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COLLEGE OF ENGINEERING AND TECHNOLOGY

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The number of Electrical and Electronics Engineering students undertaking Projects for the Academic Year 2022-2023 is 10.

Programme Name: Electrical and Electronics Engineering
Programme code : BTHEE

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1.	19TE0551	NIRMAL GEORGE.A	*
2.	19TE0552	BRANAN.D	*
3.	19TE0553	SANJAIDHARAN.G	*
4.	19TE0554	KEERTHIKA.N	*
5.	19TE0555	KAVIMANI.M	*
6.	19TE0556	MUTHUKUMARAN.V	*
7.	19TE0557	RAKESH.M	*
8.	19TE0558	VEDA.S	*
9.	19TE0559	YUVARAJ.P	*
10.	19TEL032	DINESHKAR.M	*

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DOCTORS ASSISTIVE SYSTEM USING AUGMENTED REALITY TO ENHANCE MEDICAL OPERATIONS

PROJECT REPORT PHASE – II

Submitted by

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Under the guidance of

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In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRICAL AND ELECTRONICS ENGINEERING

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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This is to certify that this project work titled "**DOCTORS ASSISTIVE SYSTEM USING AUGMENTED REALITY TO ENHANCE MEDICAL OPERATIONS**" is the bonafide work submitted by **A.NIRMAL GEORGE (19TE0551), D.BRANAN (19TE0552), M. KAVIMANI (19TE0555)** and **S.VEDA (19TE0558)** in partial fulfillment of the requirement for the award of the B.Tech Degree in Electrical & Electronics Engineering Pondicherry University during the academic year 2022-2023.This work has not been submitted for the Award of any other Degree of this any other Institution .

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RAAK college of Engineering &Technology

Submitted for the University Examination held on 19/06/2023

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EXTERNAL EXAMINER

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ABSTRACT

Surgeons are regularly on the lookout for technologies that will enhance their operating environment. They are often the early adopters of technologies that allow their field to offer a better surgical and patient experience. The continuing enhancement of the surgical environment in the digital age has led to a number of innovations being highlighted as potential disruptive technologies in the surgical workplace. Augmented reality (AR) is rapidly becoming increasingly available. Augmented reality (AR) is a promising tool to conveniently provide needed information and may thus overcome the limitations of existing approaches. To this end, a prototypical AR application was developed to guide the insertion of needles to spinal targets using the mixed reality glasses Microsoft HoloLens. The system's registration accuracy was attempted to measure and three guidance visualization concepts were evaluated concerning achievable in-plane and out-of-plane needle orientation errors in a comparison study. Results suggested high registration accuracy and showed that the AR prototype is suitable for reducing out-of-plane orientation errors. AR is the addition of artificial information to one or more of the senses that allows the user to perform tasks more efficiently. We propose a system in which important information for the doctors are displayed on semi-transparent glasses included in an AR-headset and therefore are mixed with the real-world view.

In this project, the real time data of patients in hospital collected by the sensors attached to patients once the sensor measured the values then it is processed and send to doctors augmented reality glass through wireless and alert if abnormal condition occurs. The doctor can take appropriate action based on the patients current health condition.

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CHAPTER 12

CONCLUSION

- This project presented the development and evaluation of an AR instrument navigation prototype to support the detection of planned operations using AR based Glass.
- Using the mixed reality glasses HoloLens, visualization approaches and a method in which important information for the doctors are displayed on semi-transparent glasses included in an AR-headset and therefore are mixed with the real-worldview.
- The accuracy estimation results and statistically significant results regarding the comparison of visualization concepts constitute a promising base for further development.

Design and Implementation of Wireless Charging System Using Sandwich Coil and LCC Converter for Smart Electric Vehicle

PROJECT REPORT PHASE-II

Submitted by

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BACHELOR OF TECHNOLOGY

IN

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This is to certify that this project work titled **"Design and Implementation of Wireless Charging System Using Sandwich Coil and LCC Converter for Smart Electric Vehicle"** is the Bonafide work submitted by **G. SANJAIDHARAN (19TE0553), N.KEERTHIKA (19TE0554) ,P.YUVARAJ (19TE0559),** of the **(B.TECH-PROJECT PHASE -II)** in partial fulfillment of the requirement for the award of the B.Tech., Degree in Electrical & Electronics Engineering Pondicherry university during the academic year 2022-2023.This work has not been submitted for the award of any other Institution.

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ABSTRACT

Wireless power transfer (WPT) is emerging as the preeminent way to charge electric vehicles, but there appears to be no fair way to measure the power transfer. In this article, Faraday coil transfer-power measurement (FC-TPM) is presented. FC-TPM employs non-contact, open-circuited sense coils to measure the electromagnetic field from WPT and calculates the real power propagating through the air gap between the transmitter and receiver coils. What is measured is the real electromagnetic power, representing the pure dispensation of energy that unambiguously demarcates the losses on either side. FC-TPM was demonstrated to be 0.1% accurate in hardware over an Rx coil sandwich of up to 10 cm using a 1-kW WPT system. Fair metering incentivizes businesses and individuals to make choices that conserve energy and advance technology by providing more information and by properly assigning the financial loss. This article is accompanied by a video highlighting the essential contributions of this article.

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CHAPTER 8

CONCLUSION

The proposed sandwich coil design further eliminates or minimize the extra coupling effects to a negligible level, making it more straight forward to design a wireless charging system using the double-sided LCC converter topology. The detailed design procedures to improve system efficiency are also introduced. Both the MATLAB simulation results and the experimental results verify the proposed idea. The compact and highly efficient wireless charging system is able to deliver DC-DC efficiency of 95.5% with an air gap of 150 mm when fully aligned.

DESIGN AND IMPLEMENTATION OF ELECTRIC VEHICLE CHARGER USING HYBRID CONVERTER

PROJECT REPORT PHASE – II

Submitted by

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This is to certify that this project work titled "**DESIGN AND IMPLEMENTATION OF ELECTRIC VEHICLE CHARGER USING HYBRID CONVERTER**" is the bonafide work submitted by. **V.MUTHUKUMARAN (19TE0556), M.RAKESH (19TE0557)** and **M.DINESHKAR (19TEL032)** in partial fulfillment of the requirement for the award of the B.Tech Degree in Electrical & Electronics Engineering, Pondicherry University during the academic year 2022-2023.This work has not been submitted for the Award of any other Degree of this any other Institution.

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ABSTRACT

Over the recent years, the growing need for the integration of electric vehicles into the grid has been seen. Electric vehicles can be easily integrated into the conventional grid through the advancement of various topologies of power semiconductor devices and the development of power electronic converters. The interface provides the maximum power point for the electric vehicles to operate. The Hybrid LUO converter (HLC) implemented in this project. It is one of the most popular topology for integration renewable energy resources and electric vehicle. This configuration of bidirectional DC-DC converter provides galvanic isolation through a high frequency transformer and also provides bidirectional power flow. The HLC converter control is based on the modulation of phase shift control where the leading bridge supplies power to the lagging bridge .the closed loop control of the converter is implemented in this project. The Luo converter in this scheme is of switched capacitor type.It helps to provide regulated output voltage from an unregulated source of power supply. The major benefits of this proposed scheme is that it combines the advantages of the switched capacitor, voltage lift technique and the impedance network. Hence the proposed scheme has various advantages such as high power density, larger range of output DC voltage, lower or no inrush current, lower harmonic injection, simple circuit, high voltage transfer gain, can process upto several tens of watts of power. The simulation analysis and the hardware implementation shows that the output voltage obtained is higher than the expected theoretical value. i.e, it is the highly boosted voltage output.

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CHAPTER 8

CONCLUSION

A new multiinput multioutput DC–DC Boost Converter with unified structure for hybridizing of power sources in Solar is presented here. This converter has just one inductor. The converter can be used for transferring energy between different energy resources such as solar like battery and SC. In this, FC and battery are considered as power source and BES, respectively. Also, the converter can be utilized as single input multioutput converter. It is possible to have several outputs with different voltage levels. The converter has two main operation modes which in battery discharging mode both of input sources deliver power to output and in battery charging mode one of the input sources not only supplies loads but also delivers power to the other source (battery). Outputs with different dc voltage levels are appropriate for connection to multilevel inverters. In Solar, using of multilevel inverters leads to torque ripple reduction of induction motors. Also, Solar which use dc motors have at least two different dc voltage levels, one for ventilation system and cabin lightening and other for supplying electric motor.

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Programme Name: Computer Science& Engineering
Programme code : BTHCS

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5.	19TD1505	BHARATHKUMARAN .M	*
6.	19TD1506	CHARUMATHY .K	*
7.	19TD1507	DHAKSHAYINI .S	*
8.	19TD1508	DHANUSHKODI. P	*
9.	19TD1509	GOUTHAM .G	*
10.	19TD1510	GOWTHAM .V	*
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SOLAR PANEL FAULT DETECTION USING DATA MINING PROCESS

PROJECT REPORT (PHASE - II)

Submitted by

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This is to certify that the Project Work titled **"SOLAR PANEL FAULT DETECTION USING DATA MINING PROCESS"** is a bonafide record of the work done by **SANDHIYA.A (19TD1531), SWETHA.T (19TD1539)** in partial fulfillment of the requirement for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** of the **Pondicherry University** during the Academic year 2022 - 2023.

19/6/23

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EXTERNAL EXAMINER

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ACKNOWLEDGEMENT

With immense pleasure, we would like to place on record our thanks to all those who have contributed to the successful completion of this project work.

We are duly bound to express our deep sense of gratitude to our honorable Chairman Janab **Er. B. Mohamed Farouk B.E.,** for his tremendous support and encouragement providing us a better learning environment with laboratory facilities and the entire college infrastructure to equip ourselves.

We deem it a privilege to record our gratefulness to our beloved Principal **Dr. S. SEENUVASAMURTHI, M.E., Ph.D.,** for his unflinching support and consistent encouragement. He has constantly motivated us to remain focused on achieving this project work magnificently.

We are grateful to **Mrs. J. ROSELIN LOURD, B.E., M. Tech,** Head of the Department, **Department of Computer Science and Engineering** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project investigation in depth.

We would like to express our pleasure to the thankful our guide **Mrs. G. VELVIZHI, M.Tech., (DCS)** Assistant Professor, Department of Computer Science and Engineering her the valuable guidance and encouragement throughout the project.

We thank all the faculty members of Department of Computer Science & Engineering, Parents and our friends for helping us to complete the project work successfully in time.

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ABSTRACT

The world's energy consumption is outpacing supply due to population growth and technological advancements. For future energy demands, it is critical to progress toward a dependable, cost-effective, and sustainable renewable energy source. Solar energy, along with all other alternative energy sources, is a potential renewable resource to manage these enduring challenges in the energy crisis. Solar power generation is expanding globally as a result of growing energy demands and depleting fossil fuel reserves, which are presently the primary sources of power generation. Fault identification in Photovoltaic (PV) array is a contemporary research topic motivated by the higher penetration levels of PV systems in recent electrical grids. Therefore, this work aims to define an optimal Machine learning (ML) structure of automatic detection and diagnosis algorithm for common PV array faults, namely, permanent (Arc Fault, Line-to-Line, Maximum Power Point Tracking unit failure, and Open-Circuit faults), and temporary (Shading) under a wide range of climate datasets, fault impedances, and shading scenarios.

CHAPTER IX

CONCLUSION

The aim of the project was to create a system that can detect faults in PV systems with the use of data mining processes and meteorological data. This was achieved by creating an expected output of a PV system which is compared to the actual output. The extent of what the system can detect turned out to depend on three parameters: The size of the power decreases, the threshold and the time horizon. The results found in this report shows that given a certain decrease, the threshold and time horizon can be appropriately tweaked in order to yield the wanted results of zero false positives, average days the same as the time horizon and good detection percentage (true positives compared to false negatives). In total, it is possible to detect faults in PV systems by utilizing machine learning and meteorological data. Data mining can be a valuable tool for solar panel fault detection. By collecting data from solar panel systems, preprocessing the data, extracting features from the data, and using data mining algorithms to identify faults, data mining can help to improve the reliability and efficiency of solar panel systems [4]. Data mining can also be used to identify faults in other components of the solar panel system, such as the inverter, the battery, and the wiring. By detecting faults early, the system can be repaired before it causes a major outage. Data mining can also be used to prevent faults from occurring in the first place. By detecting faults early and preventing them from occurring, data mining can help to save money on repairs and maintenance

ANALYSIS OF IMPLEMENTING AN ATTENDANCE MANAGEMENT SYSTEM BASED ON REAL TIME FACE RECOGNITION

PROJECT REPORT (PHASE - II)

Submitted by

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SAKTHIBALAN.V (19TD1530)

YOGESH.V (19TD1544)

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BACHELOR OF TECHNOLOGY

in

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ACKNOWLEDGEMENT

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We deem it a privilege to record our gratefulness to our beloved Principal **Dr. S. Seenuvasamurthi M.E., Ph.D.,** for his unflinching support and consistent encouragement. He has constantly motivated us to remain focused on achieving this project work magnificently.

