Project ID: 24/CSE(DS)/1/5

LEGAL AI – AN AI BASED LEGAL WEBSITE

A PROJECT REPORT
Submitted By

Anshika Singhal (2000271540012)
Anubhav Garg (2000271540014)
Aviral Dixit (2000271540019)
Jayaditya Mishra (2000271540032)

Under the Guidance of
Ms. Ritika Dhyani

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Technology in Computer Science and Engineering (CSE-DS)

to

Department of Computer Science & Engineering
AJAY KUMAR GARG ENGINEERING COLLEGE, GHAZIABAD
DR. APJ ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

May 25, 2024

Director
Ajay Kumar Garg Engg. College
Ghaziabad

Declaration

We hereby declare that the work presented in this report entitled "LEGAL AI", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.I have given due credit word to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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Dr. Avdhesh Gupta
Professor In-charge,CSE(DS)
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Date: May 25, 2024

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Acknowledgement

We take this opportunity to express our deep sense of gratitude and regard to Ms. Ritika Dhyani, Asst. Prof. (CSE Dept.), Ajay Kumar Garg Engineering College, Ghaziabad for her continuous encouragement and able guidance, we needed to complete this project. We would pay our sincere gratitude to the Head of the Dept. (CSE), Dr. Anu Chaudhary for his precious and enlightening words of wisdom which motivated us throughout our project work.

Abstract

Artificial Intelligence (AI) technologies have transformed the legal sector by increasing effectiveness and efficiency in a range of legal procedures. The aimof this project is to develop an AI-based model specifically designed for the effective creation and evaluation of legal documents. The three main components are the document summary generator, contract generator, and legal term assistant.

The document summary generator condenses lengthy legal texts into concise summaries, facilitating quick extraction of essential information. The contract generator automates the drafting of loan agreements, business agreements, and rental agreements, saving time and reducing errors. The legal term assistant provides instant access to definitions and explanations of legal terms, enhancing communication and understanding.

Utilizing Natural Language Processing (NLP) algorithms, our model aims to tackle ethical and regulatory issues that arise when AI is used in the legal sector. We provide a thorough framework for the creation and application of an AI-driven legal advisor that provides in-depth understanding of every step of the process through meticulous analysis and execution.

Project ID: 23-24/CSE-DS/1/07

HEALTH REPORT MANAGER

A PROJECT REPORT
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Khushboo Yadav
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Submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in Computer Science and Engineering with Data Science (CSE-DS)

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Declaration

We hereby declare that the work presented in this report entitled "HEALTH REPORT MANAGER USING BLOCKCHAIN", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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Acknowledgements

We express our deep sense of gratitude to our respected and learned guide, **Ms Dhanshri Parihar**, for her valuable help and guidance. We are thankful to them for the encouragement they have given us in completing the project.

We are also grateful to respected **Prof.** and to our respected Director **Dr. R.K. Agarwal, AKGEC Ghaziabad** for permitting us to utilize all the necessary facilities of the institution.

We are also thankful to all other faculty and staff members of our department for their kind cooperation and help.

Lastly, we would like to express our deep apperception towards our classmates and our indebtness to our parents for providing us the moral support and encouragement.

Abstract

In today's digitized healthcare landscape, the secure and efficient management of health records remains a paramount concern. Traditional methods of storing and sharing sensitive health data are susceptible to breaches, leading to privacy violations and compromised patient care. This project introduces a novel solution: a Health Report Manager (HRM) built on blockchain technology.

Our HRM system employs blockchain's inherent features of immutability, decentralization, and cryptographic security to create a robust and transparent platform for managing health records. Through the utilization of smart contracts, patient data access control is automated, ensuring that only authorized individuals can view and update health information. This enhances data integrity and confidentiality while reducing the risk of unauthorized access.

In this report, we outline the architecture and implementation details of the HRM system, highlighting its key components and functionalities. We also discuss the potential benefits of adopting such a solution, including enhanced data security, interoperability, and patient empowerment. Finally, we present insights into the challenges and considerations associated with deploying blockchain-based solutions in the healthcare domain, along with future research directions.

