on floodlight to demonstrate our design and test the performance of our algorithm.

Title: Implementation of Firewall and Controller Redundancy in Software Defined Networks

Author: Starlit Rachael Geejay, Anandakrishnan Vadakkathyl, Safal Vadassery, Vinit Yengantiwa

Project Guide: Mr.Ramjee Yadav

Abstracts: In recent years, software-defined networking (SDN) has evolved to replace the traditional design of the current network. SDN is the emerging network architecture which splits the function of networking devices into two groups, namely the control plane and the data plane and is controlled by the centralized controller using the OpenFlow Protocol. Even though the new network architecture has simplified the control of networks, one of the fundamental issues exposed due to the new architecture of SDN is the security risks. Network Firewalls are one of the most important components used in networks. It helps in securing traffic and enforces security policies. The speed of the firewall is a hindrance, often firewall link speeds are slower than the supported network interface and can cause the traffic burst from the host to be buffered until packets are processed. To overcome these issues, the aim of our project is to implement some firewall functionalities on SDN to create duplicate instances of the firewall with the help of Controller. We have selected Ryu, a python-based SDN controller and Open vSwitch. To create the SDN network topology, we have used Mininet. Iperf has been used to analyze the performance of firewall module.

Title: AdmiZen: A Chatbot for Admission Process using Natural Language Processing

Author: Sanket Mistry, Veena Sawant, Kuleen Shah, Shivani Soni

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Project Guide: Ms.Quanitah Shaikh

Abstracts: User interfaces for software applications can come in a variety of formats, ranging from command- line, graphical, web application, and even voice. While the most popular user interfaces include graphical and web-based applications, occasionally the need arises for an alternative interface. Whether due to multi-threaded complexity, concurrent connectivity, or details surrounding execution of the service, a chat-bot based interface may suit the need. Our chatbot used for college admission process is named AdmiZen. AdmiZen will be completely based on a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. AdmiZen will remember previous commands in order to provide functionality. The User can ask question about any college admission related activities through AdmiZen without physically available to the college for inquiry. The System analyses the question and then answers to the user. The system replies using an effective Graphical User Interface as if a real person is talking to the user. Natural language processing technologies are used for parsing, tokenizing, stemming and filtering the content of the complaint.

Title: Phising Detection Using CNN

Author: Bhakti Chavan, Priya Vinod Mishra, Gaurangi Nerurkar, Trishali Mahesh Raut

Project Guide: Ms.Snehal Lopes

Abstracts: Phising is the criminal scheme to steal the user's personal data and other credential information. It is a fraud that acquires victim's confidential information such as password, credit card number, Bank account details ,financial username and later it can be misuse by attacker. We aim to use fundamental visual features of a web page's appearance as the basis of detecting page similarities. We propose a novel solution, to efficiently detect web page's. Note that page layout and contents are fundamental features of web page's appearance .Since the standard way to specify page layout is through the style sheet (CSS), we develop an algorithm to detect similarities in key element related to CSS. In this paper we proposed a system that uses CNN technique along with map-reduce paradigm to achieve a higher accuracy in detection of the spam email. By using the map-reduce technique we also try to overcome the two hurdles of the CNN

Title: "OFDM WITH INDEX MODULATION FOR WIRELESS COMMUNICATION"

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Author: GAURAV AJAY, VAIBHAV SURESH KHANDGE, SIDDHANT VIJAY PAWAR,
ADITYA NARENDRA RANE

Project Guide: Ms.Jayasudha Koti

Abstracts: Orthogonal Frequency Division Multiplexing with index modulation is proposed for wireless communication. OFDM is a technique used in modern broadband wireless communication systems. The transmit signals in an orthogonal frequency division multiplexing (OFDM) system can have high peak values in the time domain since many subcarrier components are added via an inverse fast Fourier transformation (IFFT) operation. As a result, OFDM systems are known to have a high peak-to-average power ratio (PAPR) when compared to single-carrier systems. The main motive of our project is generation of the OFDM signal and to find and compare PAPR values for different modulation techniques. In this paper we propose to analyze the theory of OFDM, and simulate the OFDM transmitter using GNU Octave.

Title: IoT Based Pulse Oximeter

Author: Rakesh Prajapati, Bharath Shetty, Prachi Parab, Ansel Peris

Project Guide: Ms Jayasudha Koti

Abstracts: A pulse oximeter is a medical instrument that indirectly measures the saturation oxygen level of a patient's blood, i.e. what proportion of the oxygen-carrying molecules in the blood (called hemoglobin) are actually carrying oxygen. This is known as oxygen saturation or SpO₂. It also measures the heart rate in beats per minute (BPM). This saturation point oxygen level is very important to monitor while a patient is at risk for further process of medication. In this project we proposed to develop a pulse oximeter to measure the saturation point oxygen level and heart rate and the same could be viewed in the app and also it is available live to the client's hand held device (mobile phone). We seek to monitor a patient's heart rate and blood-oxygen level using a pulse oximeter. The pulse oximeter is designed using infrared and visible (red) light detection from light that passes through a patient's finger from an emitter. The absorption will tell when blood is moving through the finger and how much of this is oxygen-rich. The output of this analog circuit will be fed into a Node microcontroller, which computes the pulse and oxygen level from these numbers. Using this technology, the goal of our project is to develop a pulse oximeter which will measure the oxygen saturation level, heart rate in BPM, and the data of the same can be viewed on a server or an app.

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Title: Smart Traffic Light Scheduling in Smart City Using Image and Video Processing

Author: Pooja Chavan, Neha Joshi, Siddhesh Pal, Renold Chetty

Project Guide: Ms.Shilpa Chaman

Abstracts: The growing population and increased vehicles lead to the main challenges in urban life. Traffic is a situation on the road networks, which is caused due to the increased number of vehicles which can cause fatigue, more consumption of fuel followed by wastage of time and energy. The problem of this traffic is scheduling of traffic light is conducted regardless of detection of instantaneous traffic density. Therefore, the role of traffic management will save time and fuel consumption and reduce environmental pollution. In recent years, Internet of Things (IoT) and smart cities drive a new field of intelligent traffic management. In this a new method for traffic light control is presented by using the combination of IoT and image and video processing techniques. In the proposed models, traffic light scheduling is determined based on the density and the number of passing vehicles.

Title: EYE CAN SEE-A Vision Descriptor device for visually impaired

Author: Sanika Chaudhari, Shruti Gupta, Laksh Keniya

Project Guide: Ms Shilpa Chaman

Abstracts:

There are about 45 million blind people and 135 million visually impaired people worldwide. Disability of visual text reading has a huge impact on the quality of life for visually disabled people. The recent technological advancements are focusing on developing smart systems to improve the quality of life. Machine learning algorithms and artificial intelligence are becoming elementary tools, which are used in the establishment of modern smart systems across the globe. Although there have been several devices designed for helping visually disabled to see objects using an alternating sense such as sound and touch, the development of text to voice from image is still at an early stage. Existing systems for text recognition are typically limited either by explicitly relying on specific shapes or colour masks or by requiring user assistance or may be of high cost. Therefore we need a low cost system that will be able to automatically locate object and read the text aloud to visually impaired persons. The main idea of this project is to recognize an object from an image and then text character and convert it into a speech signal. It is implemented using a Raspberry Pi and a Raspberry Pi camera. The captured image undergoes a series of image pre-processing steps to locate only that part of the image that contains the text and removes the background.