We are grateful to **Mrs.J.Roselin Lourd, B.E., M.Tech,** Head of the Department, Department of **Computer Science and Engineering** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project investigation in depth.

We would like to express our pleasure to the thankful our guide **Mrs.J.Roselin Lourd, B.E., M.Tech., Assistant Professor,** Department of Computer Science and Engineering for the valuable guidance and encouragement throughout the project.

We thank all the Faculty members of Department of Computer Science & Engineering, Parents and our friends for helping us to complete the project work successfully in time.

RICHARD ANTONY.C (19TD1527)

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This is to certify that the Project Work titled **"Analysis of implementing an attendance management system based on real time face recognition"** is a bonafide record of the work done by **RICHARD ANTONY(19TD1527), SAKTHIBALAN.V(19TD1530), YOGESH.V (19TD1544)** in partial fulfillment of the requirement for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** of the **Pondicherry University** during the Academic year 2023 - 2024.

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Head of the Department
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INTERNAL EXAMINER

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ANALYSIS OF IMPLEMENTING AN ATTENDANCE MANAGEMENT SYSTEM BASED ON REAL TIME FACE RECOGNITION

ABSTRACT

Face recognition technology has gained significant popularity in recent years due to its various applications, including attendance tracking systems. This research paper presents the development and evaluation of a face recognition-based attendance system that utilizes real-time data to accurately and efficiently record attendance. The proposed system leverages advanced computer vision techniques and machine learning algorithms to recognize individuals in a classroom or workplace environment, enabling streamlined attendance management. The paper discusses the system architecture, dataset preparation, model training, and performance evaluation, demonstrating the system's effectiveness in real-world scenarios.

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Puducherry - [illegible]

CONCLUSION

This method will significantly aid in the digitalization of classrooms and aid in eradicating the issues with outdated attendance systems. Using this method, the record keeper can view attendance automatically without spending any more money or energy, in contrast to the proposed system, which only requires very basic equipment like a camera, laptop or personal computer, and a local network. This approach is safe, dependable, and simple to apply. Many issues with the current attendance system will be resolved by the proposed system, and we may further enhance our system to make it more scalable and effective by employing quicker systems and more potent algorithms. This system is a reliable, accurate, and efficient biometric system that can be used in various settings, including educational institutions, government agencies, and private organizations. The system offers several advantages over traditional attendance tracking methods, including speed, accuracy, and security. However, the system also has some limitations and challenges that need to be addressed, including privacy concerns and the accuracy of facial recognition technology. Overall, the face recognition-based attendance system is a promising solution for attendance tracking and management.

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WEB SCRAPING TO COLLECT DATA FROM ETL WITH PIPELINE

PROJECT REPORT (PHASE - I)

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in

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ABSTRACT

Web Scraping is the process of extracting data from web pages, mainly targeting this task are about automated web data extraction and finally storing that data into a Csv file. Python language is implemented for carrying out the data from Web pages using requests and BeautifulSoup libraries ETL(Extract, Tranform, Load) is a data integration process that combines data from multiple data sources into a single, also responsible for cleaning, their customization and transformation, consistent data store that is loaded into a data warehouse or other target system. It is responsible for the extraction of data, their cleaning, conforming and loading.

VI. CONCLUSION

Regarding this system, I tried to use and present different semantic web tools and technologies. Although the application itself is not particularly complex, I tried to take care of all the details.

I hope I have succeeded in providing a comprehensive view of how the semantic web can increase the power of applications by giving access to more (flexible) data.

Further steps may include, for example, an integration with accident data from other nations to create one unique database. In addition, hospital accident records and park attendance data could be connected to the source. These data together would provide a single, comprehensive view that could be used to prevent further accidents.

CLASSIFICATION OF NETWORK INTRUSION DETECTION SYSTEM USING RECURRENT NEURAL NETWORKS

PROJECT REPORT (PHASE - II)

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ABSTRACT

A Network Intrusion Detection System (NIDS) is a key technology in network security that detects packets of malicious or unwanted abnormal activity occurring in the network. These network intrusion detection systems have been studied together with machine learning and deep learning. In existing system, the performance of a discretization preprocessing method with a CNN-based classifier on the class imbalance problem of network traffic data has been investigated. The preprocessing method adds a discretization algorithm for continuous variables is the commonly used conventional preprocessing method. Firstly, a comprehensive dataset comprising both normal and attack instances will be collected and pre-processed. Various network traffic features will be extracted, encompassing both packet-level and session-level attributes. Subsequently, a Recurrent Neural Network architecture, such as Long Short-Term Memory (LSTM) or Gated Recurrent Unit (GRU), will be designed and trained on the dataset. The model will learn to classify network traffic instances into different intrusion categories, thereby enabling real-time detection of anomalous activities. The proposed method called Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU) was tested using the NSL-KDD dataset and yields the accuracy achieved by the gated recurrent unit model, which separates normal and attack was 97.32%.

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CHAPTER – XII

CONCLUSION

The fast growth of internet usage, which generates a large amount of valuable digital data, draws attackers who seek to illegally obtain economic rewards and other benefits. This study investigates the RNN algorithms for IDS and summarises the results of experiments performed on NSL-KDD dataset dataset using RNN. Long Short Term Memory (LSTM) and Gated Recurrent Unit (GRU) were applied to detect intrusion in huge network traffic. The accuracy achieved by the gated recurrent unit model, which separates normal and attack was 97.32%.

In future, grid search optimization can be used for choosing values of optimizing hyperparameters like batch size, dropout, pooling size to achieve better performance.

FACE RECOGNITION OPEN CV BASED ATM SECURITY SYSTEM

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ABSTRACT

The purpose of this paper is to improve security of the ATM model. We have posited a new concept that enhances the overall experience, usability of the transaction at the ATM. We improve Features like face recognition and One Time Password that used for the enhancement of security of accounts and privacy of users. Face recognition technology helps the machine to identify each and every user uniquely thus making face as a key. This completely eliminates the chances of fraud Due to theft and duplicity of the ATM cards. Moreover, the randomly generated OTP frees the user from remembering PIN as it itself acts as a PIN. In this modern world, every people use ATM machines for withdrawal and transferring Cash. Each human Being has different facial characteristics hence this process will be more applicable. There is no fear of losing the ATM card. By comparing various Technologies that are used so far in ATM security, it is observed that facial recognition technology Performs better and safer than other technologies. This is making easy and protected transaction and also Maintaining user-friendly environment with the user. This process is one of the most promising technologies at electronic money transaction. The growth in The field of electronic transactions has resulted in a greater demand for fast and accurate user Identification and authentication. People greatly depend on the Automated Teller Machine (ATM) for Conveniently meeting their banking needs.

ACKNOWLEDGEMENT

With immense pleasure, we would like to place on record our thanks to all those who have contributed to the successful completion of this project work.

We are duly bound to express our deep sense of gratitude to our honourable Chairman **Janab Er. B. MOHAMED FAROUK, B.E.,** for his tremendous support and encouragement providing us a better learning environment with laboratory facilities and the entire college infrastructure to equip ourselves.

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CHAPTER 10
CONCLUSION

This project can overcome the issue of impersonation of a cardholder. This is like a two factor authentication method which is used to confirm that the transaction is done by the card owner or the persons trusted by the owner using face recognition lists the card usage of the unauthorized users who hold the password of someone's card. Thus, this ATM model provides security against exploitation of identity, by using a verification system using face recognition to the identity and confirm the user and it will scale back forced transactions to an excellent extent. Facial recognition has proven to be one of the most secure methods of all biometric systems to a point for high level security and to avoid ATM robberies and provide security for ATM. It replaces the traditional ATM system. It has advantages such as saves manufacturing cost of cards and overcomes drawbacks of the traditional system like carrying the ATM card, losing of card, fraud calls related to ATM card, etc. With new improved techniques in the field of artificial Intelligence that help eliminate more disturbances and distortions, the rate of effectiveness of the system can be improved.

INNOVATE A MODEL PHISHING WEBSITE AND DETECTION WITH FEATURES TOOL

PROJECT REPORT (PHASE - II)

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Abstract

The phishing email is one of the significant threats in the world today and has caused tremendous financial losses. Although the methods of confrontation are continually being updated, the results of those methods are not very satisfactory at present. Moreover, phishing emails are growing at an alarming rate in recent years. Therefore, more effective phishing detection technology is needed to curb the threat of phishing emails. In this paper, we first analysed the email structure. Then based on an improved Recurrent Convolution Neural Networks (RCNN) model with multilevel vectors and attention mechanism, we proposed a new phishing email detection model named, which is used to model emails at the email header, the email body, the character level, and the word level simultaneously. To evaluate the effectiveness of, we use an unbalanced dataset that has realistic ratios of phishing and legitimate emails. Experimental results show that the. Meanwhile, the ensure that the filter can identify phishing emails with high probability and filter outlegitimate emails as little as possible. This promising result is superior to the existing detection methods.

CHAPTER XVIII

CONCLUSION

We use a new deep learning model named to detect phishing emails. The model employs an improved RCNN to model the email header and the email body at both the character level and the word level. Therefore, the noise is introduced into the model minimally. In the model, we use the attention mechanism in the header and the body, making the model pay more attention to the more valuable information between them. We use the unbalanced dataset closer to the real-world situation to conduct experiments and evaluate the model. The model obtains a promising result. Several experiments are performed to demonstrate the benefits of the proposed model. For future work, we will focus on how to improve our model for detecting phishing emails with no email header and only an email body.

The novelty of the paper in comparing to the analysed sources in the literature review consists mainly in the fact that a similar research topic, it was a detailed analysis of phishing emails, was not dealt with by any of them in the way carried out in our research. It was oriented to the detail understanding of phishing emails and extending the knowledge base for education and training in phishing email defence. The research of phishing emails included statistics, their classification, segmentation and analysis using the text analytical SW Type. In the discussion, the acquired knowledge was confronted with other sources, especially in the recognition characteristics of phishing emails.

Due to the lack of awareness about the phishing attacks makes the attack successful. The users should not blindly open the link received through e-mail and enter their personal information. The phishing attack are not easily identified. The web spoofing attacks occur even after inventing new prevention methods. The main reason for this study is to educate users and help them to identify the phishing website from the legitimate site by using the URL. The most important way to protect the user from phishing attacks are by educating the user about the possible ways of phishing attacks

DETECTION OF ANDROID MALWARE USING RECURRENT NEURAL NETWORK

PROJECT REPORT (PHASE - II)

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ABSTRACT

With Android's dominant position within the current smartphone OS, increasing number of malware applications pose a great threat to user privacy and security. This study investigates the RNN algorithms for IDS and summarises the results of experiments performed on Drebin dataset using RNN. In existing system, a fast Android malware detection framework are pre-processed with the N-Gram technique and the FCBF (Fast Correlation-Based Filter) algorithm based on symmetrical uncertainty is employed to reduce feature dimensionality. Finally, the dimensionality reduced features are input into the CatBoost classifier for malware detection and family classification. Models of Recurrent Neural Network like Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU) were applied to detect intrusion in huge network traffic. The accuracy achieved by the gated recurrent unit model of 98.69% in malware detection.

CHAPTER – XI

CONCLUSION

This study investigates the RNN algorithms for IDS and summarises the results of experiments performed on Drebin dataset using RNN. Long Short Term Memory (LSTM) and Gated Recurrent Unit (GRU) were applied to detect intrusion in huge network traffic. The accuracy achieved by the gated recurrent unit model of 98.69% in malware detection.

In future, grid search optimization can be used for choosing values of optimizing hyperparameters like batch size, dropout, pooling size to achieve better performance.

CONFIDENTIAL DATA ENCRYPTION AND DATA RETRIEVAL USING QR AUTHENTICATION SYSTEM

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JUNE 2023

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This is to certify that the Project Work titled **"Confidential Data Encryption and Data Retrieval Using QR Authentication System"** is a bonafide record of the work done by **DHANUSHKODI .P (19TD1508), SABANA BANU.S (19TD1529) ,SOWMYA.J (19TD1537)** in partial fulfillment of the requirement for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** of the **Pondicherry University** during the Academic year 2022 - 2023.