Project ID: 24/ CSE(DS)/1/08

AUTOPRED VEHIKLE

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We hereby declare that the work presented in this report entitled "Autopred Vehikle", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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This is to certify that the report entitled **"AUTOPRED VEHIKLE"** submitted by **SHAGUN SIROHI (2000271540053), SIDDHANT (2000271540057), YASH SINGH (2000271540065)** and **AKASH VISHWAKARMA (2100271549001)** to the APJ Abdul Kalam Technical University, Lucknow in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science and Engineering (Data Science) is a bonafide record of the project work carried out by Ms.Shiva Tyagi under my guidance and supervision. This report in any form has not been submitted to any other University or Institute
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Acknowledgements

We take this opportunity to thank all the people who have rendered their full support to our project work. We are thankful to Dr.Avdhesh Gupta, Professor & PI Dept. of Computer Science and Engineering (CSE-AIML & CSE-DS) for providing us with both time and amenities to make this project a success within the given schedule. We are also thankful to our guide Ms. Shiva Tyagi Assistant Professor Dept. of Computer Science and Engineering, for her valuable guidance and encouragement given to us throughout the project work. We would like to thank the entire CSE Department faculty, who helped us directly and indirectly in the completion of the project. We sincerely thank our friends and family for their constant motivation during the project work.

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Project ID: 2024/CSE(DS)/1/9

Nilofy: A Mood Based Music Recommendation System

A PROJECT REPORT
Submitted By

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Under the Guidance of
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Declaration

We hereby declare that the work presented in this report entitled "NILOFY - Mood Based Music Recommendation System", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. We have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not our original contribution. We have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

We affirm that no portion of our work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, We shall be fully responsible and answerable.

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Acknowledgements

It gives us a great sense of pleasure to present the report of our B. Tech Project undertaken during our B. Tech. Final Year. We owe special debt of gratitude **Mr. Samender Singh**, Assistant Professor, Department of Computer Science Engineering, Ajay Kumar Garg Engineering College, Ghaziabad for her constant support and guidance throughout the course of our work. Her sincerity, thoroughness and perseverance has been a constant source of inspiration for us. It is only her cognizant efforts that has allowed our endeavors to have seen the light the day.

We also like to take the opportunity to acknowledge the contribution of **Dr. Avdhesh Gupta**, Head of Department, Department of Computer Science Engineering, Ajay Kumar Garg Engineering College, Ghaziabad for her full support and assistance during the development of the project.

We would also like the opportunity to acknowledge the contribution of all faculty and staff members of the department for their kind assistance and cooperation during the development of our project. Last but not the least, we acknowledge our friends for their contribution in the completion of the project

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Project ID: 24/CSE-DS/1/11

Medicinal Plant Identification

A PROJECT REPORT
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Declaration

We hereby declare that the work presented in this report entitled **"Identification of Ayurvedic Plants"**, was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.
I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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Acknowledgements

I would like to express my sincere gratitude and appreciation to all those who have contributed to the successful completion of my research on **"Identification Of Ayurvedic Plants."**

I would like to express my sincere gratitude to my project supervisor for their invaluable guidance, constructive feedback, and continuous encouragement throughout this research on medicinal plant identification. Their expertise and insights were instrumental in shaping the direction and quality of this project. Additionally, I am indebted to my mentors for their mentorship and for sharing their extensive knowledge of medicinal plants, which significantly enriched my understanding of the subject.

Furthermore, I would like to acknowledge the support of my colleagues and friends, whose insightful discussions and suggestions were of great help. Special thanks to those who provided technical assistance and moral support. Finally, I owe a great deal of gratitude to my family for their unwavering support and encouragement throughout the duration of this project. Their belief in my abilities has been a constant source of motivation. Thank you all for your contributions and support, without which this project would not have been possible.

Project ID: 24/CSE(DS)/I/114

ML Based Crime Management System

A PROJECT REPORT
Submitted By

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Declaration

We hereby declare that the work presented in this report entitled "ML Based Crime Management System", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

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Acknowledgement

We take this opportunity to express our heartfelt gratitude to all those who have contributed to the successful completion of our B.Tech group project "ML Based Crime Management System". We sincerely thank our distinguished project guide, Dr. Avdhesh Gupta, for his essential advice, knowledge, and continuous support. The guidance, support, and perception provided by Dr. Avdhesh Gupta have been invaluable in molding our research project. His commitment to academic success and his enthusiasm for the subject matter have served as a consistent source of motivation for the group.