Title: Medibot-Mental Health Monitoring Chatbot using NLP

Author: Jyotsna Bhuwad, Siddhi S Bagwe, Romil Bhatt, Kenneth Brass

Project Guide: Ms.Quanitah Shaikh

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Abstracts: This project was started with a motive to solve one of the most significant problem of today's world, i.e. depression. With rising technologies, challenges, demands, and needs, This generation often finds themselves in a situational deadlock and start building stress within themselves. This stress results in depression and depression results in suicide. Statistics say that over 50 percent of the people who die by suicide suffer from depression. So, to fix this issue, we have aimed to build a chatbot using natural language processing which deals with mental health and depression by using the concepts of open source technologies like Python and NLTK toolkit, AI. This system is introduced as a solution for people dealing with problems such as depression and mental health disorders. Focusing on self-service, the proposed system aims to develop a chatbot in which the user can interact with the system, and with the help of NLP and AI, the system will respond to the input data given by the user to which the analysis would be done. After the analysis, the system would respond to the input based on the keywords fed and provide a solution for the same. This results in significant advancement towards the technology of natural language processing in the field of mental health.

Title: Lip Reading via Deep Neural Network

Author: Shreyash Adlinge Swati Jha Bhaumik Barot Beniel Mihavel

Project Guide: Ms. Shilpa Chaman

Abstracts: We are thankful to a number of individuals who have contributed towards our final year project and without their help; it would not have been possible. Firstly, we offer our sincere thanks to our project guide, Guide-Name for his constant and timely help and guidance throughout our preparation. We are grateful to all project co-ordinators for their valuable inputs project. We are also grateful to the college authorities and the entire faculty for their support in providing us with the facilities required throughout this semester. We are also highly grateful to Dr. Gautam A. Shah, Head of Department (EXTC), Principal, Dr. Sincy George, and Director Bro. Jose Thuruthiyil for providing the facilities, a conducive environment and encouragement.

INFT
ABSTRACTS

Title: Distributed Workspace

Author: Nikhil Pujari, Rahul Shirolkar, Rohit Choudhari

Project Guide: Dr.Minal Lopes

Abstracts: The objective of this project is to develop a platform where resources & work of every developer can be viewed and shared by authorized co-workers. A platform which can be used in a website developing organization, where website resources can be bundled in one place. This creates a workspace for every member of the organization to view and use the resources for development. This workspace gives the developers the luxury to host their project within the same platform without the need to download the repository and run it on a local machine. We have admins and developers both as the users, each provided with their own dashboards to keep a track on their day to day works. The users can also set the 'rights to access' to other members of the project, to whom they wish to share it with, this provides proper security to the project

Title: Busimate Web Application

Author: Dhruv Bhat, Benson Thomas, Hollis D'silva

Project Guide: Dr. Nitika Rai

Abstracts: This project Busimate Web Application is an effort to develop an efficient and convenient system for the people to grow their business. Busimate is web application that creates a business partnering hub. We have embarked on a journey dedicated to helping entrepreneurs worldwide. Here we have created a team of dedicated people who love helping people connect to create, build and grow new and existing businesses. In our project we are trying to solve the problem of finding a business partner by creating a website that will help anyone find their ideal partner. Using our platform which will provide the function of applying filters and searching for business partners in

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accordance with the field of interest of the user. On the other side if any other user B is interested in the ad posted by the user then he can approach the user A and discuss further on the idea. One may also use this Website to post about a job and find themselves a partner for their business. This will solve the problem of starting a business with a partner to a great extent with its potential. We plan to create this platform using Web technology with a functionality with which we can chat with other users if interested in their post with security and privacy ensured. It will also have a database which will store the info of the user who will register for it, also with signup and login functionality which will give us access to additional features of the platform and also ensure security of the private information that we post on it. Our topic is mainly focused on area of business with the focus of helping startups with their initialization. This Website can be very useful to the people who are willing to open a new business in the most basic way. A free Blog is also available for all users to read but to post a blog or ad and contact the ad posters registration fee needs to be paid. Whether Starting a Business or Seeking Growth Capital for an Existing Business, Business Partners Offers an Extensive Investor Database of Seasoned Industry Professionals to Connect with. Our Membership Entitles you to Business Partner Matches and Direct Connections with Entrepreneurs, Founders, Highly Skilled Individuals, and Investors. You get access to Incredible Partnership Opportunities, New Streams of Sales Leads, Start-up Business Ventures and a Wealth of Business Data Information. Each Profile has active Communication.

Title: On Demand Community Service Provider

Author: Chetan Lodha, Aditya Kudathingal, Danila Mascarenhas

Project Guide: Ms. Prajyoti Dsilva

Abstracts: In most of our lives, certain small issues and tasks back home take the most time to get resolved, and many times get delayed and prolonged. Hence, it becomes difficult for many to give time to family and work. People are always looking for some help to complete small tasks and save time and utilize it on other things. The On Demand Service Provider is an effort to build an android application which will work as a mediator between a customer and a service provider to resolve the many small issues or complete the task. This platform will allow users to order any kind of service and will strive to deliver it. This application will connect customers with different service providers which includes various services like Plumber, Carpenter, Electrician, Cook, Maid, Vehicle cleaner

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Title: College Enquiry Chatbot

Author: Parthvi Soni, Supriya Mishra, Shraddha Desai

Project Guide: Ms.Amrita Mathur

Abstracts: A Chatbot aims to make a conversation between both human and machine. The machine has embedded knowledge to identify the sentences and make a decision itself as a response to answer a question. The response principle is matching the input sentence from the user. Chatbots are virtual users or virtual assistants for communicating via messaging or chat. They are programs which communicate with a user through messaging or chat interface. College Enquiry Chatbot is a bot application designed for college purpose where the students would not have to visit a particular college website for any information or enquiry. The present technical project consists of developing an expert System for college enquiry desk using an android based Chatbot, through Artificial Intelligence technology and virtual assistance (Human-machine conversation), transmitting natural language to a server.

Title: Use of Data Mining techniques to improve Consumer- Retailer Relationship

Author: Lavia Suvana, Shweta Pai, Malcolm D'souza

Project Guide: Mr. Vaibhav Kala

Abstracts: Powerful customer relationships are essential to business success. But, they aren't built overnight. Just like personal relationships, it's important to cultivate and nurture customer relationships. When organizations develop strong relationships with their customers, it can lead to loyal clients, positive word of mouth and increased sales. There are many algorithms and methods for mining data. One significant algorithm is Apriori algorithm which has high efficiency. In this project, we propose an analysis tool for data mining which will improve consumer retailer relationship by providing the retailer with analysis of the customer buying patterns. These patterns will help the retailer to enhance consumers shopping experience. This analysis will be done using data mining models. This approach can provide an approximate answer which is more useful than 'exact' result in many situations. This technique will show the number of frequent purchases of the customer using Apriori, k-means and k-nearest neighbours.