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ACKNOWLEDGEMENT

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ABSTRACT

The QR code cryptography with a password and sends it to the required hiding the information QR code. Securing and hiding personal confidential information has become a challenge in these modern days. Due to the lack of security and confidentiality, there are chances that forgery of the confidential information or unauthorized access of a system can cause a big margin loss to a person or a system. At present, confidentiality is maintained in old ways and for that reason, there are possibilities that the confidential information might get forged or hacked. Personal confidential information can be securely shared with the expected person and the person can verify the information by checking its authenticity. Similarly, confidential information can also be kept securely hidden and used to meet a specific purpose like getting access privilege of a secured system and the system can validate the confidential information by checking whether the person is authorized or the information is valid. QR codes are being used increasingly to share data for different purposes. Ininformation communication, QR code is important because of its high data capacity. However, most existing QR code systems use insecure data format and encryption is rarely used

CHAPTER VIII

CONCLUSION

In modern days, the usage of data is increasing and the ways of forging data is increasing as well. Authenticity and validity of data is a very important issue nowadays. This project presents an innovative method to prevent such forgery of data like personal confidential information and ensures the authenticity and validity of the confidential information. Information,especially confidential information. It replaces sensitive information on paper documents with QR Codes and let only the registered user decode it with our system. of decoding procedure naming QR Code Decoder, QR Code Verification and QR Code Validation. The SQRC system can be applied to a range of real- world applications that involve sensitive information. Throughout the project development work, we focused on QR Code generation part, QR Code decoding part, QR Code verificationpart, QR Code validation part and also RSA Key generation part, learnt about different attributes of 2D codes, especially QR Code and also learnt about cryptography, especially asymmetric cryptography like RSA public key cryptography and RSA digital signature. Then we performed testing the system following the possible test cases and got the expected results as these were required by the proposed system. By using the web application, secure encrypted QR Code can be generated and then, this QR code can be decoded by means of confidential information verification.

A FULLY AUTOMATED AI BASED TRADING SYSTEM

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ABSTRACT

Generating reliable and meaningful product demand predictions is an open challenge in the industrial environment. Demand forecasting is still an active avenue of research since it significantly affects business profitability because of uncertainties related to demand predictability, high product variety, and supply fluctuation. This paper deals with a practical real-life case study of a leading international company. Particularly, we investigate the demand forecasting for the industrial products .The proposed implementation was how the historical demand data could be utilized to forecast future demand and how the automatic buy and selling of the stocks performed and it also able to do portfolio management. The historical demand information was used to develop several autoregressive integrated moving average (ARIMA) models by using Box–Jenkins time series procedure and the adequate model was selected according to four performance criteria: Akaike criterion, Schwarz Bayesian criterion, maximum likelihood, and standard error. The selected model corresponded to the ARIMA (1, 0, 1) and it was validated by another historical demand information under the same conditions. The results obtained prove that the model could be utilized to model and forecast the future demand in this food manufacturing. These results will provide to managers of this manufacturing reliable guidelines in making decisions.

CHAPTER VIII

8.CONCLUSION

Demand forecasting is an important function of managing supply chain. Its integration with other business functions makes it one of the most important planning processes business can deploy for future. In this context, we developed an ARIMA model to model the demand forecasting of the finished product in a food manufacturing by using Box– Jenkins time series approach. The historical demand data were used to develop several models and the adequate one was selected according to four performance criteria: SBC, AIC, standard error, and maximum likelihood. The model that we selected and which minimizes the four previous criteria is ARIMA (1, 0, 1). The results obtained proves that this model can be used for modelling and forecasting the future demand in this food manufacturing; these results will provide to managers of this manufacturing reliable guidelines in making decisions.

EXPRESSIVE & DEPLOYABLE UPI SEAMLESS TRANSACTION USING RNN ALGORITHM

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ABSTRACT

In today's world, banking plays an indispensable role among all people. If the banking is user friendly then it would benefit all users. So, this situation has forced us to move towards mobile banking system. Emerging technologies have supported people with mobile devices and data connections. Mobile banking applications provide an easy door-step solution for customers. In the current trend of digital and cashless economy, mobile based app solutions are comprehensible and omnipresent, expediting a wide range of banking financial services and non–financial services. UPI is one of the mobile based applications which facilitates online transaction. It is simple and reliable application. Besides positives, there are also some hidden security issues to be resolved. UPI uses PIN to complete the transaction. The PIN entry can be noticed by nearby adversaries. Hence, a direct observation attack based on shoulder surfing becomes a great concern. To cope up with this issue, we come up with the solution of providing high level security after acknowledging that there was a pitfall with the assumption of the previous methods. In our proposed method, we strongly focus on security by proposing a novel approach called Covert Attentional Shoulder Surfing (CASS). In our proposal, we also implement the RNN Classifiers to analyses the behavior characteristics of the user to detect or to resist access by unauthorized people. Our solution or model is also supported by all platforms. It is designed to be used in all platforms (platform Independent) like Android, IOS and other mobile platforms.

CHAPTER 13

CONCLUSION AND FUTURE ENHANCEMENT

In conclusion, mobile payment has become increasingly popular worldwide, offering users the convenience of making payments anytime and anywhere. However, along with this convenience comes a set of payment security challenges that need to be addressed. This paper presents the first comprehensive review of secure mobile payment, aiming to provide an overview of the system structure and security technologies employed in mobile payment applications.

The paper categorizes mobile payment into two main types: TPC-led mobile payment and Bank-led mobile payment. TPC-led mobile payment refers to payment services provided by third-party payment companies, while Bank-led mobile payment is offered by traditional banking institutions. The system structures of these mobile payment methods are discussed and summarized, providing insights into their operations and functionalities.

To ensure secure mobile payments, several key security technologies are examined in the paper. These technologies include Tokenization, PAN binding (linking a bank card's primary account number), and Secure Payment Authentication. The paper explores the hardware and software implementations of these security technologies, highlighting their strengths and weaknesses. Furthermore, it discusses the security challenges faced by these technologies, identifies any existing vulnerabilities, and proposes potential solutions.

In addition to the technical aspects, the paper also provides a comparative analysis of popular mobile payment applications. It covers notable platforms such as Alipay, WeChat Pay, Apple Pay, Samsung Pay, and Google Pay. The discussion focuses on their security features, user experience, and adoption rates, offering a comprehensive understanding of the strengths and weaknesses of each application.

EXTENDED IDENTITY BASED AGGREGATION SCHEME FOR BANKING APPLICATIONS FOR PREVENTING AND DETECTING USING MITIGATE ATTACKS

PROJECT REPORT (PHASE - II)

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ABSTRACT

Online banking attacks, security analysis of Internet banking. Several modern models are evolving and being applied to many banking systems for preventing and detecting online banking frauds. The financial sector is the part of the economy that consists of companies and institutions that provide financial services to commercial and retail customers. It covers a wide range of industries, including banks, investment or insurance companies, and real estate companies. Financial institutions are exposed to cyber-attacks. Banks are places where money is available, and for cybercriminals, attacking banks offers a variety of ways to make a profit through extortion, robbery, and fraud, while national governments also provide financial support for hackers, they target political and ideological influence. However, they have no effective detection mechanism to identify valid users and trace their unlawful activities. Also they are not secure enough to prevent fraudulent users from performing fraudulent transactions over the Internet. This paper discusses the various types of online banking attacks and preventive measure to minimize the risk and to deal with these attacks.

CHAPTER IX

CONCLUSION

We have presented the privacy-preserving e-KYC approach based on the blockchain. Our proposed scheme delivers secure and decentralized authentication and verification of the e-KYC process with the user's consent enforcement feature. In our scheme, the privacy of both customers' identity documents stored in the cloud is guaranteed by the symmetric key and public key encryption while the sensitive transaction data stored in the blockchain is encrypted by symmetric key encryption and CP-ABE. Our scheme also allows the KYC data to be updated by the data owner or the customer. In addition, we devised an access policy update algorithm to enable dynamic access authorization. For the evaluation, we performed comparative analysis between our scheme and related works in terms of the computation cost, the communication cost, and performance. The experimental results showed that our scheme outperforms existing schemes in terms of performance, comprehensive KYC compliance features, and the scalable access control mechanism. For future works, we will test a larger sample of data in the real cloud environment and measure the throughput of the system in accommodating high number of e-KYC registration and verification requests. In addition, we will investigate the technique to enable batch verification of e-KYC transactions stored in the blockchain with the searchable encryption feature.

SECURE FILE SHARING ON CLOUD USING CELLULAR AUTOMATA BASED ENCRYPTION

PROJECT REPORT (PHASE - II)

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SECURE FILE SHARING ON CLOUD USING CELLULAR AUTOMATA BASED ENCRYPTION

ABSTRACT

Data Lake was architected from the ground up for cloud scale and performance. With Azure Data Lake Store any organization can analyse all of its data in a single place with no artificial constraints. The Data Lake Store can store trillions of files where a single file can be greater than a petabyte in size which is 200x larger than other cloud stores. This means there is no need to rewrite code as there is increase or decrease of the size of the data stored or the amount of compute being spun up. Data Lake also takes away the complexities normally associated with big data in the cloud, ensuring that it can meet your current and future business needs.

In this project we are creating the azure account to use the data lake and were, we are storing the data in the data lake. Data Lake can store data of any type. And we are using the Cellular Automaton encryption algorithm and **PSEUDO-RANDOM NUMBER GENERATOR (PRN)** to solve the problem in the existing system and this algorithm verifiable file search problem and develop protocols to enable verifiable file search for enterprise-scale cloud storage applications. And, also we are propose a multiple key based-secure key encryption scheme with low overhead **cipher texts and aggregate keys**. which can flexibly extend the number of participants in associate degree passing cloud surroundings the structure of the Group style.

This protocol is applied in cloud computing to support secure and economical information sharing. The data can also be delete if the user don't need the data or in case of change is systems.

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CHAPTER VII

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION:

This propose a file encryption approach that utilizes the Cellular Automata (CA) algorithm and the Pseudo-Random Number Generator (PRNG) for key generation. The goal is to secure files stored in the Azure cloud and prevent unauthorized access and searching of the files. The CA algorithm is employed for file encryption. Cellular Automata is a computational model where a grid of cells evolves over time based on predefined rules. By applying the CA algorithm to the file, it undergoes a series of transformations that make it difficult for anyone without the correct decryption key to understand or extract meaningful information from the encrypted file. This process ensures the confidentiality of the stored file. To generate the encryption key, the authors employ a Pseudo-Random Number Generator (PRNG). A PRNG is an algorithm that produces a sequence of numbers that appear random but are actually deterministic, meaning they can be reproduced given the same initial conditions. The random key generated by the PRNG is used in the decryption process, making it challenging for hackers to guess or break the key and access the encrypted file. The authors claim that their proposed protocols are provably secure under malicious clouds. This means that they have provided a rigorous mathematical analysis or proof to demonstrate that the encryption scheme they propose can withstand attacks from potentially malicious entities, such as cloud service providers. By ensuring the security of the protocols, the authors aim to protect the stored files from unauthorized access and maintain the confidentiality of the data.

7.2 FUTURE ENHANCEMENT:

A future enhancement, you can consider incorporating another security-based algorithm to enhance the overall security of the cloud system. There are various algorithms available that can provide additional layers of protection to the stored files.

A FRAMEWORK FOR DETECTING SQL INJECTION ATTACK USING RECURRENT NEURAL NETWORK

PROJECT REPORT (PHASE - II)

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With immense pleasure, we would like to place on record our thanks to all those who have contributed to the successful completion of this project work.

We are duly bound to express our deep sense of gratitude to our honorable Chairman **Janab Er. B. Mohamed Farouk B.E.,** for his tremendous support and encouragement by providing us a better learning environment with laboratory facilities and the entire college infrastructure to equip ourselves.

We deem it a privilege to record our gratefulness to our beloved Principal **Dr. S. Seenuvasamurthi M.E., Ph.D.,** for his unflinching support and consistent encouragement. He has constantly motivated us to remain focused on achieving this project work magnificently.

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We would like to express our pleasure to the thankful our guide **Mrs.J.Roselin Lourd, B.E., M.Tech., Assistant Professor,** Department of Computer Science and Engineering for the valuable guidance and encouragement throughout the project.