We would like to express our gratitude to Prof. Anu Chaudhary, Head of the CSE Department for providing us the opportunity to develop this project and faculty members for their insightful lectures which greatly aided in our comprehension of the ideas used in this project. We would especially like to thank our friends and peers for their support, conversations, and collaborative attitude during the project. We acknowledge the efforts of each member of our group, recognizing the unique strengths and contributions that made this collaborative effort possible.

It has been a pleasure to collaborate, and we are pleased with our group's accomplishments. Finally, we would like to thank our family for their love, support, and encouragement during our academic career. We are grateful to everyone who contributed to the project's successful completion. It has been a journey of shared learning and growth.

Abstract

The project titled “ML Based Crime management system” Crime Management Portal aims at creating a comprehensive and integrated system for enhancing the efficiency and effective policing especially at the Police Station level through adoption of technology. It can be used to record paper less criminal’s record and investigation. This project is mainly useful for adding and getting criminal’s record with the all the important documents related to the specific criminal easily andfaster with crime ID or with criminal’s name. Now a days crimes are increasing day by day at an alarming rate and there are several problemspertaining to manual work which will give inaccurate or unaccepted results. To avoid such outcomes and obtain the most accurate, precise, and desired result we are developing a project which will give the predictions based on information provided by the user based on the datasetsthat are available in that machine and also the data is taken which we get from database. With the help of all the algorithms, techniques, and methodologies we have done in this project we can make some government services accessible to everyone and everywhere regardless of income or accessibility to a police station. Hence, to avoid all the ambiguity and uncertainty we are making a project application that will act as a pers. All the observations and results will be based on the data attributes provided by theuser through that portal. If one is not able to get to the police station this can help them to avail services according their needs. This crime management system will help a range of people fromteenagers to adults to senior citizens. This project aims to provide a platform to predict the occurrences of disease based on various symptoms.

Project ID: 24/CSE(DS)/01/GID-15

ANIMAL RESCUE HELPLINE

A PROJECT REPORT
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Declaration

We hereby declare that the work presented in this report entitled "ANIMAL RESCUE HELPLINE", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

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Acknowledgements

The completion of this major project, the Animal Rescue Helpline, has been made possible through the dedication and support of numerous individuals and organizations. Their contributions have been invaluable, and we extend our heartfelt thanks to each and every one of them.

We are deeply grateful to our project supervisor **Mr. Ashish Dixit** for their guidance, expertise, and unwavering encouragement throughout the duration of this endeavor. Their mentorship has been instrumental in shaping the direction and success of this project.

We extend our sincere appreciation to the volunteers who generously offered their time, skills, and compassion to the operation of the helpline. Your commitment to animal welfare has been a driving force behind the effectiveness and impact of this project.

Our gratitude also goes to the donors and sponsors whose generous contributions provided the necessary resources and funding for the implementation and sustainability of the helpline. Your support has been crucial in ensuring the continuity of our efforts to rescue and assist animals in need.

Special recognition is extended to the veterinarians and veterinary clinics who provided essential medical care and expertise to the animals we rescued. Your dedication to the health and well-being of these animals has been paramount in our mission to alleviate their suffering.

We express our gratitude to the community members who reported cases of animal distress and supported our efforts by spreading awareness about the helpline. Your vigilance and advocacy have played a crucial role in our ability to reach animals in need and provide timely assistance.

Lastly, we would like to thank our families, friends, and loved ones for their unwavering support, understanding, and patience throughout the development and execution of this project. Your encouragement has been a source of strength and motivation during both the challenges and triumphs we encountered along the way.

We would also like to extend our appreciation to the individuals and organizations who generously shared their expertise, resources, and insights, enriching our project and guiding us towards success. Your contributions have been instrumental in shaping the development and implementation of the Animal Rescue Helpline.

Furthermore, we extend our heartfelt thanks to our families, friends, and loved ones for their unwavering support, understanding, and encouragement throughout this journey. Your belief in our abilities and unwavering encouragement have been a constant source of strength and inspiration.

To all those who have contributed to the Animal Rescue Helpline project, whether through their time, resources, expertise, or encouragement, we offer our deepest gratitude. Your collective efforts have made a meaningful difference in the lives of animals

Project ID: 24/CSE(DS)/1/17

DEMONSTRATE FURNITURE MODELS USING AR/VR

A PROJECT REPORT
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Declaration

We hereby declare that the work presented in this report entitled "DEMONSTRATE FURNITURE MODELS USING AR/VR", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. We have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. We have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

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We owe our profound gratitude to our professor in charge, Dr. Avdhesh Gupta Department of Computer Science, who took keen interest on our project work and guided us all along, till the completion of our project work by providing all the necessary information for developing a good system.