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Title: Higher Dimensional Quantum Computing via Qudit Simulations

Author: Nikita Agarwal, Rutuja Andhale, Aarya Bodhankar

Project Guide: Dr. Minal Lopes

Abstracts: Computation is founded on binary logic. This binary logic is the core on which all of computing is built upon, whether it is simple calculations or massive simulations. In the early days vacuum tubes were used to implement binary logic, which made the devices very bulky and inefficient. Then we progressed onto the silicon era, where transistors came to be used for computation. All of today's computers are a product of this silicon era, which has reached its pinnacle. We have created nanoscale transistors and chips that fit the maximum amount of circuitry in the smallest possible volume. Now we find computing power reaching stagnancy, even as the data generated by the world rises exponentially every single day. This calls for another revolution in computing technology, this time not just in implementation but also in logic. This is where Quantum Computing comes in. Involving less of artificial computing and more of harnessing the quantum behavior of various entities, Quantum Computing promises a revolution in parallel computation that will make transistor-based computing obsolete. But it isn't without its challenges. The exploitation of quantum states requires specific environments which need to be completely isolated from the surroundings. They are also very unstable in standard conditions and prone to be affected by noise introduced from outside the system. This makes Quantum Computing a very expensive endeavor beyond the reach of all except those having a solid financial backing over a long period. Research into this field has thus been limited to such companies, and a lot of people and organizations who want to contribute to it are unable to do so, thus depriving the field of talent. To alleviate this issue our project acts as a middle ground between the quantum and silicon domains. It aims to simulate quantum computing on traditional systems at least on a fundamental level, made accessible to a wide range of people from students and teachers to researchers and developers. This will catalyse the development of Quantum Computing, especially in the software domain, since it requires a completely different computing logic from binary, based on qubits, which can be developed and improved on simulations just as well as their expensive and delicate hardware counterparts. Throughout the project, we aim to explore the latest advancements in Quantum Computing and play a part in bringing them to the masses and making it accessible, convenient to operate, and easy to understand. We also aim to contribute to the domain itself by means of exploring hybrid computing that arises due to a confluence of quantum and classical systems.

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Title: Medical Assistant

Author: Yasir Ahmed, Karan Gori, Shubham Chikane

Project Guide: Ms.Amrita Mathur

Abstracts: Many times a patient might under-estimate an underlying health condition and neglects it which may worsen over a time and cause a life-terminating disease and sometimes a person might irrationally worry about having a serious medical condition leading to unnecessary health anxiety. Patients in both these scenarios can be helped by having an interface that can predict if he/she has serious medical condition or it's just health anxiety. A chatbot is one such interface that can be deployed to gain information of a patient's symptoms and determine the underlying medical conditions if any based on the information given by the patient with great accuracy without having to visit a clinic or a doctor. So these chatbots can act as a bridge between a patient and a doctor. Chatbots can be deployed using various technologies such as Deep Learning, Artificial Intelligence, etc. Using deep learning algorithms and long-short term memory networks a chatbot can be developed and accuracy as great as or more than 80% can be achieved.

Title: A P2P botnet detection technique using machine learning classifiers

Author: Yash Patwa, Tulika Kotian, Ralin Tuscano

Project Guide: Ms. Alvina Alphonso

Abstracts: As compared to earlier when networks were constructed around remote data centers, they are now connected to virtual applications, the cloud, and IoT gadgets globally to facilitate analytics at the edge, work decentralization, and distributed information. While these distributed networks provide better connectivity and give users a wide range of options to interact with other users, it also creates massive loops in security. Today, botnets prove to be the one among many scandalous perils to security in networks. While Client-Server botnets employ centralized communication architecture, Peer-to-Peer (P2P) botnets acquire a decentralized structure for trafficking commands and controlling data, hence making them more difficult to be identified in a network. This project proposes an effective system to detect Peer-to-Peer botnets by applying machine learning algorithms to network traffic parameters. The data from the CTU-13 dataset is input to the system. The proposed system has

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3 phases. In the first stage, feature reduction was performed on the network traffic to recognize which of the features affected the classification considerably. This is done manually using the techniques of feature selection like feature importance and correlation matrix with a heatmap. In the second stage, the machine learning detection model was developed by testing five algorithms, which classified the traffic into Botnet (malign) traffic and legitimate (benign) traffic in the last phase. The output of the system generates the classification of the network traffic with visualizations to gain insights on the network activity. The five machine learning algorithms employed are Decision Tree, Support Vector Machine (SVM), K-Nearest Neighbour (KNN), Logistic Regression, and Naive Bayes. On performing comparative analysis, the Decision Tree algorithm successfully detected Peer-to-Peer botnet traffic by demonstrating an accuracy of 99.90%.

Title: Mouse Cursor Control Using Hand Gestures

Author: Aditya Somaiya, Ankit Singhal, Pratik D'souza

Project Guide: Dr. Vaishali Jadhav

Abstracts: The purpose of this project is to provide a new Human-Computer Interaction (HCI) system that is more natural and flexible than an external mechanical device like a mouse. Hand Gestures have been a way of communication between humans since ancient ages as they are a very intuitive and comfortable way of interaction. These qualities of hand gesture communication are the reason why they can be used to create an excellent HCI system with the help of Computer Vision and Convolutional Neural Networks. The proposed system is an example of an HCI system that uses Hand Gestures performed by the user to interact with the computer. Computer Vision in the form of a camera or a webcam is utilized to capture the images of hand gestures performed by the user which then undergoes image processing and are recognized by a Convolutional Neural Network (CNN), which then executes the command intended by the user accordingly.

Title: Breast Cancer Detection Using Machine Learning

Author: Noorsaba Khan, Rahul Bhatt, Hetal Poriya

Project Guide: Ms.Alvina Alphanso

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Abstracts: Breast Cancer is the second popular cause of death in both developed and undeveloped worlds. Breast Cancer is characterized by the mutation of genes, constant pain, changes in the size color(redness), skin texture of breasts. Breast Cancer is a malignant tumor that occurs in the glandular epithelium of the breast. It is considered to be one of the most common cancers affecting women in the world. However, there is not an effective way to cure Breast Cancer yet, the key to reducing the risk of death is the early detection and diagnosis of Breast Cancer. According to globocan 2018 report [1] there were total 1,62,468 new cases registered and around 87,090 women died due to breast cancer in India. There is a great need of automated system that could analyze data and detect Breast cancer. We propose a system that will use Machine learning for detecting Breast cancer at an early stage. Classification of breast cancer leads pathologists to find a systematic and objective prognostic, generally the most frequent classification is binary (benign cancer/malign cancer). Today, Machine Learning (ML) techniques are being broadly used in the breast cancer classification problem. They provide high classification accuracy and effective diagnostic capabilities. In this project, we present three different classifiers: K-nearest neighbor (KNN), Simple Vector Machine (SVM), and Random Forest for breast cancer classification. We propose a comparison between the two new implementations and evaluate their accuracy using cross validation. Results show that KNN gives the highest accuracy with lowest error rate than other two classifier.

Title: SMART AUTOMATED CAR PARKING SYSTEM

Author: Rahul Pinheiro, Manita Pasi, Chandni Patel

Project Guide: Ms.Shree Jaswal

Abstracts: In large parking areas attached to shopping malls and so on, it is difficult to find a vacant parking space. In order to solve these problems, the navigation system in the parking area is created. This system proposes a secure and efficient parking system which will work on sensor communication and secure wireless network with RFID reader. The central server will also maintain the count of the vacant slots in the parking facility and it will broadcast it to the user. Accordingly, the user will be guided to the parking area. Based on this, the expected shortest path to the nearest parking area will be calculated and shown to the driver and while leaving the parking space the user will be charged a specific amount which will be deducted automatically from the card. Using this system, we can easily find vacant space for parking and parking waiting time is reduced efficiently.

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Title: AADHAR QR BASED VERIFICATION

Author: ROYSTON CARDOZ, HARSH JAIN, SAYLI MHATRE

Project Guide: Ms.VAISHALI SALVI

Abstracts: This report highlights the important features of our project 'Aadhar QR Based Verification'. The transition towards paperless offices and increasing adoption of electronic transfer of information through emails and other web content has prompted organizations to have a system which would manage their documents effectively. A document security system provides a hassle-free classification and identity system that tags documents with information. Electronic documents are considered to be the most valuable information assets in enterprises. As the security era is coming, the existing systems need to be upgraded with most cost-effective measures, so a document security management system suitable for security is also designed. With more documents being integrated electronically and transferred as knowledge points, organizations see document management system as an integral tool to handle growing surge of data and respond to audits without heavy burdens to the business.