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A FRAMEWORK FOR DETECTING SQL INJECTION ATTACK USING RECURRENT NEURAL NETWORK

ABSTRACT

The framework leverages the sequential nature of HTTP request parameters to effectively capture patterns indicative of SQL injection attempts. Specifically, Long Short-Term Memory (LSTM) networks, a type of RNN, are employed due to their ability to model temporal dependencies and handle variable-length sequences inherent in web traffic data. SQL injection attacks are one of the most common types of attacks on Web applications. These attacks exploit vulnerabilities in an application's database access mechanisms, allowing attackers to execute unauthorized SQL queries. In this study, we propose an architecture for detecting SQL injection attacks using a recurrent neural network autoencoder. The proposed architecture was trained on a publicly available dataset of SQL injection attacks. Then, it was compared with several other machine learning models, including ANN, CNN, decision tree, naive Bayes, SVM, random forest, and logistic regression models. The experimental results showed that the proposed approach achieved an accuracy of 94% and an F1-score of 92%, which demonstrate its effectiveness in detecting SQL injection attacks with high accuracy in comparison to the other models covered in the study.

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CONCLUSION

A deep learning architecture model based on an RNN autoencoder was proposed for detecting SQL injection attacks. The autoencoder was trained to learn a compressed representation of the input data, while the RNN used this compressed representation to make binary classification predictions. In this study, the RNN autoencoder was trained with different optimization techniques on a public SQL injection dataset. The performance of the model was evaluated using standard evaluation metrics, such as accuracy, precision, recall, and F1-score. Additionally, an ROC curve was calculated to evaluate the model's performance. The experimental results showed that the proposed approach achieved an accuracy of 94% and an F1-score of 92%, indicating that the RNN autoencoder is a promising method for detecting SQL injection attacks. As part of future research, we plan to explore the use of a more complex architecture for the RNN autoencoder to detect SQL injection attacks. Additionally, we acknowledge that the dataset used in this study was relatively small, and we recommend expanding the dataset and implementing the models in real-world scenarios in future investigations.

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An ISO 9001:2015 Certified Institution

The number of Information Technology students undertaking Mini Projects & Projects for the academic year 2022-2023 is 49.

Programme Name: Information Technology
Programme code : BTHIT

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2.	19TH0503	AJEETH A	*
3.	19TH0504	ARAVINDKRISHNA S	*
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35.	19TH0539	SIVABALAN J	*
36.	19TH0540	SUJITH. K	*
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SPAM IDENTIFICATION ON DATASET USING MACHINE LEARNING TECHNIQUES

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We are grateful to **Dr. N. Sowri Raja Pillai, B.E., M.Tech, Ph.D, M.B.A.**, Head of the Department, Department of **Information Technology** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project investigation in depth.

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ABSTRACT

One of the most accepted ways of communicating is the use of email for personal messages or for Business purpose. A significant concern with the use of email is the issue of spam. The worst part about unwanted mail is that, these invade users beyond their consent and the bombardment of those spam mails fills the user's entire email space with it the issue of wastage of network capacity and time consuming verification and deletion of junk mail makes it even more worrisome. Spam is one of the main headaches that targets the goal of the email. It is important to make a distinction between ham email and spam. Many methods have been Suggested classification of email as spamming or ham. Spam filtering is a technique that allows non-essential and unwanted spam, such as spam, to be discovered and prevented from entering the user's inbox. As the demand for deletion of unwanted mail increased, the area became magnetic for researchers. Filter classification can be categorised into two techniques – one based on machine learning and one based on non-machine learning techniques. Machine learning techniques consists of Naïve Bayes, Support Vector Machine, AdaBoost and Decision Tree. While non-automatic learning techniques include blacklist/whitelist, signatures, verification of letterhead, etc. The purpose of this document is to present the performance benchmarking of a variety of pre-existing classification techniques.

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CHAPTER 9

CONCLUSION

In this paper, we proposed a modified Transformer model that aims to identify SMS spam. We evaluated our spam Transformer model by comparing it with several other SMS spam detection approaches on the SMS Spam Collection v.1 dataset and UtkMl's Twitter dataset. The experimental results show that, compared to Logistic Regression, Naïve Bayes, Random Forests, Support Vector Machine, Long Short-Term Memory, and CNN-LSTM [22], our proposed spam Transformer model performs better on both dataset.

On the SMS Spam Collection v.1 dataset, our spam Transformer has a better performance in terms of accuracy, recall, and F1-Score compared to other classifiers. Specifically, our modified spam Transformer approach accomplished an exceeding result on F1-Score.

Additionally, on the UtkMl's Twitter dataset, the results from our modified spam Transformer model demonstrate its improved performance on all four aspects in comparison to other alternative approaches mentioned in this paper. Concretely, our spam Transformer does exceptionally well on recall, which contributes to a distinct F1-Score.

AN ENTERPRISE APPLICATION INTEGRATION FOR MANAGING SECURITY IN CLOUD COMPUTING

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ABSTRACT

The abstract is focused on Cloud Health Record (CHR) is increasingly being implemented in many developing countries. It is the need of the hour because it improves the quality of healthcare. Recent news of security breaches has put a question mark on this system. Despite its increased usefulness, and increasing enthusiasm in its adoption, not much attention is being paid to the ethical issues that might arise. The frequency of data breaches in healthcare prompted this project.

The motivation of this project is to improve and extend on existing work by implementing a Block chain based Cloud Health Record/medical record for security, integrity, privacy, and information asymmetry and data interoperability.

The main importance is to produce confidentiality to patient medical records victimization. Patient information secrecy or confidentiality is one amongst the foremost necessary pillars of drugs. Protecting the personal details of a patient isn't simply a matter of ethical respect, it's essential to bond trust between the doctor and also the patient.

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CONCLUSION

The conclusion focuses on the growing adoption of Cloud Health Records (CHR) in underdeveloped nations. It is crucial because it raises the standard of healthcare. There is uncertainty about this technology due to recent reports of security breaches. The potential ethical problems are not receiving much attention, despite its growing use and the fervor with which it is being adopted. This idea was inspired by how frequently healthcare data breaches occur. By adopting a block chain-based Cloud Health Record/medical record for security, integrity, privacy, information asymmetry, and data interoperability, this project aims to enhance and expand on previous efforts.

Maintaining patient privacy when it comes to their medical records is crucial. Confidentiality of patient information the creation of patient medical record confidentiality is of utmost relevance for future work. Confidentiality or the privacy of patient information is one of the most important foundations for pharmaceuticals. Building trust between the patient and the doctor requires more than just upholding ethical standards when it comes to protecting a patient's personal information.

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CREDIT CARD FRAUD DETECTION USING STATE OF THE ART MACHINE LEARNING AND DEEP LEARNING ALGORITHUM

PROJECT REPORT (PHASE-II)

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We are grateful to **Dr. N. Sowri Raja Pillai, B.E., M.Tech, Ph.D, M.B.A.,** Head of the Department, Department of **Information Technology** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project in depth.

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ABSTRACT

This menacing hazards has grown in the current period, as the majority of transactions are now completed entirely online using credit card information. Frauds due to Credit Cards is a broad phrase that refers to any type of fraud involving a payment card, specifically a credit cards.The solitary purpose of such transgressions is usually to gain goods and services, or to make a huge payment to another account without the owner's consent. According to the Nilson Report, By 2025, due to credit card fraud the United States has been projected to suffer losses up to 12.5 billion dollars. Using Machine learning algorithms to detect Credit card fraud is a process in which the data is investigated through various techniques to achieve the best possible outcomes in detecting and impeding fraudulent transactions. In order to evaluate different algorithms which accurately detect credit card fraud we have used techniques such as Random Forest, XGBoost, ANN (Artificial Neural Network). The results of these models can be used to effectively detect any credit card transaction happening whether a genuine one or fraudulent.

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XI. CONCLUSION

Maes and his team proposed using Bayesian and Neural Network in the credit card fraud detection. Their results showed that Bayesian performance is 8% more effective in detecting fraud than ANN, which means that in some cases BBN detects 8% more of the fraudulent transactions.

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EARLY HEART DISEASE PREDICTION USING MACHINE LEARNING

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ACKNOWLEDGEMENT

With immense pleasure, we would like to place on record our thanks to all those who have contributed to the successful completion of this project work.

We are duly bound to express our deep sense of gratitude to our honorable Chairman **Janab Er. B. Mohamed Farouk B.E.,** for his tremendous support and encouragement by providing us a better learning environment with laboratory facilities and the entire college infrastructure to equip ourselves.

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We are grateful to **Dr. N. Sowri Raja Pillai, B.E., M.Tech, Ph.D, M.B.A.,** Head of the Department, Department of **Information Technology** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project investigation in depth.

We would like to express our pleasure to the thankful guide **MS.S. Maduvandhi, M.Tech.,** Assistant professor , Department of Information Technology for the valuable guidance and encouragement throughout the project.

We thank all the Faculty members of Department of Information Technology, Parents and our friends for helping us to complete the project work successfully in time.

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ABSTRACT

Heart attack disease is one of the leading causes of the death worldwide. In today"s common modern life, deaths due to the heart disease had become one of major issues, that roughly one person lost his or her life per minute due to heart illness. Predicting the occurrence of disease at early stages is a major challenge nowadays. Machine learning when implemented in health care is capable of early and accurate detection of disease. In this work, the arising situations of Heart Disease illness are calculated. Datasets used have attributes of medical parameters. The datasets are been processed in python using ML Algorithm i.e., Decision Tree Classifier. This technique uses the past old patient records for getting prediction of new one at early stages preventing the loss of lives. In this work, reliable heart disease prediction system is implemented using strong Machine Learning algorithm which is the Random Forest algorithm. Which read patient record data set in the form of CSV file. After accessing dataset the operation is performed and effective heart attack level is produced. Advantages of proposed system are High performance and accuracy rate and it is very flexible and high rates of success are achieved.

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6.1 CONCLUSION

Cardiovascular and chronic respiratory diseases are some of the issues faced byhealthcare. Due to the time-independent lifestyle, both diseases affect mortality across the globe. Heart attack occurs without any apparent symptoms. The effective identificationof themachine-learning model concerning data is a challenging task. In this paper, wehavediscussed the details of predicted models for the forecasting of vital sign values that areultimately helpful for the realization of a machine-learning-based systemfor the predictionofchronic diseases. This study also aims to facilitate caregivers and medical experts toprovidein-time medical assistance to the patients to reduce the fatality rate due to cardiovascular andchronic respiratory complications in indoor patients, particularly after surgical procedures. It is necessary to assess the appropriateness of the prediction model according to the natureofthe data.

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VIRTUAL DEEP LEARNING ALGORITHM TO MITIGATE INTRUSION ATTACKS IN SDN NETWORKS

PROJECT REPORT (PHASE-II)

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ABSTRACT

There is drastic increase in needs of networking and data sharing in today's world. Such globalization of increased information technology and development there exists need of network security. Firewalls may provide some level of security but they never alert administrator for upcoming attacks. One of the network monitoring system is Intrusion Detection Systems (IDS). Many research works focused on machine learning approach for enhancing the efficiency of the intrusion detection system and to detect malicious network activity automatically on the basis of network packet behaviors. The proposed model is designed using machine learning approach for detection of malicious activities of the network packets. For that KDD-99 dataset is used. First of all the dataset is normalized for reducing calculation complexity result analysis it is seen that while selecting more than 15 features DNN outperforms better whereas below 15 features co-relation outperforms best. After feature reduction data clustering is performed using k-mean clustering algorithm. In final step of proposed algorithm multilevel Deep classifiers, based on Deep Neural Network, are designed for classification of dataset into five attack categories i.e. DOS, U2R, R2L, Probe and Normal. As compared to some other multilevel classifier work the proposed algorithm proves its efficiency in terms of high accuracy, high detection rate and False Alarm Rate (FAR).