We are thankful to and fortunate enough to get constant encouragement, support and guidance from all Teaching staffs of Department of computer science which helped us in successfully completing our project work.

Thank You...

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Abstract

This project explores the application of Augmented Reality (AR) in the demonstration and visualization of furniture models. The primary objective is to develop an AR-based system that allows users to interact with virtual furniture in a real-world environment. By integrating 3D models of furniture into an AR platform, users can view, manipulate, and customize furniture pieces in their actual living spaces, providing a more immersive and practical experience compared to traditional online catalogs or in-store displays.

The project employs advanced AR technologies to overlay digital furniture models onto live camera feeds, enabling real-time interaction. Users can adjust the position, orientation, and size of the furniture models to see how they fit and look within their homes. This interactive experience is enhanced with features such as color and material customization, providing a comprehensive tool for interior design planning.

The implementation involves creating high-fidelity 3D models of various furniture pieces, optimizing them for AR applications, and developing a user-friendly interface that supports intuitive interactions. The system's effectiveness is evaluated through user testing, focusing on ease of use, accuracy of placement, and overall user satisfaction.

This AR-based furniture demonstration system aims to bridge the gap between online shopping and physical stores, offering a convenient and engaging solution for consumers to visualize and select furniture, ultimately enhancing their decision-making process. The project highlights the potential of AR in transforming retail experiences and setting new standards for customer engagement in the furniture industry.

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We would like to express our sincere gratitude to all those who have contributed to the successful completion of this project. First and foremost, We extend our heartfelt thanks to Dr. Avdhesh Gupta (Professor Incharge), for his invaluable guidance, support, and encouragement throughout the course of this project. We are deeply thankful to our project guide Mr. Samender Singh (Assistant Professor) for his constant encouragement, constructive feedback, and academic support. His expertise and insights have been instrumental in shaping the direction and outcomes of this project.

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This project report is not only a reflection of our hard work but also a testament to the support and guidance we received from all those mentioned above. Thank you for making this journey memorable and our project a success.

Project ID: 2024/CSE-DS/1/102

CRYPTOINTEL

A PROJECT REPORT
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We would like to express our sincerest gratitude to all the people who have contributed towards the successful completion of our project.
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3. Sakshya Tripathi

Abstract

The ever-evolving cryptocurrency market demands a comprehensive set of tools for informed decision-making. This project proposes the development of a real-time Cryptocurrency Analytics Platform CryptoIntel, empowering users to navigate this dynamic landscape.

The platform will provide access to real-time and historical market data from various sources, ensuring data accuracy through cleaning and efficient database storage.

Users can leverage a suite of analysis tools, including technical analysis charts with customizable indicators to identify potential trading opportunities.

This project aims to distinguish itself by focusing on a specific data source, advanced analysis and personalized assistance. By providing a comprehensive and user-friendly platform, this project strives to equip cryptocurrency enthusiasts with the necessary tools to navigate the market with greater confidence.

Project ID: 24/CSE-DS/CSE(DS)-1/103

EMOGAUGE

(Assessing Emotions for Engaging Classes)

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Acknowledgements

Apart from the efforts of all the team members, the section of this project report topic depends largely on the encouragement and guidance of our teachers. We take this opportunity to express our gratitude to the teachers who have been instrumental in the approval of this project topic. I'm grateful to our respected Head of the Department Dr. Avdesh Gupta, for allowing me to use the facilities available. We would like to show our greatest appreciation to Mr. Yogendra Narayan Prajapati and other Faculty members. We cannot thank them enough for their tremendous support and help. They motivated and encouraged use very time while selecting the proper project topic. Without their encouragement and guidance, we would not have been able to select the proper topic.