Title: Towing and Roadside Assistance Application

Author: Philip Lopes, Chris Lunis, Arnold Rebello, Sherwin Soman

Project Guide: Dr. Nitika Rai

Abstracts: This project Towing and Roadside Assistance System is an effort to develop an efficient and convenient system for the travelers to connect to an emergency service in times of need. This website is designed to change the way roadside assistance utility rendered by leveraging the services with cutting-edge technology. It is one of the best platforms that streamlines the process of connecting customers with the tow truck drivers. The website is quite simple and easy to use. A customer can request to the closest tow drivers based on the entered location and confirm their tow ride. Website will calculate the ride fare based on the location distance.

Title: Nutribud

Author: Sanjana Bhairi, Kevin Winston, Aldrin Lewis

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Project Guide: Ms.Mrinmoyee Mukherjee

Abstracts: The project aims to make an android application which will serve as a nutrition and diet tracker. The application takes the user's personal information like height, weight, sex, activity index, and age and user goals and creates a nutritional plan for the user based on his body type and goals. The user can track how much he has eaten and of what nutritional importance it is to the body, by inputting everyday all the food items consumed along with the quantity. This helps to track what is eaten in a day and keep a check whether the nutritional goal for that particular day is complete or not. This will be displayed using percentage graphs on the application dashboard. Thus, this application helps the user to get one step closer towards leading a healthy lifestyle in a feasible manner.

Title: Target Detection of Brain Cancer

Author: Dr. Joanne Gomes

Project Guide: Dr. Joanne Gomes

Abstracts: Brain tumor is considered as one of the most aggressive diseases, among children and adults. Brain tumors account for 85 to 90 percent of all primary Central Nervous System (CNS) tumors. Brain Tumors are classified as: Benign Tumor, Malignant Tumor, Pituitary Tumor, etc. Proper treatment planning and accur. The best technique to detect brain tumors is Magnetic Resonance Imaging (MRI). Huge amounts of data images are generated through the scans. These images are examined by the radiologist. Manual examination can be error prone due to the level of complexities involved in brain tumors and their properties. Application of automated classification techniques using Machine Learning (ML) and Artificial Intelligence (AI) has consistently shown higher accuracy than manual classification. The user can use the proposed system as a Web Application. The patient, doctor or medical practitioners, paramedic etcetra are the users for the system. The proposed system acts like an assistant to the doctor, by detecting brain cancer in MRI images. The user will upload the brain MR Image of the patient concerned. Then it will be able to predict whether the patient has cancer or not, if the patient has cancer the category will be specified. Experimental results indicate that the proposed approach outperforms other commonly used methods and gives an overall accuracy of 99.4%.

Title: URBAN CHEF

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Author: Crystal Monis, Sharvari Suryawanshi, Gurman Kaur Sokhi

Project Guide: Mr.Vaibhav Kala

Abstracts: In order to provide employment to the chefs who are really in search of it , this application is being created. Urbanchef is a platform which not only provides employment to chefs but it also provides better and improved services of professional chefs to the users in a given geographical area. It helps the users to book or invite a chef at their house to cook a meal of their own choice by selecting any of the cuisines and the desired chef. According to the research, it is clear that there are few applications regarding food ordering systems, that lack to be user friendly and sometimes it might not be that customizable for the users. However, Urbanchef provides suggestions of the trending cuisines or the cuisines that suit the choice or taste of the users. This system uses the two recommender algorithms namely item-based collaborative filtering algorithm and content filtering

Title: Security system for Blind and Deaf using Face Recognition

Author: Dhvani Mehta, Rutvi Shah, Rithik Sharma

Project Guide: Ms.Purnima Kubde

Abstracts: Most of the doors are controlled by persons with the use of keys, security cards, password or pattern to open the door. Our purpose is to help visually-impaired people by providing door security through face detection and recognition. The main feature we are providing is that, our system will help all the blind and deaf with their security concerns related to physical threat, monetary threat etc. A visual assistance i.e LED display and voice assistance is been used for visually impaired and deaf person's comfortness with visitor's identity and easiness in recognizing visitor. This project comprises mainly of three subsystems: namely face detection, face recognition and automatic door access control. Face detection is the process of detecting the region of face in an image. The face is detected by using the viola jones method and face recognition is implemented by using the Principal Component Analysis (PCA). If a face is recognized, it is known, else it is unknown. Since PCA reduces the dimensions of face images without losing important features, facial images for many persons can be stored in the database. Although many training images are used, computational efficiency cannot be decreased significantly. Therefore, face recognition using PCA can be more useful for door security system than other face recognition schemes. This project investigates the accuracy and effectiveness of the face detection and recognition algorithms using OpenCV and

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Python computer language. The adaboost algorithm is used for face detection and PCA algorithm is used for face recognition.

Title: Disaster management using Google Maps

Author: Malhar Sawant, Dhruv Sunil, Steve Tauro, Sahil Bhat

Project Guide: Ms. Purnima Kubde

Abstracts: Natural Disasters have threatened mankind since history started. Due to geographic location and environment change, there are many vulnerable countries to natural disasters. The countries also lack effective disaster preparedness system to confront natural disasters. In addition, a tourist may face difficulties in finding safe area or shelter place prior to the occurrence of natural disasters. For this reason, we have proposed a disaster management system and evacuation system for people using Google Map (GM). The system is implemented on android mobile phone because of the burgeoning growth of smart phones in world. Android device with our application installed on it and user. User can register the multiple receiver or family member or friends to send SMS at a time to send notification for help. By sending the current position obtained by GPS and including shortest path of shelter or safe zone on the map of the application.

Title: PEER-TO-PEER RIDESHARING USING BLOCKCHAIN

Author: Anshul Deodia, Mahesh Makwana, Kumar Ashutosh

Project Guide: Ms.Shree Jaswal

Abstracts: Ridesharing has a valuable potential in large cities that suffer from traffic jams and congestion especially in places with poor public transportation infrastructure and fuel trip expenses are too high. It is a service that enables drivers to share trips with other riders, contributing to appealing benefits of shared travel cost and reducing traffic congestion problems. By increasing the level of vehicles occupancy; colleagues who share the same workplace can smoothly hop into each other's vehicles to reach their destination. However, the majority of existing ride-sharing services rely on a central third party to organize the service, which make them subject to a single point of failure and privacy disclosure concerns by both internal and external attackers. Moreover, they are

vulnerable to distributed denial of service (DDoS) and Sybil attacks launched by malicious users and external attackers. Besides, high service fees are paid to the ride-sharing service provider. In this paper, we propose a decentralized ride-sharing service based on public Blockchain. It enables drivers to offer ride-sharing services without relying on a trusted third party. Both riders and drivers can learn whether they can share rides while preserving their trip data, including pick-up/drop-off location, departure/arrival date and travel price and can be sure of the identities. The research findings unlock the tremendous potential of the blockchain technology in other business-related fields not only limited to finance and cryptocurrencies.

Title: Hate Speech Detection using Machine Learning Technique - Logistic Regression

Author: Akshay Gunjal, Shaun Dsilva, Davon Carvalho

Project Guide: Dr. Vaishali Jadhav

Abstracts: Escalation in internet forums has increased the amount of hate speech in massive scale. Abusive and threatful content is spreading quickly because of the increase in number of social media platforms. Also, there are meager filtration techniques to detect and remove hate speech. In our proposed system we have used twitter dataset for detecting hate speech. Various classification models like Random Forest, Naive Bayes, Support Vector Machine (SVM), Logistic Regression are used. Different features like Term Frequency-Inverse Document Frequency (TFIDF), Count Vectorizer and Word2Vec are considered.