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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

Machine learning techniques have proven to be effective for intrusion detection. Intruder detection of intruders can be achieved with machine learning techniques, although the accuracy of detection also depends on several other factors. Few of them choose the right set of functions, choose the appropriate training and test data, etc. Choosing the appropriate attributes for these factors can improve performance. However, machine learning algorithms can present few weaknesses, such as: incorrect classification of network data due to poisonous learning. The Multilevel DNN model is designed using machine learning approach for detection of malicious activities of the network packets. For that KDD-99 dataset are used. First of all the dataset are normalized for reducing calculation complexity, further features are reduced using Deep Classifiers. The reduced features determine that only efficient features can be used for malicious behavior detection. From result analysis it are seen that while selecting more than 15 features DNN outperforms better whereas below 15 features co-relation outperforms best. After feature reduction data clustering are performed using k-mean clustering algorithm. By using clustering, small datasets are built that represents the entire original dataset which can expressively reduce the training time of classifiers and improve the efficiency. In final step of Multilevel DNN multilevel hybrid classifiers, based on support vector machine, extreme learning machine and random forest, are designed for classification of dataset into five attack categories i.e. DOS, U2R, R2L, Probe and Normal. According to all these four

SPAM IDENTIFICATION ON DATASET USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

With the substantial rise of internet usage, social media has become a powerful communication medium to convey information, opinions, and feelings on various issues. Recently, memes have become a popular way of sharing information on social media. Usually, memes are visuals with text incorporated into them and quickly disseminate hatred and offensive content. Detecting or classifying memes are challenging due to their region-specific interpretation and multimodal nature. Several computational models have been investigated to perform the classification task. This work also explored visual and textual features using BERT, RNN, LSTM and BERT+RESNET models. Multimodal features are extracted by combining image (BERT+RESNET) and text (BERT, LSTM, RNN) characteristics. Results demonstrate that the textual strategy with BERT achieved the highest weighted F1-score (0.93) and recall (0.93). Moreover, the BERT-Text+RESNET outperformed the other models concerning the multimodal memes detection by achieving the highest F1-score of 0.77.

Keywords-LSTM, RNN, BERT, BERT+RESNET, Deep Learning, Abusive Language Detection

CHAPTER 8

CONCLUSION AND FUTURE ENHANCEMENT

8.1 CONCLUSION

Social media is an important way of communicating on social media platforms like Twitter, Facebook, YouTube, etc.,.peoples are posting their opinions that have can impact on alot of users. The comments and memes that contain positive, negative and mixed feeling of words as well as memes and the comments contain abusive and not abusive words are classified as abusive language identification. For identifying on social media text and memes in abusive language in different pretrained models like, RNN, BERT, LSTM are text feature extraction, RESNET+BERT are visual feature extraction. Among the obtained result for identifying abusive text and memes for BERT model accuracy is 0.74 and LSTM model accuracy is 0.73. Incorporating additional modalities The proposed solution currently focuses on the textual and visual features of memes, but there may be other modalities that could be informative for detecting offense, such as audio or user comments. Incorporating these additional modalities could improve the performance of the model. Incorporating context Memes are often created in response to current trends, and the context in which a meme is used could impact whether it is abusive or not. Incorporating context information, such as the date the meme was created or the topic it is related to, could improve the model's ability to detect abusive.

8.2 FUTURE ENHANCEMENT

Our project addressed the abusive language issues extracting textual data after processing only. However, images are also widely used for the same. Hence, in the future, the models can be constructed to include images with text can analyze the video dataset to capture more abusive language Related Posts.

The current dataset can be extended with more amounts of datasets to achieve better accuracy.

AN IMPLEMENTATION OF BLOCKAGE AND PROTECTING IN WIRELESS SENSOR NETWORK

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ABSTRACT

Sensor based IOT growing quickly on all over the manufacturing industries, agriculture fields, medical fields and our home too. WSN (Wireless Sensor Network) consists of small sensor nodes with minimal energy. Such nodes have the ability to monitor the physical conditions and communicate information among the nodes without requirement of the physical medium. However, due to distributed nature and their deployment in remote areas, these networks are vulnerable to numerous security threats that can adversely affect their performance. This problem is more critical if the network is deployed for some hospitals or war bases. If random attacks happen in WSNs the operations will collapse. We constructed cyber security algorithm to avoid those attacks. It identifies various possible attacks at different layers of the communication protocol stack in a typical WSN. Issues will be triggered to the user who are subscribed. Based on the trigger, site engineer/ managers will check and fix the issue.

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Enhanced Deep Learning Algorithm Photoacoustic Tomography Image Restoration In PSF Technique

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ABSTRACT:

- The spatial resolution of photoacoustic tomography (PAT) can be characterized by the point spread function (PSF) of the imaging system.
- A pixel-wise PSF map is further obtained by employing a multi-Gaussian-based fitting and interpolation algorithm.
- We perform phantom and in vivo mice imaging experiments to verify the proposed method, and the results show significant image quality and resolution improvement.
- It Is Based On Experimentally Measured PSF,Our Approach Should Be More Accurate Than Blind DE Convolution Methods.
- Our Method Complies With The Spatially Variant Resolution Characteristic In Cross-Sectional PAT, And Thus Achieved Better Performance Than Single PSF Deconvolution.

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XI. CONCLUSION

In this work, we proposed a method to restored PAT image resolution with the deconvolution of experimentally measured spatially variant point spread functions. In order to obtain an accurate pixel-wise PSF map, a comprehensive measurement procedure using black microspheres has been proposed. An optimization-based iterative PAT image restoration model are also designed to correct for the image quality degradation. Our method has been evaluated through phantom and in vivo small animal experiments and the results showed promising image quality enhancement.

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GENERALIZED EQUALIZATIONS MODEL FOR VIDEO ENHANCEMENT

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We deem it a privilege to record our gratefulness to our beloved Principal **Dr. S. Seenuvasamurthi M.E., Ph.D.,** for his unflinching support and consistent encouragement. He has constantly motivated us to remain focused on achieving this project work magnificently.

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ABSTRACT

The mainstay of the project is to analyze the relationships between image histogram and contrast/tone. In this project, we propose a generalized equalization model for image enhancement. Based on our analysis on the relationships between image histogram and contrast enhancement/ white balancing, we first establish a generalized equalization model integrating contrast enhancement and white balancing into a unified framework of convex programming of image histogram. We show that many image enhancement tasks can be accomplished by the proposed model using different configurations of parameters. With two defining properties of histogram transform, namely contrast gain and nonlinearity, the model parameters for different enhancement applications can be optimized. We then derive an optimal image enhancement algorithm that theoretically achieves the best joint contrast enhancement and white balancing result with trading-off between contrast enhancement and tonal distortion. Subjective and objective experimental results show favorable performances of the proposed algorithm in applications of image enhancement, white balancing and tone correction. Computational complexity of the proposed method is also analyzed.

KEY WORDS : Gamma correction, Pair of complementary gamma functions, Histogram equalization, Contrast- limited adaptive histogram equalization , Huge saturationvalue.

CHAPTER 7

CONCLUSION

In this paper, we discussed the relationship between grey balancing and contrast enrichment through the linearity and non-linearity functions of histogram transform using a comprehensive equalization model. The comprehensive equalization model keeps a balance between the contrast enrichment and grey balancing. If the transform is non- linear, then it is related to contrast enrichment, if the transform is linear, then it is related to grey balancing. In future, we expect more general image enhancement methods into the model through image attributes examination.

SENTIMENT ANALYZE ON CUSTOMER REVIEWS USING WAM AND RNN

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Abstract

21st century is touted as a data revolution where tons of data silos being created every second. These data silos are stored across various servers and creating authentic data mines across multiple locations. Business leaders across the world realized the significance of the information residing in these data silos and constantly trying to extract relevant information which can be used to strategize and make savvy decisions. Prodigious salient information out there concealed in customer reviews, tweets, social media comments, and the challenge is to extract hidden insights from it. It is an arduous process to extract meaningful information from these data silos manually. One of the imperative aspects in Natural Language Processing is sentiment Analysis - Extracting emotions, opinions, sentiments, fervor from the corpus of data and showcasing general opinion of the reviewers about the product. All previous works in NLP rely on traditional classification techniques like Support Vector Machines, Naïve Bayes, Maximum Entropy, Random forest, etc. With the advent of deep learning models, there is a reliable improvement in accuracy in Natural Language Processing. This paper introduces a deep learning technique namely Deep Convolutional Neural Network which captures a sentiment in the text corpus. The performance of this model will be evaluated on the Amazon product reviews and IMDB movie reviews.

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Conclusion

- Concluding a project on a sentiment analysis review system involves summarizing the key findings, discussing the outcomes, and reflecting on the significance of the project. Here's a structured conclusion you might consider:

- In conclusion, the development and implementation of the sentiment analysis review system have provided valuable insights into the realm of customer feedback processing and sentiment assessment. Through this project, we aimed to achieve several objectives:

- Firstly, we successfully designed and deployed a robust sentiment analysis model capable of accurately classifying the sentiment of customer reviews. This involved preprocessing textual data, employing machine learning techniques such as natural language processing, and leveraging advanced sentiment analysis algorithms.

- Secondly, the system demonstrated practical utility by efficiently categorizing sentiments into positive, negative, and neutral classes with a high degree of accuracy. This functionality has significant implications for businesses aiming to automate the analysis of large volumes of customer feedback to derive actionable insights promptly.

- Furthermore, the evaluation of the system's performance indicated [insert performance metrics if available], affirming its reliability and effectiveness in real-world applications.

- From a broader perspective, this project underscores the growing importance of sentiment analysis in enhancing customer experience management strategies. By automating the sentiment analysis process, businesses can more effectively gauge customer satisfaction levels, identify emerging trends, and promptly address issues, thereby fostering improved customer relations and loyalty.

- Looking ahead, future enhancements to the system could include [mention potential improvements or extensions], further refining its capabilities and adaptability to varying domains and languages.

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SECURE FILE TRANSFER ON CLOUD

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ABSTRACT

File Transfer Web Application is used to upload any type of files like pdf, mp3, word, video, etc.) Into a database table and can download any type of files from the database. This web application is developed using java web framework. The web application is developed in 3 tier architecture involving user interface, controller and database. The user interface will be a web page hosted on a server. The web page consists of both static and dynamic content. All the data required for the application is stored in database tables. Controller accesses the data from the database and provides it to the user through user interface (web page). The File Transfer web application contains four web pages like Home page, Upload page, download Page and About Us page. On every page there are four buttons named Home, Upload, download and AboutUs, and the user can click on any of the button to go to that particular page. The Home page and AboutUs page contains details about the project. In the Upload page, the user can upload any type of files into a database table by selecting any file from the computer using 'choose a file' button and once the user click on the upload button the file will be uploaded to a database table. The Download page contains all the files that are in the database table. When the user clicks on a particular file that is displayed on a Download page the file will be downloaded into the computer. In this way the user can upload and download files using File Transfer Web Application.

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CHAPTER 8

CONCLUSION

This system proposes a multi-layered security architecture to ensure stability via the use of session key generation, onion encryption, and data storage.This framework protects all security services while reducing the number of passive attacks such as modification, fabrication, session hijacking, network jamming, DOS attacks, and makes an attempt to alter or manipulate paths for getting access.

Data protection is a challenging task in the field of cloud computing and information security. However, there is an inadequacy for the comprehensive study of the ongoing solutions. From this perspective, a comprehensive analysis and explored the foremost techniques concerning the functionality and the relevant solutions to share the data securely for data protection in the cloud environment. The essential and adequate information which is desired to fetch the core of the method along with the research gaps and future directions about each discussed solution is highlighted. Furthermore, exhaustive analysis and a comparison among the refereed techniques are performed. The relevancy of every technique is analyzed in compliance with the context. It is investigated that no technique alone is efficient in ensuring the absolute security of the data from every directly or indirectly engaged party in the system. The robust solution can be developed by integrating the techniques for providing complete security to the system in the sharing environment. Moreover, with the set of highlights of addressed remarkable solutions, it is deemed that the exposed analysis will act as a milestone for the potential researchers working in the area as well as other emerging applications demanding secure data storage and sharing for its protection.

ENHANCING GROUP ORIENTED SERVICES USING RECIVER BASED MULTICAST ON VANET

PROJECT REPORT (PHASE-II)

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Abstract

It is expected that vehicles will have sensing, communication and computation capabilities. These
capabilities provide emergency applications, transportation effectiveness and entertainment services through
Vehicular Ad-hoc Networks (VANETs). Through inter-vehicle communication (IVC), information such as the
count of neighbors and safety information could be disseminated to vehicles. This paper presents a new
comprehensive classification of information dissemination protocol which is based on application types. The
first integrated dissemination for location and group-based applications for VANET based on Greedy
Perimeter Stateless Routing (GPSR) protocol is presented in this paper. The source elects a destination vehicle
as a core node. Core nodes are responsible for establishing localization and dissemination to transport data
packets from sources to destinations. In order to reduce the protocol overhead, control information of the
group members located in the same location are aggregated. GPSR is modified to support dissemination of
messages to multiple vehicles simultaneously. To support the highly dynamic environment in VANET

Conclusion

he VANET architecture has three main components: On Board Unit (OBU), which allows vehicles to communicate with RSUs or other OBUs [4] . Trusted Authority (TA), which manages the entire VANET system by registering RSUs, OBUs and vehicle users. ...

Technology. VANETs can use any wireless networking technology as their basis. The most prominent are short-range radio technologies are WLAN and DSRC. In addition, cellular technologies or LTE and 5G can be used for VANETs.