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Abstract

In today's era of widespread video conferencing, the demand for advanced video processing capabilities has surged, particularly in contexts such as meetings, interviews, and various applications reliant on video-based communication. However, existing video systems typically transmit visual data without sophisticated analysis of facial expressions, missing valuable insights into participants' emotions. To address this gap, we propose a novel approach leveraging deep learning techniques for facial expression detection in videos. Specifically, we have developed a Convolutional Neural Network (CNN) and Bidirectional Long Short-Term Memory (LSTM) hybrid model tailored for this task. The CNN component serves for robust feature extraction from facial images, while the Bidirectional LSTM component learns temporal dependencies and patterns crucial for accurate prediction. Our system is engineered to recognize a comprehensive range of emotions, encompassing eight distinct expressions. By integrating this advanced facial expression detection capability into video conferencing platforms, we enable real-time emotional analysis during meetings and other interactions. This empowers users with deeper insights into participants' sentiments, fostering more nuanced and effective communication. Through our implementation, we demonstrate the feasibility and efficacy of employing CNN- Bidirectional LSTM architectures for facial expression recognition in dynamic video streams. Bidirectional LSTMs are utilized to further leverage the contextual information between adjacent frames. This enables the model to learn from the temporal dynamics of facial expressions in videos more effectively, enhancing its overall performance and robustness. This research represents a significant step towards enriching video conferencing experiences with emotion-aware features, ultimately enhancing interpersonal communication and collaboration in diverse settings.

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HealthCare App

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We hereby declare that the work presented in this report entitled "HEALTH-CARE APP", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

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Acknowledgements

We would like to express our sincere gratitude to all those who have contributed to the successful completion of this project.First and foremost, we extend our heartfelt thanks to our project supervisor, **Mrs. Amrita Tiwari**, for their guidance, support, and invaluable insights throughout the project duration. Their expertise and encouragement have been instrumental in shaping our research direction and ensuring the project's success. We are also deeply grateful to our colleagues and classmates who have provided assistance, feedback, and encouragement at various stages of the project. Their collaboration and camaraderie have been invaluable in overcoming challenges and achieving our goals.

We are truly grateful to all those who have contributed to this project in any capacity, and we acknowledge their invaluable contributions with sincere appreciation.

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BITCOIN PRICE PREDICTION USING MACHINE LEARNING

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We hereby declare that the work presented in this report entitled "Bitcoin Price Prediction Using Machine Learning", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

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Abstract

We select the subject of our research as cryptocurrency Price prediction as it is difficult to counterfeit because of this security feature and a defining feature of cryptocurrency and arguably its most endearing allure, is its organic nature;it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation.
In the recent years,in the terms of market capitalization by value and volume bitcoin is one of the most important cryptocurrency so this is the primary reason for us to choose it as our subject for research.Another reason for selection of bitcoin is based on its volatile nature which affects the financial marketers which costs them in monetary value.The price of the bitcoin is fluctuated because of the various reasons such as Company level factors and External factors which include industry shifts,government regulations.The previous forecasting methods uses the machine learning algorithm for prediction of the bitcoin price based on the historical data and market voices related to the bitcoin.It also does not set the upper and lower boundary for fluctuations in the price of bitcoin. Therefore the main objective of our research is to forecast the price of bitcoin using various machine learning algorithms like LSTM,Fb Prophet, ARIMAX and XGBOOST.Out of the four models we will compare the Rmse and Mae and among these four algorithm whichever perform better will be selected as the base model.In this research we set the upper, lower limit and price predicted value of the bitcoin so that the people can judge the fluctuation in the price of the bitcoin.The upper limit can reduce the risk factor when the bitcoin price exceeds it.The lower limit can reduce the sudden crash in the financial market when it exceeds it limit.

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Chapter 1

Introduction

1.1 Overview

In this chapter, we discuss cryptocurrencies, why it is necessary to predict the price of cryptocurrencies and its importance and the challenges associated with cryptocurrencies. It also highlights factors that influence the value of cryptocurrencies. Then, present the problem and research objectives to convey the purpose of the report.

1.2 Cryptocurrency

Cryptocurrency is a digital or virtual form of currency that uses cryptography for security. Unlike traditional currencies issued by governments (fiat money), cryptocurrencies operate on decentralized networks based on blockchain technology.

1.2.1 Key Characteristics of Cryptocurrencies:

- Decentralization: Most cryptocurrencies are decentralized networks based on blockchain technology. This means they are not controlled by any single entity, like a central bank or government.
- Cryptography: Cryptocurrencies use cryptographic techniques to secure transactions and control the creation of new units. This ensures the integrity and security of the system.

- Blockchain Technology: The blockchain is a public, distributed ledger that records all transactions made with a cryptocurrency. It is immutable, meaning once data is recorded, it cannot be changed without altering all subsequent blocks, ensuring transparency and security.