Title: Hoax News Detection in Twitter

Author: Sapana Babar, Gauri Kesarkar, Priyanka Aurade

Project Guide: Ms. Shree Jaswal

Abstracts: The problem of fake news has become one of the most challenging issues having an impact on societies. Nowadays, false information may spread quickly through social media. In that regard, fake news needs to be detected as fast as possible to avoid negative influence on people who may rely on such information while making important decisions. The features like Classification of fake and real news, Identifying the fake news on users' feed, Identifying the source of fake news, If the source is found, mark him/her as spam, Count the no. of retweets. In this paper, we present a

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solution for fake news detection on twitter that utilizes svm and rfc methods. Our experiments prove that the proposed approach allows us to achieve promising results.

Title: Rentalza

Author: Dhruvil Modi, Philip Fernandes, Varesh Kakkadan

Project Guide: Ms. Grinal Tuscano

Abstracts: Rentalza is a website with a decentralised payment gateway system that enables the users to take the products on rent. Products which is required for a limited time usage can be rented rather than buying. It provides functionality for the product owner to add products advertisements and product owner charges renting fees. Renting can help to get the product at a price that is lower than its cost price and once you have finished using the product you return it back to the owner.

Blockchain introduces robust business processes since the transactions can operate in a decentralised way. Blockchain is a fundamental technology for secure value transfer over networks. Payment gateway system is made by using Blockchain technology that makes it peer-to-peer network transactions and more secure transactions.

Title: Influence Of Emotional Intelligence for Professional Growth

Author: Jayana Shah, Sumedha Grover, Aashish Waghela

Project Guide: Ms. Alvina Alphonso

Abstracts: Emotional Intelligence (EI) refers to the ability to understand and act according to one's own emotions, as well as to understand the emotions of others; it is the key to understand the permutation and combination of the Intellectual complexities of work-life which has an immense degree of association with it. Previous research has primarily enlightened the importance of learning strategies and Emotional Intelligence among university students and their interdependencies with the student's academic performance. The study was conducted with help of a survey of questionnaires to find out the relationships between our selected parameters and the significance of Emotional Intelligence on it to decide on the predictions of our results. This research is not aimed at determining whether an individual student becomes effective or ineffective, but to help them excel in their respective choices. It is about exploring the linkages and relationships between EI and its constituent determinants along with the individual's abilities to manage emotions in order to perform well in their professional life. Our findings showed a significant impacting factor to be social skills. Along

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with differences in empathy scale between males and females, suggesting males having greater empathy scores than corresponding female counterparts.

Title: Advanced Recommendation System using Sentiment Analysis

Author: Suraj Chatterjee, Jaineel Mamtora, Shawn Almeida

Project Guide: Ms.Vandana Patil

Abstracts: The purpose of Advanced Recommendation System using Sentiment Analysis is to elevate the recommendations provided to the users by gathering the users' sentiments. The current recommendation systems of Amazon, Netflix and Spotify generally uses click based recommendation models wherein the songs, videos or the products that the user clicks on are registered and the songs, videos or the products are recommended respectively. Some platforms even use the customer star ratings and reviews to recommend the products. But the limitation of that is professional reviewers and general public commonly post their reviews on the product on E-commerce websites. We are planning to use those sentiments of the people to further provide an advanced understanding of the people's view on the product and suggest that to the future customers accordingly. Our project will use click based recommendation system as well as sentiment analysis on product reviews to look for the general sentiment of the object or product in question and finally recommend the product to a consumer.

Title: Arduino support to Quorum programming language using Cloud Computing

Author: Karan Sandam, Oren D'cunha, Sanjyot Satvi

Project Guide: Dr. Nitika Rai

Abstracts: Quorum programming language started out as a project aimed towards simplifying syntax to reduce complexity in writing codes. Over the years it has grown a lot and now it supports audio processing, basic game development, LEGO robotics and more. Due to this quorum can now be used to teach programming in high schools and colleges like. Through this project we aim to allow students to program arduino boards using this language alongside learning fundamentals of programming. This would result in adding a new application area to quorum. Our system transpiles(converts) user submitted quorum code into logically equivalent arduino code. Our system

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incorporates a total of 3 web services developed using NodeJS and Tornado, deployed separately as "containerized" applications over Heroku. Apart from this, MongoDB and Firebase Cloud Storage are used for storing user details and files respectively. This design allows us with an asynchronous and scalable system entirely on cloud. Thus users can program arduino boards using quorum right in their browser.

Title: Sports Player Performance Analysis Using Big Data and Machine Learning

Author: Ponnuchristy Nadar,Pratiksha More, Evita Rodrigues

Project Guide:Ms Aruna Pavate

Abstracts:

In our proposed system, that is *Sports Player Performance Analysis using Big Data and Machine Learning* we aim at building a model to analyze the performance of a cricket player. Player's statistics as past records, certain factors affects the performance of player. Every player has strength as well as weakness so to build a model where the performance can be analyzed to get detailed information about the players strength and weakness can help in many ways. It can be helpful to work on certain areas where improvement is needed and also it becomes very much suitable when selecting a player as a member in a team so that one can easily make decisions while building up teams. Large dataset can provide much useful information about the players and analyzing the in depth player's performance is possible. In this project, we are analysing the cricket player's teams performance be it a bowler, batsmen or an all-rounder so as to give a brief about his strengths and weaknesses to use them strategically in the game and develop themselves for improving their performance and incresing their team strength. Thus, analyzing the performance benefits players in many ways and proves to be helpful for them.

Title: CRIME REGISTRATION CHATBOT

Author: Chaitali Poojari, Siddhant Giri, Abhijeet Gonsalves

Project Guide: Ms. Alvina Alphonso

Abstracts: The purpose of this Crime Registration Chatbot is to provide the victim necessary actions after reporting the crime on the spot. With help of this chatbot, victims will get suggested actions as

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per their request. Chatbots are generally composed of three modules: the user interface, an interpreter, and a knowledge base. Now-a-days, human interaction with digital devices has become common which led to the development of a chatbot. Chatbots help humans to converse with computers. Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Data mining is defined as the process of automatically discovering useful information in large data repositories. Due to modernization in record keeping, a huge amount of raw data is generated by crime registration during the time of investing in various crimes and spreading awareness of crime.

Title: Smart Gate Pass Security Management System Using Random Key Generation

Author: Richita Rodrigues, Rujuta Sawant, Nehal Lopes

Project Guide: Ms.Aruna Pavate

Abstracts: Gate pass management system relates to the act of security. It is designed to replace traditional visitor registration and visitor information management activities in the premises, with this system we will be able to expedite the visitor registration process, determine who is still inside of the premises after meeting and notify to the system. This system solves the problem of appointments and it electively capturing all-relevant information about the visitors via web and android application and that information is recorded in database server, which provides data management for future purposes in the organization. The benefits of Gate pass Management System (GMS) is enhancing the level of security enforced in premises, providing an organized view of visitor records and reducing the time spent on managing visitor information.

Title: one-Q-shop

Author: Lenin Bardeskar, Domnic Silveira, Joel Monis

Project Guide: Ms. Amrita Mathur

Abstracts: The conventional shopping process is very time-consuming and cumbersome for the sick, the elderly and families with toddlers. Online shopping businesses easily gather data about user behavior, choices and opinion. There is no such facility for retail or wholesale stores. Large workforce is required to manage stores and inventories. Long queues and crowded stores may drive

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away customers. Therefore, a shopping assistant application would be useful in creating a better shopping experience for customers while increasing profits for the stores. The proposed solution is cheaper to implement as well as faster than handheld scanners, which have been in use in shopping avenues and malls. This project aims at developing an android based M- commerce application that would help improve the conventional shopping experience while helping businesses to increase their customer base and revenue. The project would require mobile devices with our application installed on them. The Android application provides a Bar Code scanning feature with budget monitoring and would help automate the billing process thereby reducing check-out queues. The application also provides a feature through which the user can get the optimum shopping route for products through the market.