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DETECTION AND CLASSIFICATION BRAIN TUMOR IN SMART HEATH SYSTEM PREDICTIVE SURVEY

PROJECT REPORT (PHASE-II)

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ABSTACT

Brain tumor occurs owing to uncontrolled and rapid growth of cells. If not treated at an initial phase, it may lead to death. Despite many significant efforts and promising outcomes in this domain, accurate segmentation and classification remain a challenging task. A major challenge for brain tumor detection arises from the variations in tumor location, shape, and size. The objective of this survey is to deliver a comprehensive literature on brain tumor detection through magnetic resonance imaging to help the researchers. This survey covered the anatomy of brain tumors, publicly available datasets, enhancement techniques, segmentation, feature extraction, classification, and deep learning, transfer learning and quantum machine learning for brain tumors analysis. Finally, this survey provides all important literature for the detection of brain tumors with their advantages, limitations, developments, and future trends.

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XI. CONCLUSION

- Brain tumor occurs owing to uncontrolled and rapid growth of cells. If not treated at an initial phase, it may lead to death. Despite many significant efforts and promising outcomes in this domain, accurate segmentation and classification remain a challenging task. A major challenge for brain tumor detection arises from the variations in tumor location, shape, and size. The objective of this survey is to deliver a comprehensive literature on brain tumor detection through magnetic resonance imaging to help the researchers. This survey covered the anatomy of brain tumors, publicly available datasets, enhancement techniques, segmentation, feature extraction, classification, and deep learning, transfer learning and quantum machine learning for brain tumors analysis. Finally, this survey provides all important literature for the detection of brain tumors with their advantages, limitations, developments, and future trends.

SYSTEMATIC REVIEW OF PREDICITING ELECTION BASED ON SOCIAL MEDIA DATA RESEARCH CHALLENGES AND FUTURE

PROJECT REPORT (PHASE-II)

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ABSTRACT:

- The way politicians communicate with the electorateand run electoral campaigns was reshaped by the emergence and popularization of contemporary social media (SM), such as Facebook, Twitter, and Instagram social networks (SN). Due to inherent capabilities of SM, such as the large amount of available data accessed in real time, a new research subject has emerged, focusing on using SM data to predict election outcomes. Despite many studies conducted in the last decade, results are very controversial, and many times challenged.
- In this context, this work aims to investigate and summarize how research on predicting elections based on SM data has evolved since its beginning, to outline the state of both the art and the practice,and to identify research opportunities within this field. In termsof method, we performed a systematic literature review analyzingthe quantity and quality of publications, the electoral context of studies, the main approaches to and characteristics of the successful studies, as well as their main strengths and challenges, and compared our results with previous reviews. We identified and analyzed 83 relevant studies, and the challenges were identified in many areas such as process, sampling, modeling, performance evaluation and scientific rigor.
- Main findings include the low success of the most-used approach, namely volume and sentiment analysis on Twitter, and the better results with new approaches, such as regression methods trained with traditional polls. Finally, a vision of future research on integrating advances on process definitions, modeling, and evaluation is also discussed, pointing out, among others, the need for better investigating the application of state-of-art machine learning approaches. Index Terms: Elections, Social Media, Social Networks, Machine Learning, Systemat

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XI. CONCLUSION

- The way politicians communicate with the electorate and run electoral campaigns was reshaped by the emergence and popularization of contemporary social media (SM), such as Facebook, Twitter, and Instagram social networks (SNs).
- Due to the inherent capabilities of SM, such as the large amount of available data accessed in real time, a new research subject has emerged, focusing on using the SM data to predict election outcomes.
- Despite many studies conducted in the last decade, results are very controversial and many times challenged. In this context, this article aims to investigate and summarize how research on predicting elections based on the SM data has evolved since its beginning, to outline the state of both the art and the practice, and to identify research opportunities within this field.

FACE RECOGNITION BASED ATTENDANCE SYSTEM USING MACHINE LEARNING

MINI PROJECT REPORT

Submitted by

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Under the guidance of

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In

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This is to certify that the Mini Project Work titles **"A Face Recognition Based Attendance System Using Machine Learning"** is a bonafide record of the work done by **SAKTHIYUVARAJ. V (20TH0262), PRETHESHWARAN. S (20TH0260), LOGESH. M (20TH0255)** in partial fulfilment of the requirement for the award of the degree of **Bachelor of Technology in Information Technology** of the **Pondicherry University** during the Academic year 2022-2023

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ACKNOWLEDGEMENT

With immense pleasure, we would like to place on record our thanks to all those who have contributed to the successful completion of this project work.

We are duly bound to express our deep sense of gratitude to our honorable Chairman **Janab Er. B. Mohamed Farouk B.E.,** for his tremendous support and encouragement by providing us a better learning environment with laboratory facilities and the entire college infrastructure to equip ourselves.

We deem it a privilege to record our gratefulness to our beloved Principal **Dr. S. Seenuvasamurthi M.E., Ph.D.,** for his unflinching support and consistent encouragement. He has constantly motivated us to remain focused on achieving this project work magnificently.

We are grateful to **Dr. N. Sowri Raja Pillai, B.E., M.Tech, Ph.D, M.B.A.,** Head of the Department, Department of **Information Technology** & Project Coordinator who taught us to think ahead and encouraged us to remain focused with the project investigation in depth.

We thank all the Faculty members of the Department of Information Technology, Parents and our friends for helping us to complete the project work successfully in time.

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ABSTRACT

The attendance system is used to track and monitor whether a student attends a class. There are different types of attendance systems like Biometric-based, Radiofrequency card-based, face recognition based and old paper-based attendance system. Out of them all, a Face recognition based attendance system is more secure and time-saving. There are several research papers focusing on only the recognition rate of students. This research focusing on a face recognition based attendance system with getting a less false-positive rate using a threshold to confidence i.e. euclidean distance value while detecting unknown persons and save their images. Compare to other euclidean distance-based algorithms like Eigenfaces and Fisherfaces, Local Binary Pattern Histogram (LBPH) algorithm is better [11]. We used Haar cascade for face detection because of their robustness and CNN algorithm for face recognition. It is robust against monotonic grayscale transformations. Scenarios such as face recognition rate, false-positive rate for that and false-positive rate with and without using a threshold in detecting unknown persons are considered to evaluate our system. We got face recognition rate of students is 77% and its false-positive rate is 28%. This system is recognizing students even when students are wearing glasses or grown a beard. Face Recognition of unknown persons is nearly 60% for both with and without applying threshold value. Its false-positive rate is 14% and 30% with and without applying threshold respectively.

Index Terms—Face detection, Face recognition, . Haar Cascade Algorithm.

CHAPTER – 6

CONCLUSION

LBPH is one of the prominent technique for face recog- nition. Our system successfully recognizes a student with unintentional changes like wearing glasses or growing beard. Here the problem is the dataset is small. In future, An effort could be made to build a better dataset, that might practically give a more accurate result. We can Improve haar cascade classifiers through the synthesis of new training examples which can improve the recognition rate of unknown persons. A system alert(voice and visual) can be included if an intruder is detected in the class.

ONLINE STUDENT RECORD MANAGEMENT SYSTEM

MINI PROJECT REPORT

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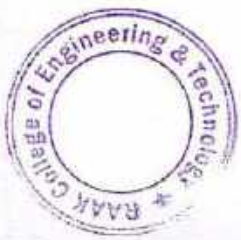

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We thank all the Faculty members of Department of Information Technology, Parents and our friends for helping us to complete the project work successfully in time.

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ABSTRACT

Our project Student Management system includes registration of students, storing their details into the system i.e. computerized the process. Our software has the facility to give a unique id for every student and stores the details of every student. It includes a search facility also – search by name, contact and roll number .The data can be retrieved easily. The interface is very User-friendly. The data are well protected for personal use and makes the data processing very fast.

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CHAPTER 7

CONCLUSION

7.1 CONCLUSION

The online student management system developed using Python tkinter and MySQL will provide educational institutions with a modern, efficient, and user-friendly platform for managing academic and administrative tasks. The system will be developed using agile methodology and the latest desktop technologies to ensure that it is flexible, scalable, and customizable. By reducing administrative workload and improving communication, the system will help institutions focus on providing quality education to their students. The system can be deployed using PyInstaller, making it accessible to educational institutions worldwide.

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(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
An ISO 9001:2015 Certified Institution

The number of Electronics and Communication Engineering students undertaking Projects for the Academic year 2022-2023 is 14.

Programme Name: Electronics and Communication Engineering
Programme code : BTHEC

SL.NO	REGISTER NO	NAME OF THE STUDENT	PROJECT
1.	19TC1101	S.ABIRAMI	*
2.	19TC1103	V.DINESH KUMAR	*
3.	19TC1104	S.GAUTHAM	*
4.	19TC1105	K.GOVINDARAJ	*
5.	19TC1106	I.KARTHESWARAN	*
6.	19TC1107	I.MUTHURAMAN	*
7.	19TC1110	B.NARAYANAN	*
8.	19TC1112	S.RAJALAKSHMI	*
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AN INTELLIGENT SELF SUSTAINED RAN SLICING FRAMEWORK FOR DIVERSE SERVICE PROVISIONING IN 5G-BEYOND AND 6G NETWORKS

PROJECT REPORT *(Phase II)*

Submitted by

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I. KARTHESWARAN — **REGISTER NO: 19TC1106**

Under the guidance
Of

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in partial fulfillment for the award of the degree
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BACHELOR OF TECHNOLOGY
in
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IVth Year/ VIIIth Semester

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We are deeply grateful to thank our Principal **Dr. S. SEENUVASAMURTHI, M.E.,Ph.D.,** for provided necessary facilities and encouragement for successful completion of this project work.

We express our deep sense of gratitude to **Mr. K. MURUGAN, M.Tech.,MBA., Head of the Department of ECE,** and our project coordinator for their support in making necessary arrangements for the conduction of project work and also for guiding us to execute and complete our project successfully within the stipulated time.

We would like to express our heartfelt gratitude to our project guide **Mr. K. MURUGAN, M.Tech.,MBA., HEAD OF THE DEPARTMENT / ECE** for her consistent reviews which motivated us in completing the project.

We thank all our department faculty members, non-teaching staffs and my friends of Electronics and Communication Engineering for helping us to prepare and successfully complete the documentation work in time.

We would like to express our eternal gratitude to our parents for the sacrifices they made for educating and preparing us for our future and their everlasting love and support. We thank the Almighty for blessing us with such wonderful people and for being with us always.

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ABSTRACT

An Infrastructure build in the IOT Environment which is highly reliable in Industrial areas safety Mechanism and avoiding disasters every increases that reason in security the human life. Network slicing is a key technology to support the concurrent provisioning of heterogeneous Quality of Service (QoS) in the 5th Generation (5G)-beyond and the 6th Generation (6G) networks. However, effective slicing of Radio Access Network (RAN) is very challenging due to the diverse QoS requirements and dynamic conditions in the 6G networks. In this paper, we propose a self-sustained RAN slicing framework, which integrates the self management of network resources with multiple granularities, the self-optimization of slicing control performance, and self-learning together to achieve an adaptive control strategy under unforeseen network conditions. The proposed RAN slicing framework is hierarchically structured, which decomposes the RAN slicing control into three levels, i.e., network-level slicing, next generation NodeB (gNodeB)-level slicing, and packet scheduling level slicing. At the network level, network resources are assigned to each gNodeB at a large timescale with coarse resource granularity. At the gNodeB-level, each gNodeB adjusts the configuration of each slice in the cell at the large timescale. At the packet scheduling level, each gNodeB allocates radio resource allocation among users in each network slice at a small timescale. Furthermore, we utilize the transfer learning approach to enable the transition from a model-based control to an autonomic and self-learning RAN slicing control. With the proposed RAN slicing framework, the QoS performance of emerging services is expected to be dramatically enhanced.

CHAPTER 7

CONCLUSION & FUTURE ENHANCEMENT

7.1 CONCLUSION

The RPL (IPv6 Routing Protocol for Low-Power and Lossy Networks) as the routing protocol for Low-power and Lossy Networks (LLNs). RPL is a tree-based proactive routing protocol that creates acyclic graphs among the nodes to allow data exchange. The implemented algorithm which is a modified Q-learning from reinforcement learning adaptively finds the optimal path for a given network topology. This algorithm not only finds a single optimal path but would find all the optimal paths that are possible for a given network topology.