1.2.2 Popular Cryptocurrencies:

- Bitcoin (BTC): The first and most well-known cryptocurrency, created by an anonymous person or group of people using the pseudonym Satoshi Nakamoto in 2008. Bitcoin is often referred to as digital gold due to its limited supply (21 million coins).
- Ethereum (ETH): A blockchain platform that enables the creation of smart contracts and decentralized applications (dApps). Ethereum introduced the concept of programmable blockchain.
- Ripple (XRP): Designed primarily for digital payment processing and remittances, Ripple aims to enable real-time cross-border payments with low fees.Litecoin (LTC): Created by Charlie Lee, Litecoin is a peer-to-peer cryptocurrency that offers faster transaction times compared to Bitcoin.
- Cardano (ADA): A blockchain platform focused on providing a more secure and scalable infrastructure for the development of dApps and smart contracts, with an emphasis on academic research and peer-reviewed development.

1.2.3 Use Cases of Cryptocurrencies

- Digital Payments: Cryptocurrencies can be used for online transactions, providing an alternative to traditional payment methods like credit cards or bank transfers.
- Investment: Many people invest in cryptocurrencies, hoping their value will increase over time. This has led to the rise of cryptocurrency exchanges and trading platforms.

- Decentralized Finance (DeFi): DeFi platforms aim to recreate traditional financial services, such as lending, borrowing and trading, using blockchain technology without intermediaries.
- Smart Contracts: These are self-executing contracts with the terms directly written into code, facilitating, verifying, or enforcing the negotiation or performance of a contract.

1.2.4 Risks and Challenges:

- Volatility: Cryptocurrency prices are highly volatile, which can lead to significant gains or losses in a short period.
- Regulatory Uncertainty: The legal status of cryptocurrencies varies by country and regulatory frameworks are still evolving, leading to uncertainty.
- Security Concerns: While blockchain technology is secure, cryptocurrency exchanges and wallets can be susceptible to hacks and fraud.
- Scalability: Many cryptocurrencies face challenges with scalability, affecting the speed and cost of transactions as network usage grows.
- Environmental Impact: Some cryptocurrencies, particularly Bitcoin, require substantial energy for mining, raising concerns about their environmental footprint.

1.2.5 Conclusion:

Cryptocurrencies represent a transformative innovation in the financial sector, offering new possibilities for digital transactions, decentralized finance and asset management. However, they also present challenges and risks that need to be managed carefully. As technology and regulatory landscapes evolve, the role of cryptocurrencies in the global economy will likely continue to grow and diversify.

Machine learning makes price guessing more accurate. Old ways of setting prices weren't very exact and relied more on guesswork than facts. This often led businesses in the wrong direction. ML can help you make more money. It shows you how prices in your industry change over a year. For example, if you know a supplier usually raises prices in October, you can buy more in September before the prices go up. This saves you money and increases your profit. Using AI for pricing means you'll work faster, more efficiently and get the prices right, no matter what happens in the market. The next chapter talks about different machine learning and deep learning models, which are smart computer methods that help make even better predictions about Bitcoin prices based on social media and past price trends.

1.3 Objective:

The main objective of this research is to forecast the price of Bitcoin using various machine learning algorithms, including Long Short-Term Memory (LSTM), Facebook Prophet (Fb Prophet), Autoregressive Integrated Moving Average with Explanatory Variables (ARIMAX) and Extreme Gradient Boosting (XGBoost). By comparing the Root Mean Squared Error (RMSE) and Mean Absolute Error (MAE) of these models, the research aims to identify the most accurate algorithm for Bitcoin price prediction. Additionally, the research sets upper and lower boundaries for Bitcoin price fluctuations to help mitigate risk and prevent sudden market crashes, thereby providing valuable insights for financial market participants.

Chapter 2

Cryptocurrencies Visualization

2.1 Overview

In this chapter, we will try to visualize different cryptocurrency and their different attributes such as market share, volume along with their high, low , close, open price on daily, weekly, monthly, yearly basis.

2.2 Visualization

The COVID-19 has changed the dynamics of the investors related to investment and trading and the people move their traditional portfolio to cryptocurrency. After the growth of interest of common people towards investment in different field rather than only in Stock and gold market.