Title: Human Resource Bot

Author: Darshan Shah, Jeel Patel, Komal Torlikonda

Project Guide: Ms.Amrita Mathur

Abstracts: Chatbots, or conversational interfaces as they are also known, present a new way for individuals to interact with computer systems. Traditionally, to get a question answered by a software program involved using a search engine, or filling out a form. The new age technologies have integrated internet of things with products and services at an incredible speed. This exponential growth is impacting the society and individuals in every sphere. The new digital products and solutions are changing and redesigning the market to an extent where becoming a part of this transformation is considered imperative. Human resource professionals in any organization are engaged in a multitude tasks that revolve around creating strategies and practices for recruitment, training, compensation and development of all the employees. HR understands that they are the source of competitive advantage for their company, that's why they have moved on to the platform called e-HRM. The HR chatbots are redefining the role of HR in the organization. By innovatively solving core people challenges, HR chatbots are helping improve efficiency and optimizing manual processes. The HR chatbots are creating opportunities for responsiveness in the realm of HR. A Chatbot is an automated structure expected to begin a dialog with human customers or diverse Chatbots that gives through text. The Chatbots which is being proposed for Human Resource is Artificial Intelligence based Chatbot for major measurement profiling of contenders for the explicit task. The learning technique used for the Chatbot here is diverse neural framework exhibit for setting up the Chabot to make it continuously like human enlistment authority.

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Title: Deaf and Dumb Gesture Recognition System

Author: Nishi Shah, Soumya Shetty, Niharika Walke

Project Guide: Dr. Vaishali Jadhav

Abstracts: Rising incidents of visual and hearing imparity is a matter of global concern. India itself has around 12 Million visually impaired people and over 21 Million people are either blind or deaf or both. For the blind people, there are various solutions existing such as eye-donation, and hearing aid for the deaf but not everyone can afford it. The purpose of our project is to provide an effective method of communication between the natural people and the impaired people. According to a research article in the "Global World" on January 4,2017 with a deaf community of millions, hearing India is only just beginning to sign. So, to address this problem, we coming forth a model based on modern and advanced technologies like the machine learning, image processing, artificial intelligence to provide a potential solution and bridge the gap of communication. The sign method is most accepted method as a means of communication to impaired people. The model will give out the output in the form of text and voice in regional as well as English languages so it can have an effect on vast majority of the population in rural as well as urban India. This project will definitely provide accessibility, convenience, safety to our visually impaired brothers and sisters who are looked upon by the society just because of their disability.

Title: Indoor Navigation System

Author: Piyush Surkar ,Tejas Dayal, Shivam Sinha

Project Guide: Dr. Minal Lopes

Abstracts: The necessity of a reliable indoor navigation system in recent year is trending up with the increased time spent in large buildings such as big malls, hospitals or museums. GPS is a well-known technology already utilized for outdoor environment but the satellite signal cannot reliably pass into thick constructions and therefore researchers are looking for the best strategy to localize people in this context as well. Such problem is called simultaneous localization and mapping (SLAM) and it is the first step in order to build an indoor positioning system (IPS). Many strategies were adopted, mostly based on beacons which are required to be installed in the environment; however this project aims to propose an approach that does not involve external sensors or complex setups to run.

Title: SMART FOOTSTEP POWER GENERATION SYSTEM

Author: Shivani Pandit, Neha Salunke, Trinity Chettiar

Project Guide: Dr. Prachi Raut

Abstracts: In this project, we are generating electrical power as a non-conventional method by simply running on the train in the footstep. The non-conventional energy system is very essential at this time to our nation. Non-conventional energy using footstep needs no fuel input power to generate the output of the electrical power. For this project the conversion of the force energy into electrical energy. The control mechanism carries the rack & pinion, D.C generator, battery, and inverter control. We have discussed the various applications and further extensions also. So this project is implemented to all footstep, the power generation is very high. The initial cost of this arrangement is high. This project presents power generation by using a piezoelectric transducer with bending mechanism support. In this study, the bending mechanism is developed by employing 3D printer technology. This 3D model is used as a support for a piezoelectric transducer during the deflection or bending process. During deflection conditions, stress that is applied to the piezoelectric transducer will generate electrical energy. The 3D model helps the piezoelectric transducer to produce more voltage output. A finger press test is used as an evaluation method for the voltage output of the piezoelectric transducer. The experiment is tested by varying three different 3D models with different diameters for the middle hole for each of the models. A round shape of the piezoelectric transducer with the size of 50 mm in diameter is used to experiment. Thus, when the piezoelectric transducer is placed on the 3D model with 0 mm in diameter of the middle hole will producing 5.4 V voltage output. However, a 3D model with a 30 mm diameter of middle hole, the output increases up to 19.0 V. The output voltage for piezoelectric transducer reached its highest voltage when placed on the 3D model with a middle hole of 40 mm which is 34.4 V. This bending mechanism can be used to increase the output of piezoelectric transducer as it applied underneath footstep tile at the in a piezoelectric crowded area to harvest the energy produced from walking activities. The power generated can be used to power up various electronic devices.

Title: Smart Student Management System

Author: Mark Tapeli, Ryan Pereira, Ascilton Pereira

Project Guide: Dr. Minal Lopes

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Abstracts: Several automated attendance systems have been proposed based on biometric recognition, bar-code, QR code, and near field communication mobile devices. However, the previous systems are inefficient in terms of processing time and low in accuracy. This project aims to propose an system using face recognition. We proposed a in hand centralized system for a Teachers using Face Recognition where he/she can save all his student record on a remote server via an android app/website and next time if he/she want to get any details of a particular student then by Face Recognition technique the teacher will get complete history of that student just by clicking a photo his/her face. Owing to which there won't be any need to maintain different registers and document just to get student details.

Title: Music Prediction and Recommendation using Machine learning Algorithms

Author: Andrea Lobo, Claudia Avittampilly, Jerimson Edwin

Project Guide: Ms. Monika Pal

Abstracts: Music is a kind of content that has similar issues and challenges. Digital music sales have increased significantly. Paid subscriptions and industry revenues from streaming are more than tripled between 2011 and 2014. In this large market, some songs are popular and some others are not. Popularity of a song can be measured as its total sales or exposure to the public, and is often summarized in a music chart. For instance, the Billboard charts determine the ranking of songs based on total sales, online streaming counts, etc. on a weekly basis; last.fm provides information about top tracks and artists from live radio plays. In our project, we are going to make a system for music prediction success to decide which music will be more hit than the other. Once on beginning the project we will select the appropriate technology and framework. The framework that we will use for this system is Flask and Tkinter Framework. We will use Advanced Data science and Machine Learning Algorithms. The aim of this paper is to give unified modelling implementation of a music prediction and recommender system.