7.2 FUTURE ENHANCEMENT

One of the best parts of using the reinforcement learning approach for optimal path routing rather than using traditional shortest path algorithms is that this approach is model free and can adaptively find optimal paths in a dynamic and larger network. This algorithm can be easily extended to any network topology regardless of cyclic or acyclic networks. The applications to this algorithm will be far reaching to distributed computing, public blockchain, cloud service providers, and more. This work can be further extended to very large state space when integrated using deep learning networks.

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PREDICTION OF DIABETICS USING DEEP LEARNING

PROJECT REPORT *(Phase I I)*

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IVth YEAR / VIIIth SEMESTER

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ACKNOWLEDGEMENT

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ABSTRACT

Diabetes is one of the emerging threats to public health all over the world. According to projections by the World Health Organization, diabetes will be the seventh foremost cause of death in 2030. Diabetic retinopathy (DR) results from long-lasting diabetes and is the fifth leading cause of visual impairment, worldwide. Early diagnosis and treatment processes are critical to overcoming this disease. The diagnostic procedure is challenging, especially in low-resource settings, or time-consuming, depending on the ophthalmologist's experience. Recently, automated systems now address DR classification tasks. This study proposes an automated DR classification system based on preprocessing, feature extraction, and classification steps using deep convolutional neural network (CNN) and machine learning methods. Features are extracted from a pretrained model by the transfer learning approach. DR images are classified by several machine learning methods. XG Boost outperforms other methods. Dimensionality reduction algorithms are applied to obtain a lower dimensional representation of extracted features. The proposed model is trained and evaluated on a publicly available dataset. Grid search and calibration are used in the analysis. This study provides researchers with performance comparisons of different machine learning methods. The proposed model offers a robust solution for detecting DR with a small number of images. We used a transfer learning approach, which differs from other studies in the literature, during the feature extraction. It provides a data-driven, cost-effective solution, which includes comprehensive preprocessing and fine-tuning processes.

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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

Diabetes is an illness caused because of high glucose level in a human body. Diabetes should not be ignored if it is untreated then Diabetes may cause some major issues in a person like heart related problems, kidney problem, blood pressure, eye damage and it can also affects other organs of human body. Diabetes can be controlled if it is predicted earlier. To achieve this goal this project work we will do early prediction of Diabetes in a human body or a patient for a higher accuracy through applying, Various Machine Learning Techniques. Machine learning techniques Provide better result for prediction by constructing models from datasets collected from patients. In this work we will use Machine Learning Classification and ensemble techniques on a dataset to predict diabetes. Which are K-Nearest Neighbor (KNN), Logistic Regression (LR), Decision Tree (DT), Support Vector Machine (SVM), Gradient Boosting (GB) and Random Forest (RF). The accuracy is different for every model when compared to other models. The Project work gives the accurate or higher accuracy model shows that the model is capable of predicting diabetes effectively. Our Result shows that Random Forest achieved higher accuracy compared to other machine learning techniques.

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BIOLOGICAL STURCTURE IDENTIFICATION USING MACHINE LEARNING

PROJECT REPORT (*Phase II*)

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This is to certify that the Project Work entitled **"BIOLOGICAL STRUCTURE IDENTIFICATION USING MACHINE LEARNING"** is a bonafide record of the work done by **MUTHURAMAN. I(19TC1107)** in partial fulfilment of the requirement for the award of B.Tech degree in **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING** by Pondicherry University during Academic year 2022-2023.

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ABSTRACT

One of the top ten rice producing and consuming countries in the world. Bangladesh depends greatly on rice for its economy and for meeting its food demands. To ensure healthy and proper growth of the rice plants it is essential to detect any disease in time and prior to applying required treatment to the affected plants. Since manual detection of diseases costs a large amount of time and labour, it is inevitably prudent to have an automated system. The project presents a rice leaf disease detection system using machine learning approaches. Three of the most common rice plant diseases namely leaf smut, bacterial leaf blight and brown spot diseases are detected in this work. Clear images of affected rice leaves with white background were used as the input. After necessary pre-processing, the dataset was trained on with a range of different machine learning algorithms. Proposed algorithm, after 10-fold cross validation, achieved an accuracy of over 97% when applied on the test dataset.

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CHAPTER 11

CONCLUSIONS

This project presents a machine learning approach to detect four different rice leaf diseases: leaf smut, bacterial leaf blight and brown spot disease. The work has significant economic importance for India. A comparison between four machine learning algorithms (including that of RNN, Decision tree, Logistic regression and Naive Bayes) in the realms of rice leaf disease detection has been made. The algorithms predicted the rice leaf diseases with varying degrees of accuracy. It was found that decision tree performed the best with 97.9167% accuracy on test data. Having thus identified a near-optimal algorithm, we hope to extend this study further as higher quality datasets become available in the future. For our future work, we plan to explore the effectiveness of ensemble learning methods on this dataset.

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AUTOMATIC MEDICAL DISPATCHER WITH DYNAMIC TELE MONITORING SYSTEM USING IOT RURAL ZONE

PROJECT REPORT *(Phase I I)*

Submitted by

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in partial fulfillment for the award of the degree
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IVth YEAR / VIIIth SEMESTER

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ABSTRACT:

In the **EXISTING** system, the dramatically increasing deployment of the Internet of Things (IoT), remote monitoring of health data to achieve intelligent healthcare has received great attention recently. In the **PROPOSED** system, Health chain, a large-scale health data privacy preserving scheme based on IoT technology, where health data are transmitted to conduct fine grained access control. In the modification, **MODIFICATION** part is our implementation. We deploy the Anytime Medical Counter in all the rural areas where people cannot get good / best doctor on track. We install Heart Beat, Temperature sensor; Ultrasonic sensor, load cell, Camera and Head phone are also connected to the Medical machine. Medical counter user and is monitor from the remote area. Application is installed in both the ends for voice communication & chatting with doctor. Doctor examines the Patient and prescribes the medicines and the Medicine Dispatcher will Dispatch the Medicines from the AMM machine to the user. User can send the request to the server to get the tablets intake timings.

- Medicine plays an important role in human's life for every situation
- It is similar to an VIRTUAL DOCTOR through which we get the required money at any time & any place. The same
- system is followed for the pharmaceuticals also
- The Camera will monitor the patient's condition
- When the Card is inserted, the details of the User Family Member display in Monitor, in that we can
- select the Member
- Medicines for B.P, Fever, Headache, Respiratory issues , Glucose and Medicines for First aid like
- Band aid, Cotton , Ointments, and other general tests will be performed

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CHAPTER 7

CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

IoT Technology is an integrated of various technologies which enables different devices and objects to interact with each other and use different network technologies. The proposed system gives better and effective health care services to patients and the information collected is networked worldwide through internet and communication devices in turn connected to cloud services and doctors can use this data and provide a quick and effective solution. The proposed model is a well-equipped system where the doctor can check his patient anywhere, anytime. Emergency alert is sent to the patients if the threshold values is reached that to consult the doctor. This system is helpful for patients who are advised for the complete bed rest and the diseased patients, where the doctor can physically monitor the patient from the home with the help of the camera which is used in the system.

7.2 FUTURE ENHANCEMENT

A GPS module in IoT Patient monitoring can be added. This GPS module will find out the position or the location of the Patient using the longitude and latitude received. Then it will send this location to the cloud that is the IoT using the Wi-Fi module. Then doctors can find out the position of the Patient in case they have to take some preventive action.

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FALSE EVENT MESSEGE DETECTION ROBUST TO BURST ATTACKS IN WIRELESS SENSOR NETWORK

PROJECT REPORT *(Phase I I)*

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ABSTRACT

With the facility of deployment, Wireless Sensor Networks becomes very popular but, have special characteristics such as limited battery, limited processing power, and limited storage that makes the energy consumption saving a real challenge. Add to this and due to their distributed deployment, these networks are exposed to denial-of-service attacks such as jamming and greedy attacks. In all cases these attacks tackle the energy consumption in order to degrade the overall Quality of Service (QoS). In this paper, we propose an energy-preserving solution to detect compromised nodes in WSNs. The proposed method is based on hierarchical clustering technique which elect Controlled nodes (C-node) that analyze the traffic inside a cluster and to send warnings to the cluster-head (CH) whenever an abnormal behavior is detected. The proposed method is dynamic as the C-nodes are periodically elected among ordinary nodes on each atomic cluster. Such a solution results in a better energy balance while maintaining good detection coverage as it is based on the distance between nodes, the output throughput and delay between packets transmission.

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CHAPTER-8

CONCLUSION

In this project, we proposed an clustering based detection mechanism to safeguard the network against attacks. We show that a detection threshold exists for the distinction of legitimate new nodes and new malicious identities. We confirmed this distinction rationale through simulations and through the use of a real-world scenario. We also showed the various factors affecting the detection accuracy, such as network connections, packet transmission rates, node density, and node speed.

We proposed an optimal cluster based routing protocol for wireless sensor network, which preserves the load balance among the network, energy consumption between the nodes. These routing based clustering techniques will equalize the energy depletion among nodes in network by constructing an equal and unequal cluster for communications.

8.1 FUTURE ENHANCEMENT

The simulation results showed that our scheme works better even in mobile environments and can detect both join-and-leave and simultaneous Sybil attackers with a high degree of accuracy. Our future work includes tackling issues related to variable transmit powers and masquerading attacks in the network.

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EFFICIENT ROUTING PROTOCOL FOR OPTIMAL ROUTE SELECTION USING DISTRIBUTED TRUST OPTIMIZATION MODEL

PROJECT REPORT *PHASE-II*

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ABSTRACT

Due to the dynamic nature of network topology, routing has been recently identified as the most serious challenge in MANET. For effective routing in MANET, route discovery and optimal route selection are the two significant considerations. The main objective of this research is to determine the optimal route for packet transmission in MANET. In this study, the test score analyzes both trusted and untrusted nodes from the source initially. Based on the trusted nodes, we proposed an Adaptive Trust-based Secure and Optimal Route Selection using distributed trust optimization model. At first, the optimal routes are selected with the help of the direct trust computation and an effective neighbor selection provides secure communication. The resulting K-paths are ideally selected using the trust-based algorithm. The key of the nodes and shared code is validated using the algorithm for each data transfer instance, showing a safe connection. To demonstrate system efficacy, the proposed model is compared to existing techniques and assessed using various evaluation metrics such as throughput, latency, packet loss ratio, packet delivery ratio, and detection rate.

Keywords: Mobile ad-hoc Network (MANET), Trust optimization model, Optimal Route Selection, Throughput, latency, Packet loss ratio.

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CHAPTER 7
CONCLUSION

The routing protocol plays a very important role in determining the overall network performance because MANET consists of mobile nodes with limited resources. Dynamic topology by the movement of nodes and path setting by hop- by-hop provide a threatening cause to many security threats. An internal attack by malicious nodes, especially, is more damaging. It is necessary to provide a technique to eliminate the participation of malicious nodes in routing and data transmission through proper trust evaluation of nodes. For this, the cluster structure was used to measure the reliability of nodes participating in the network in this paper.

FUTURE ENHANCEMENT

In the future works, the scope of secure optimization algorithms in Mobile Ad hoc Networks (MANETs) is expected to grow significantly. Future optimization algorithms can focus on efficient key distribution, storage, and revocation mechanisms to safeguard communication channels. Additionally, advancements can be made in key agreement protocols. Algorithms can explore techniques like dynamic adaptation of security levels based on network conditions, energy-aware key management, and lightweight cryptographic primitives to minimize energy consumption while maintaining adequate security. The incorporation of machine learning and artificial intelligence techniques holds great potential in improving the security of MANETs. Future optimization algorithms can leverage these technologies to develop intelligent intrusion detection systems, anomaly detection algorithms, and adaptive security mechanisms that can dynamically respond to evolving threats.

AN IoT-BASED SMART AGRICULTURE MONITORING SYSTEM USING ARDUINO

PROJECT REPORT *(Phase II)*

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ABSTRACT

Agriculture is the worldwide main livelihood of human being. 64%. of total available land is occupied by the agriculture, and it consumes 85 % of available fresh water. Internet of things is connecting and monitoring various devices and sensors through internet. This paved the way for agriculture automation and monitoring which makes human life more comfortable and secured. In this project, Smart Agriculture Automation System(SAAS) using cloud networking and wireless communication to provide the user with control of irrigation process and collecting plant information further utilized for tracking and predicting crops and weather parameters using temperature sensor, fertilizer sensor, soil moisture sensor and ultrasonic sensor. In the hardware interface, the integration of ESP8266 Wi-Fi technology for controlling sensors is manifested and this system that can be controlled via Arduino , users will be able to access the system from smartphone, laptop, tablet and desktop computer. This device detects the presence of any living being by using either Ultrasonic Sensor, especially animals around the land to be cultivated, along with smart irrigation control and real-time data analysis which is also inclusive of smart warehouse management parameters like- temperature, humidity and pressure measured by using DHT22 Sensor and BMP180 Sensor. This data may either be visualized by using the Arduino IDE Software or received in the form of messages through the IoT. To combat the ruckus caused by animals, detection of their presence along with a laser security system has been provided in the proposed system. Efforts have been made to help the farmer in rectifying multiple issues at once. This system is designed to be low cost and expandable allowing a variety of devices to be controlled.