So we have split the visualization in two parts where the first parts is from year(2015-2020) and the second one will be from year (2020-2023) and the frequency of data be will on daily basis.The dataset is prepared from the historical data of different cryptocurrencies from yahoo finance and kaggle.Some of the dataset photo are attached in further chapter of data collection.

The various types of visualisations include various graph, charts ,plots and many more is used to visualise different pattern and trends so that which helps in classification to implementation feature engineering, cleaning of

Project ID: 24/CSE/DS/110

Fabric Defect Detection System: Machine Learning Approach

A PROJECT REPORT
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Submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in CSE-DS

to

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DR. APJ ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

May 23, 2024

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Declaration

We hereby declare that the work presented in this report entitled "Fabric Defect Detection System", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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Thanking you,

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KRISHI SAMADHAAN

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Abstract

Develop a Platform with Crop Detection capable of real-time disease recognition Assess the impact of the disease detected on the crop. Investigate the effectiveness of disease detection in enhancing crop quality Provide a user-friendly and accessible platform for both farmers and consumers. The ultimate goal of a crop disease detection project is to mitigate the negative consequences of crop diseases on agriculture, the environment, and food security. By achieving these objectives, such projects can significantly enhance the sustainability and productivity of the agricultural sector while benefiting both farmers and consumers.

Project ID: 2024/CSE(DS)/1/116

AgroX: One stop solution for our farmers

A PROJECT REPORT
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We take this opportunity to express our heartfelt gratitude to all those who have contributed to the successful completion of our B.Tech group project on **"AgroX: One-stop solution for our farmers"**. Our sincere thanks go to Mr. Manoj Kumar, our esteemed project guide, for his invaluable guidance, expertise, and unwavering support, his insightful feedback and encouragement were crucial in shaping the direction of our research. We extend our appreciation to the faculty members of the CSE Department for their valuable teachings and constructive feedback, which significantly contributed to our understanding of the concepts applied in this project.

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This project has been a journey of shared learning and growth, and we are thankful to everyone who played a role, directly or indirectly, in its successful completion.

Abstract

AgroX is an innovative digital platform aimed at revolutionizing the agricultural landscape by integrating cutting-edge technologies such as KOtlin, blockchain, and PostgreSQL on AWS. This project addresses the diverse challenges faced by farmers in India through a range of features and functionalities designed to enhance agricultural productivity and efficiency.

The platform offers easy access to tools through a community-based tool-sharing system, allowing farmers to rent agricultural equipment at affordable rates, thereby mitigating the financial burden associated with purchasing new machinery. Additionally, AgroX provides features for efficient farming yield and price prediction, weather forecasts, and expert advice through tips and tutorials. These tools empower farmers to adopt smart and sustainable farming practices, resulting in increased crop yield and profitability.

AgroX also prioritizes accessibility by offering multi-language support, ensuring that farmers from diverse linguistic backgrounds can easily navigate and utilize the platform. Furthermore, the Smart Connect feature facilitates direct selling of produce to buyers, eliminating middlemen and enabling farmers to receive fair prices for their crops.

The platform promotes awareness and knowledge sharing within the agricultural community through its feed feature, providing updates on new methods, technology, news, and tips. By leveraging advanced technologies such as image recognition and machine learning, AgroX enables farmers

to make data-driven decisions regarding crop management and resource allocation, ultimately leading to improved agricultural outcomes.

Overall, AgroX stands as a testament to the transformative potential of digital solutions in addressing the complex challenges faced by farmers, fostering community engagement, and driving sustainable growth in the agricultural sector.

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Chapter 1

Introduction

1.1 Background

In the heart of rural India, where agriculture is not just a profession but a way of life, the challenges faced by farmers have grown manifold. With the ever-changing climate, the uncertainties in crop yield, the need for modern farming techniques, and the lack of access to vital information, the farming community is grappling with an array of issues.

Recognizing the pressing need to uplift and empower the backbone of the nation, the "AgroX" app emerges as a beacon of hope and a one-stop solution for farmers facing myriad challenges. This revolutionary app is designed to address the diverse needs of Indian farmers, providing them with the tools and knowledge necessary to navigate the complexities of modern agriculture.

The "AgroX" app project emerges from a deep understanding of the challenges faced by farmers in India and a commitment to leveraging technology for their empowerment. The background of this project is rooted in the agricultural landscape of the country and the pressing need to address various issues affecting the farming community.