Title: Plagiarism Checker using NLP

Author: Christie George, Lydia Nadar, Akash George

Project Guide: Ms. Shree Jaswal

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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: FALSE RATE DETECTION IN IDS USING MACHINE LEARNING

Author: Mr. Stanley K Johnson, Mr. Lyon Saldanha, Mr. Sasendar Maturi

Project Guide: Dr. Nitika Rai

Abstracts: Intrusion detection systems (IDSs) have been widely deployed in organizations nowadays at the last defense for the network security. Although intelligent intrusion and detection strategies are used to detect any false alarms within the network critical segments of network infrastructures, reducing false positives is still a major challenge. Up to this moment, these strategies focus on either detection or response features, but often lack of having both features together. However, one of the big problems of these systems is that a large amount of alarms especially false alarms will be produced during the detection process, which greatly aggravates the analysis workload and reduce the effectiveness of detection. To mitigate this problem, we advocate that the construction of a false alarm filter by utilizing machine learning schemes is an effective solution. In this, we propose an adaptive false alarm filter aiming to filter out false alarms with the best machine learning algorithm based on distinct network contexts. In particular, we first compare with some specific machine learning algorithms to illustrate their unstable performance. Without considering those features together, intrusion detection systems probably will not be able to highly detect on low false alarm rates. To offset the above mentioned constraints, this paper proposes a strategy to focus of detection involving statistical analysis of both attack and normal traffics based on the training data of KDD

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Data sets. As a result, the statistical analysis can be manipulated to reduce classification of false positives and distinguish between attacks and false positives for the data of KDD Data sets. Therefore, this strategy can be used to evaluate and enhance the capability of the IDS to detect and at the same time to respond to the threats and benign traffic in critical segments of network, application and database infrastructures. The evaluation results show that our approach is effective and encouraging in real scenarios.

Title: CAREER GUIDANCE CHATBOT USING AI

Author: Johanen Patel, Bhagya Doshi, Amogh Salaskar

Project Guide: Ms.Grinal Tuscano

Abstracts: The purpose of career guidance bot is to carry out a counselling conversation between both human and machine. This project plans to revolutionize the world from traditional career counseling to digital career counseling. The bot will help the users/students who will opt for SSC, HSC and Undergraduate to select their field of interest that would be best for them in order to build up their future. The system will use personality assessments, to help user/students evaluate their career preference. The system enables the user to explore various existing career options and their scope. It will also enable the user to get a detailed report about the suitable careers in order of preferences. The student/user can also ask about the general queries such as information about a stream, sub-stream and various courses. The chatbot will also provide the recent trends in the education sector. The average salary of the suggested courses will also be displayed after the assessment test. The detailed result and statistics after the personality assessment test helps an user/student to make wise and fruitful decisions.

Title: NFC Based Attendance System

Author: Jervis Dias, Neil Dias, Juviane D'costa

Project Guide: Ms. Mrinmoyee Mukherjee

Abstracts: Registering for attendance in education environments is a highly demanding activity as a result of increasing number of students. In most colleges attendance of students plays an important role since the students are graded accordingly. And taking attendance for so many students can be

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painstaking. The attendance process normally involves circulating a paper for the students to register their names, or the lecturer calling the names and registering the students either in a paper. It is a time-consuming process as it involves to call a particular student and then fill information and not efficient since other students give the proxies of their absent classmates. The issue of cheating in the form of registering for their friends also occurs. And after that the student's attendance has to be updated to the college database by the teacher manually, which is again tedious. Imagining the number of students to be from 50 and above, a great portion of the lecture time will be wasted performing this process. By considering all this issue, this project aims to develop one system which get attendance and update attendance in one place. This project aims to create a smart attendance system using NFC that will simplify the attendance process, by simply touching an attendance poster or the lecturer's NFC based mobile device in the class. The attendance will get updated simultaneously to the database during runtime. The system is based on NFC Technology and run on mobile as an application.

Title: LAN CHAT MESSENGER

Author: NEIL TUSCANO, SAVIL RUMAO, PIYUSH GUPTA

Project Guide: DR. JOANNE GOMES

Abstracts: The purpose of this study is to develop an LAN Chat Service, by which a user can send a message in the absence of the internet, cellular data and signal. The Wireless Fidelity or WiFi will serve as their access point to connect to another user, which can detect and pair into a different device as long as the other users are connected in a same network. But before the user can fully exchange messages; User B must accept User A's request to exchange message, if User B declines the request, both user can search another device again to send message. This study has an Admin side to see who and how many devices are connected in the same network. However, the mobile application can only pair into Android Devices, the researcher is still conducting research to make the application broader and pair into Apple Devices.

Title: Image Caption Generator Using CNN,RNN(LSTM)

Author: Ankit Kumar Yadav, Eby Joyal Nadar, Kishan Chaudhary

Project Guide: Ms. Monika Pal

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Abstracts: Automatically generating caption from an image is one of the primary goal of computer vision. It can play a significant role in robotics area, such as reading picture books for babies, helping visually impaired and much more. Image caption generation area have received attentions since the development of Deep Learning especially, a model called Show and Tell which uses Long-short term memory (LSTM). LSTM is one of the most remarkable models in neural caption generation. We used transfer learning to detect features of objects in the images using InceptionV3 and then generate natural captions using LSTM on the image datasets. We have proposed a technique combining the best features of two state-of-the-art models which can efficiently and accurately provide very natural captions. The Convolution Neural Network part extracts the features of image; the vocabulary of our model is embedded with the Global Vector for word representations. The features and the vocabulary are both inputted to the caption model generation model which produces the output.

Title: AUTOMATIC CAR PARKING SYSTEM

Author: Pranay Nimunkar, Sarvesh Desai, Yash Modi

Project Guide: Dr. Joanne Gomes

Abstracts: Parking is a problem for almost everyone today so there has to be a solution, which helps getting rid of problems arising due to the lack of a proper parking management system. So the aim of this study is to provide a dynamic solution by introducing the concept of parking guidance system over the internet. This system runs as website and provides a visual display of parking lots available to the user so that the user can book or reserve a space. The user can thus select the parking space from the visual display. The user needs to select the slot while parking and unparking the vehicle. The action of the user is then reflected in the database. This system reduces the time which is involved in searching the parking space thus reducing the fuel consumption, user's frustration. It reduces vehicle travel time and parking time.

Title: SupplyCrate

Author: Michelle Menezes, Steve Mendonca, Jason Mendes

Project Guide: Ms. Vandana Patil

Abstracts: A retail application or a commercial application is a simple software that lets sellers and buyers transact their business online. As it is rightly said apps for retail business are a gold mine when it comes to improve shopping. This project will be based on making an app for Android mobile

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phones that will be very functional when consumers are in need of supplies at times of emergency. It will operate in two main modes - consumer mode and retailer mode. The need for this application is that we can promote the local businesses during emergency lockdown procedures. It will help to follow the rules of social distancing even after the pandemic is taken under control. Since the application provides an option between home delivery and take away through a token based system, the consumer can avoid waiting in long queues and get their supplies in an orderly fashion. Also, the retailer will have a record of all the orders and deliveries that are in process. This application will also help local vendors to go about their day to day business in an organized manner. This is how we will use technology as a boon for promoting our local businesses and give them an opportunity to stand out in this competitive digitized era.