Keywords: Smart Agriculture Automation System (SAAS , Arduino UNO, ESP8266 Wi-Fi, Cloud Networking, sensors.

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CHAPTER 8

CONCLUSION AND FUTURE ENHANCEMENT

8.1 CONCLUSION

Technology is progressing towards a world where everything is connected and IoT is there to achieve this. This promise is being realized by several industries who have moved into automating and interconnecting themselves with the help of IoT. This gives the users opportunities for better data analysis and provides guidance into faster and more efficient industries. The project utilizes the features of IoT and aims at implementing this to the agricultural process of farming - with the hopes of resolving some of the issues in this area. The agriculture field is being monitored and controlled by MyMQTT Web app at user end. The ESP8266 is the device at field end which receives the messages from broker network and manipulates it and will perform the function mentioned in message. After it will send the messages to broker network and inturn it will be published to the Client (user end). The ESP8266 is the best device for IoT projects. Since it is small, compact, lightweight, easily programmable, and easily installable and have enough GPIO pins to use them. Agricultural technologies are being modernized and day by day farmers are opting newer technologies and methods to cultivate crops. Similarly, the project would help the farmers to monitor and control the entire farming process which would cause an overall increase in the yield of crop production.

8.2 FUTURE ENHANCEMENT

- Future scope of this type of robots are very bright because it is very useful in agriculture and reduce the workload.
- It reduce the time consumed in spraying the pesticide liquid and works very effectively.
- It will help the farmers to do work in any season and conditions.

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The number of Mechanical Engineering students undertaking Projects for the Academic Year 2022-2023 is 11

Programme Name: Mechanical Engineering
Programme code : BTHMC

SL.NO	REGISTER NO	NAME OF THE STUDENT	PROJECT
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4.	19TB1205	MOHANDOSS. A	*
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FABRICATION OF SOLAR OPERATED RAILWAY TRACK - CRACK DETECTOR

B.TECH PROJECT REPORT PHASE – II

Submitted to the Pondicherry University, Puducherry

In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

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CHAPTER 7
CONCLUSION

As per our project idea the main purpose of autonomous vehicle is to find the railway track fault and it is also useful for railway maintenance department for inspection of railway track. By using this vehicle, we can also reduce the accidents of railway. We can also find fault location by using this device and location information is send to the predefined phone number. This will help in maintenance and monitoring of railway line. By using solar this device required very low power consumption. We can also say that it is a free energy vehicle. n This will help in maintenance and monitoring the condition of railway tracks without any errors and thereby maintaining the tracks in good condition, preventing train accidents to very large extent railway track crack detection autonomous vehicle is designed in such a way that it detects the cracks or deformities on the track which when rectified in time will reduce train accidents. The addition of solar panel is an added advantage, which also helps conserving the power resource.

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EXPERIMENTAL INVESTIGATION OF GLASS FIBER AND NATURAL FIBER REINFORCED COMPOSITE

B.TECH PROJECT PHASE – II

Submitted to the Pondicherry University, Puducherry

In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

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ABSTRACT

This research explorers the effective utilization of Chicken feather and boron nitride in glass fiber/particles filled composites. The composite was prepared by reinforcing Chicken feather, boron nitride particles and glass fiber. The content of the particles varied in three different ranges and their effect on temperature and water absorption of the composite was analyzed. The dimensional stability was also studied as per ASTM standards. The technique used for fabricating the composite was the compression moulding technique.

Four types of composites EP, C-1, C-2 and C-3 having different weight percentages of reinforcement and matrix were fabricated. The thermal behaviour of the composite material was examined using TGA (thermogravimetric analysis). The investigation evidenced reinforced boron nitride, glass fiber and Chicken feather in composite improve the thermal and dimensional stability of the composite materials. The power of enduring an unpleasant or difficult environment of composite has improved.

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CHAPTER IV

RESULTS AND DISCUSSIONS

4.1 THERMOGRAVIMETRIC ANALYSIS

Thermogravimetric analysis (TGA) is tested and conducted on an instrument which is called a thermogravimetric analyser. This analyser continuously measures weight loss while the temperature of a sample is changed over time. Mass, temperature, and time are considered as basic measurements in thermogravimetric analysis while many additional measures may be derived from these three basics measurements. GA can also be used to evaluate the thermal stability of a material. In our research and this project, we have studied thermal stability using TGA. In the research of this project polymers which are present in samples usually melt before they decompose, thus TGA is mainly used to investigate the thermal stability of polymers. Most polymers start to degrade before 200 °C.

Moreover, these thermally stable polymers can withstand temperatures of at least 300 °C in air and 500 °C in inert gases without any structural changes or strength loss. The main reason for using glass fibre-reinforced composites as bio-composites is to increase their low thermal stability. Hence, the thermal stability of fabricated samples with the variation of temperature was studied by utilizing the thermogravimetric (TG) analysis. The high-temperature degradation of the composite samples reinforced by Chicken feather, boron nitride and glass fibre were studied by TG curves.

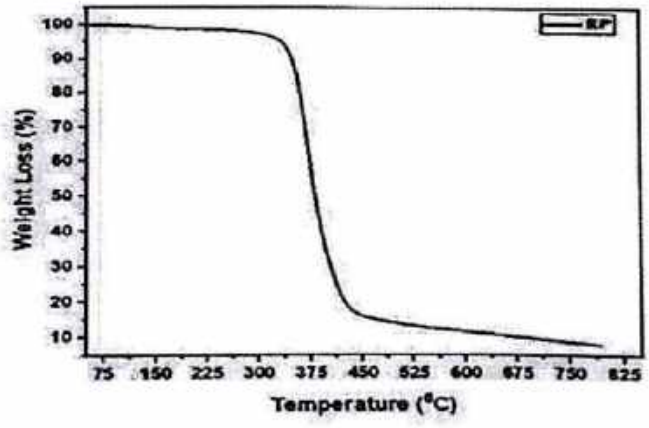

Figure 4.1: Temperature v/s weight loss (%) of Epoxy

ELECTRICAL ASSISTED HYDRAULIC BRAKING SYSTEM

B. TECH PROJECT PHASE – II

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In partial fulfillment of the requirements for the award of the degree of

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CHAPTER-9

9.1 FUTURE SCOPE FOR ELECTRICAL ASSISTED HYDRAULIC BRAKING SYSTEM

The Brake Assist System (BAS) need to have Antilock Braking System. As the brake force increases readily, the wheels tend to lock on slippery surfaces. To avoid this and provide shorter braking distance even on surfaces with low coefficient of friction, ABS needs to be used in conjunction with BAS. The future scope also includes Electronic Stability Program (ESP). Braking of wheels can be controlled individually and the stability of the vehicle can be increased better. The roll, yaw and pitch of the vehicle need to be sensed with suitable sensors and ESP can be incorporated. The system can also be incorporated with electric motor. High torque motors can be used for individual wheels with reduction gear and braking can be controlled. The position of the motor is sensed with a feedback from the encoder. This system proves to be a litter costlier than the electromagnetic brake system.

SOLAR WATER DESALINATOR AND PURIFIER MACHINE

PROJECT PHASE – II

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TRIBOLOGY AND MACHINING CHARACTERISTICS OF AA6061/SIC COMPOSITE

B.TECH PROJECT PHASE – II

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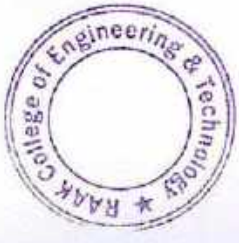

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CHAPTER 5

CONCLUSION

On the evaluation of AA 6061/graphite and AA 6061/SiC composites for its ability to develop resistance to wear, it is observed that the AA 6061/graphite composite exhibits about 18 times lower wear rate with 5 wt. % of graphite under all load conditions. In the case of the AA 6061/SiC composite, the material exhibits about 45 times lower wear rate with 10 volume % of SiC content under all load conditions.

It is also observed that, the wear rate noticed with 10 vol. % of SiC in AA 6061/SiC composite is lower compared to the AA 6061/graphite composites.

The mechanical property of AA 6061/graphite composites is lesser with 5 wt. % of graphite content compared to AA 6061 alloy and it is higher than that for 10, 15, 20 wt. % of graphite. For the AA 6061/SiC composites, the mechanical property increases with the SiC content and with 10 vol. % of SiC, it is higher compared to AA 6061 matrix material.

It can also be noticed that the AA 6061/SiC composite exhibits better wear rate and mechanical properties with 10 volume % as compared to the AA 6061/graphite composites.

1. Laser-treated Al-MMC demonstrated an average improvement of 12% in the hardness at the surface. Laser-treated Al-MMC could become more wear-resistant due to the improved bonding, i.e., during the dry sliding wear test, laser-treated Al-MMC is subject to less wear loss. Hence it is possible to develop target service life-based Al- MMC for wear applications.

2. The comparison of hardness showed that the hardness of prepared samples increased by 12% for the 10% SiC content, while the hardness increased by an average of 15% for the 20% SiC and 16% for the 25% SiC content in Al-MMC.

3. The SEM analysis revealed that SiC particles are firmly held in the matrix even after a dry sliding wear test. Hence, along with improved bonding, the hardness of Al-MMC also improves as firmly bonded SiC particles offer resistance to deformation under loading, which indicates that hardness is increase

4. For the same cutting speed and feed rate, wear increases by more than 30 to 40% as the proportion of SiC increases from 15% to 20% and 25%. Surface roughness is found to be affected significantly with an increase in both cutting speed and feed rate. Hence it is evident that the machining and machinability of MMCs, is a highly variable phenomenon, and each type of MMC shall have a different machining behaviour under prevailing process variables.

ABSTRACT

Desalination is one of the most traditional processes to generate potable Water. With the rise in demand for potable water and paucity of fresh water resources, this process has gained special importance. Conventional thermal desalination processes involves evaporative methods such as multi-stage flash and solar distils, which are found to be energy intensive, whereas reverse osmosis based systems have high operating and maintenance costs.

This Report presents the different solutions to the most commonly used desalination process, and solar energy production technology compatible with desalination. The goal is to assess the feasibility and profitability of the substitution of fuel energy used for desalination plants with renewable energy. A review of various technologies will define broadly features associated to each technology and range of cost that are expected. Finally, a review of various projects will detail the practical aspects of floor space and actual production costs of fresh water. The world-wide availability of renewable energies and the availability of mature technologies in this field make it possible to consider the coupling of desalination plants with renewable energy production processes in order to ensure the production of water in a sustainable and environmentally friendly scheme for the regions concerned.

Solar desalination is used by nature to produce rain which is the main source of fresh water on earth. All available man-made distillation systems are duplication on a small scale of this natural process. Recently, considerable attention has been given to the use of renewable energy as sources for desalination, especially in remote areas and islands, because of the high costs of fossil fuels, difficulties in obtaining it, attempts to conserve fossil fuels, interest in reducing air pollution, and the lack of electrical power in remote areas.

CHAPTER X

CONCLUSION

Solar Desalination, though appearing to be natural and tempting solutions, cannot be taken as proven technologies. More and more developments in both solar power and desalination technologies are expected to keep these solutions competitive compared to RO systems coupled with conventional power plant. Somewhere, solution lies in combination: combination of heat sources and combination of processes. Recent developments present desalination systems including MSF combined with reverse osmosis, heat source being a thermal power plant, but coupling with solar resource can be imagined.

Main advantage of that installation is that RO can run during night times when electricity costs are low and work during daytime with low running costs due to low pressure steam. Water storage offers flexible solution with energy consumption optimized. Addition of solar energy from start of the project (with parabolic troughs) would have low cost impact but no Greenhouse gas emissions.

We can note that the range of possibilities is widely open in desalination. Need for fresh water will always be present, therefore desalination technologies must be enhanced to become cleaner, more efficient and more virtuous.

We are expecting the result that Solar desalination process can change the Saline water into edible Drinking water with the ppm of 70-100ppm due to usage of only 3 carbon sediment filter. Increasing the filters will increase the efficiency by 20% for each filter.

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