The project is motivated by the desire to empower farmers by addressing these challenges head-on.The project recognizes that technology can

play a pivotal role in bridging information gaps, promoting sustainable practices, and enhancing the overall well-being of farmers.

1.2 Identification of the Problem

1. Problem 1

The inability of small and poor farmers to invest in expensive tools for their fields is a critical challenge that significantly hampers their agricultural productivity. Agricultural tools, often considered essential for efficient farming practices, prove to be budget busters for these farmers due to various reasons.

1. Financial Constraints
2. Lack of Access to Credit
3. Low Return on Investment
4. Unavailability of Affordable Alternatives
5. Technology Divide
6. Dependence on Traditional Methods

2. Problem 2

The Farmer (Empowerment and Protection) Agreement of Price Assurance and Farm Services Bill, 2020, commonly known as the Contract Farming Bill, has faced criticism and concerns due to perceived shortcomings. Some of the notable shortcomings include:

1. Power Imbalance
2. Price Volatility Risks
3. Potential Exploitation by Corporations
4. Impact on Traditional Agricultural Practices

5. Contract Enforcement Challenges
6. Inadequate Safeguards for Farmers' Interests

Farmers in contract farming arrangements will be the weaker players in terms of their ability to negotiate what they need.

The solution to this problem is provided using our Smart Connect feature.

1.3 Significance of the Problem

The current project, focused on developing the "AgroX" app, holds significant importance for several reasons:

Empowering Farmers:
The project aims to empower farmers by providing them with a comprehensive and user-friendly platform. By addressing key challenges such as secure authentication, multilingual support, access to tools, disease detection, and expert assistance, the app becomes a valuable tool for farmers to enhance their agricultural practices.

Increasing Efficiency: With features like tool rentals, crop prediction, and weather information, the app contributes to increasing the overall efficiency of farming operations. Farmers can make informed decisions, optimize resource usage, and mitigate risks, leading to improved productivity.

Technology for Social Good: The project exemplifies the use of technology for social good. By leveraging mobile applications and digital solutions, it brings modern agricultural practices and knowledge to farmers, regardless of their geographical location or economic status.

Inclusive and Multilingual Design: The inclusion of a multilingual interface ensures that the benefits of the app are accessible to a diverse range of farmers across regions. This inclusive design reflects an understanding of the cultural and linguistic diversity within the farming community.

Addressing Economic Challenges: The project directly addresses economic challenges faced by small and poor farmers. By facilitating the rental of tools, providing expert assistance, and offering predictive analytics for crop yields, it helps in optimizing resource utilization and potentially increasing income for farmers.

Environmental Sustainability: Through features like plant disease detection and weather information, the app indirectly contributes to environmental sustainability. Early detection of diseases and informed decision-making based on weather conditions can lead to reduced reliance on chemical inputs and more sustainable farming practices.

Security and Privacy Considerations: The emphasis on secured authentication and smart connect features addresses concerns related to data security. Ensuring the privacy and security of farmer data is crucial in building trust and encouraging widespread adoption of the app.

Adaptability to Technological Advances: The project's use of technologies like AI for disease detection and predictive analytics positions it at the forefront of agricultural innovation. It creates a foundation for future advancements in technology to further benefit farmers.

In summary, the app is not just a technological initiative; it is a holistic approach to addressing the multifaceted challenges faced by farmers. By leveraging technology, community engagement, and data-driven insights, the project has the potential to make a positive and lasting impact on the lives of farmers, contributing to the sustainable development of agriculture.

Chapter 2

Basics

2.1 Scope

The scope of the app project is broad and encompasses a range of features and functionalities aimed at addressing the diverse challenges faced by farmers in India. The scope areas include:

- **Easy access to Tools:**
  Building a community to share and rent tools in order to help poor and small farmers. Renting agricultural equipment helps one to escape the clutches of exorbitant rates that accompany the purchase of new machines and equipment.

- **Efficient Farming:**
  We have packed features like Disease Detection and Cure, Yield and price prediction, Weather Forecast, feed with tips and tutorials to increase the yield in small pieces of land and adopt smart and sustainable farming.

- **Regional Language:**
  This app comes with Multi-Language Support which makes it localized and easy for the farmers to understand and use.

- **Great Profits:**
  Smart Connect feature helps farmers to sell their produce to buyers by eliminating middle men and at a price equal to MSP or more.