Title: Anti Theft Mobile App

Author: STEVE DMONTE, ABHISH RAUT, BLITHE GONSALVES

Project Guide: Ms. Prajyoti D'silva

Abstracts: This paper presents a technique to improve anti-theft for android based mobile phones by using different services like e-mail instead of SMS. As the use of smart-phones, tablets based on android operating system is increasing, many scenarios related with anti-theft have already been proposed and many software based on anti-theft have also been developed, but most of these software are not freely available and it's difficult to identify the thief by using these software's e.g. GPS Tracking. Our app shows how various features in android mobiles can be automated on single click to catch theft. By this application user can perform various operations on its mobile even if mobile is very far from him, like by hitting a button user can fetch device's location, Capture photo, send SMS on sim change and e-mail from our remote mobile, Photo vault, Convenience to the user, security and efficiency are main issues that are considered. This application makes the use of services like location based services and native android applications

Title: College Project Plagiarism System

Author: Vanzel D'silva, Jubinu Varghese, Shubham Yadhav

Project Guide: Dr Vaishali Jadhav

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Abstracts: Plagiarism is the act of stealing someone else's ideas or writings. Over the course of years, various plagiarism Softwares have claimed that they are 100 percent accurate. However, these software's do nothing but use a series of hand-picked thresholds of metrics that ultimately determine the basis of whether or not we can claim that the said author is guilty of committing plagiarism. Since these thresholds are manually determined, they are not good enough to be able to detect all forms of plagiarism, which include unique situations. In this project, we will be making use of Recurrent Neural Networks(RNN) and the LSTM algorithm whose speciality is that it not only processes single data points (such as images), but also entire sequences of data (such as speech or video). Therefore we will be detecting plagiarism using a pre-classified data set, and make use of deep learning to enable authorities without any knowledge of the methodology to detect plagiarism.

Title: PROManagement

Author: Varshit Jain, Dhairya Desai, Ansh Aya

Project Guide: Mr Vaibhav Kala

Abstracts: This report highlights the important features of our project 'PROManagement'. 'PROManagement' is a project management application that can be used to improve the quality of management in an organization. It explains the various features and requirements of the project. The report shows the various problems in the current project management techniques and how it can be improved to provide a better quality to the users. The Literature Review consists of ten IEEE Papers where each paper discusses some aspects of project management and how it can be improved for the organization. They discuss various methodologies that can be used to reduce the cost incurred to the organization during a course of project development cycle. It also recommends various algorithms that can be used to overcome the challenges faced by an organization. This report consists of a well-defined proposed methodology where the methodology proposed to complete the project is explained in detail and how the outcomes can be achieved. The scope of the project defines the actual outcomes that need to be expected from the application. The features of the application show the positives of the application. The functional requirements and non-functional requirements of the proposed system are clearly defined with the roles of different actors that will participate in the actions occurring. The non functional requirements specify the requirements of the system that do not affect the system functionality directly but indirectly. The proposed application has certain hardware and software requirements it needs to be fulfilled to be able to run smoothly. These hardware and software requirements are specified for the user to meet. The requirements mentioned are minimum

requirements and thus the system needs to fulfill at least these requirements to be able to run smoothly. The software requirements are useful to complete the list of dependencies required by the system to run, it includes the class files and framework the application is built on. Use case diagram details the various uses of the various actors defined for the application to be worked with. Class diagram complies the use cases and the actors into classes and their attributes along with the functions for each user. Activity diagram defined the flow of the system from the start to finish and the various tasks a user could do. Data flow diagram detailed the flow of data among the application from the user to action to database. Timeline Chart shows the timeline predicted for the project development.

Title: PEER-TO-PEER RIDESHARING USING BLOCKCHAIN

Author: Anshul Deodia, Mahesh Makwana, Kumar Ashutosh

Project Guide: Ms. Shree Jaswal

Abstracts: Ridesharing has a valuable potential in large cities that suffer from traffic jams and congestion especially in places with poor public transportation infrastructure and fuel trip expenses are too high. It is a service that enables drivers to share trips with other riders, contributing to appealing benefits of shared travel cost and reducing traffic congestion problems. By increasing the level of vehicles occupancy; colleagues who share the same workplace can smoothly hop into each other's vehicles to reach their destination. However, the majority of existing ride-sharing services rely on a central third party to organize the service, which make them subject to a single point of failure and privacy disclosure concerns by both internal and external attackers. Moreover, they are vulnerable to distributed denial of service (DDoS) and Sybil attacks launched by malicious users and external attackers. Besides, high service fees are paid to the ride-sharing service provider. In this paper, we propose a decentralized ride-sharing service based on public Blockchain. It enables drivers to offer ride-sharing services without relying on a trusted third party. Both riders and drivers can learn whether they can share rides while preserving their trip data, including pick-up/drop-off location, departure/arrival date and travel price and can be sure of the identities. The research findings unlock the tremendous potential of the blockchain technology in other business-related fields not only limited to finance and cryptocurrencies.

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Title: Quizlet

Author: Melissa Monteiro, Shavleon Lainez, Michael Lopes

Project Guide: Ms. Mrinmoyee Mukherjee

Abstracts: The Quizlet App is designed to help students and colleges to easily conduct exams and assignments online. The app can function in different modes based on user and organization requirements. A student can also practice quizzes on various subjects and achieve high-score thus, helping him test his/her knowledge on the subject. The app also releases score quickly and reduces paper work. The app has an attractive GUI and is simple and easy to use. As mobile devices are a necessity in today's world, online learning and exams have gained major popularity and importance. The Quizlet app tends to needs of students who are eager to learn at the comfort of their home and easy availability.

Title: AI based Website Navigation for Educational Institutions

Author: Rakshit Vaghasia, Stalin Mathias, Nelson Joseph

Project Guide: Dr. Prachi Raut

Abstracts: A chatter bot or Chat bot aims to make a conversation between both human and machine. The machine has been embedded knowledge to identify the sentences and making a decision itself as response to answer a question. The response principle is matching the input sentence from user The present technical project consist of developing an expert System for college enquiry desk using an android based Cha bot, through Artificial Intelligence technology and virtual assistance (Human-machine conversation),transmitting natural language to a server.

Title: Crime Reporting and Intelligent Map Enabled System (C.R.I.M.E.S.)

Author: Rahul Killekar, Rishan Mascarenhas, Nikhil Patil

Project Guide: Ms.Mrinmoyee Mukherjee

Abstracts: The Crime Reporting and Intelligent Map Enabled System is an effort to develop an efficient and convenient system for crime reporting and crime data analysis. The Crime Reporting and Intelligent Map Enabled System provide an architectural overview of the crime management by harnessing the newer cutting-edge technologies. It enables the user to report crime and get instant

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response by the controller and cop module and alerts straight to the user module. While it consists of features such as crime reporting, instant action feedback notification as well as heatmaps of crime reports, it can also benefit the police department to analyze the crime reports by using data mining and machine learning techniques, so as to take necessary actions in the present and precautions in future. Crime Reporting and Intelligent Map Enabled System as illustrated above, can lead to secure, reliable and fast crime reporting application utilizing the resources of the latest technologies and thus in assisting to tackle such real-world problems and ensure public security.

Title : SECURE GAME SYSTEM USING BLOCKCHAIN TECHNOLOGY

Author: Matthew Lepcha ,Ashutosh Madhav , Taroneez Maneckji Taroneez Maneckji

Project Guide: Mr. Vaibhav Kala

Abstracts: In recent times the gaming industry has seen a massive rise with many corporations earning millions of dollars just by creating a few games. Nowadays many games do not have proper security and are very easily copied to create pirated versions. These copies are rapidly modified and spread leading to loss of revenue for the creators of the game. Pirated versions could also lead to many harmful effects on the user's computer. Blockchain was heralded as disruptive tech once it became clear that cryptocurrency wasn't its only use case. Now, its game-changing applications seem more promised than practiced and many claim it as overhyped. As the gaming industry pivots its focus to in-game assets, blockchain could potentially solve a number of related problems: eliminating fraudulent items, creating scarcity, and incentivizing more purchases by making items transferable across games. Blockchain's application in gaming is in many ways a no-brainer because gamers are already accustomed to tokenization. Some of the earliest games featured applications of virtual currency. Games evolved and fused with the internet: Now, in-game gold and items can be purchased with real-life (fiat) currency. Blockchain is an up and coming industry that has the best security currently available in the market. Our project utilizes blockchain to implement security in games, to reduce piracy and monetary loss.