

**BIBLIOGRAPHY OF PROJECT REPORTS**

**ACADEMIC YEAR: 2023-2024**

**DEPARTMENT: COMPUTER ENGINEERING (CMPN)**

Title: IOT based educational companion for visually impaired persons

Author: Joston Movin Dsouza, Brendon Ferrao, Melvina Tulji, Kevin Gomes

Project Guide: Varsha Nagpurkar

Abstract: The Project introduces an educational companion system tailored to meet the unique learning needs of visually impaired individuals. The proposed system leverages available technologies to create an inclusive and interactive learning tool, fostering independence and enhanced educational experiences. The primary objective of this research is to develop a comprehensive solution that addresses the challenges faced by visually impaired learners in accessing and understanding educational content like text and even content-like shapes and other visual content that can't be conveyed in text. This would make it possible for visually impaired people to be able to fully read what is given on a paper without having to ask for anyone else's help, making them fully independent and eliminating the need for scribes and other helpers in their education.

Acc.No.PR 2349/CMPN 623

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Flourishing vision - An AR Based recommendation system for organic wood products

**Author:** Lauren Colaco, Dillon Girkar, Minakshi Devi

**Project Guide:** Monalisa Lopes

**Abstract:** Augmented reality (AR) is a technological Application that overlays digital information and virtual objects on the actual real-world environment thereby enhancing users perception and experience. This paper presents the design, development, and evaluation of an augmented reality website aimed at enhancing user experience within virtual environments. With the rapid increase of AR technologies, there is a growing need to explore innovative ways to integrate AR into web platforms. The proposed AR website combines web-based content with real-time computer-generated sensory input, providing users with an interactive and immersive browsing experience. The development process involved the integration of marker-based AR techniques, 3D modelling, and web technologies to create a seamless user interface. The study explored potential applications of the AR website in fields such as education, e-commerce, and tourism, demonstrating its versatility and adaptability across different domains. The findings highlight the potential of AR websites to revolutionize online experiences, offering new opportunities for businesses and educators to engage users in innovative and meaningful ways. The research indicates a significant improvement in user engagement and

satisfaction levels compared to traditional websites. There is a higher sense of immersion, improved information retention, and enhanced interactivity while exploring AR-enhanced content

Acc.No.PR 2350/CMPN 624

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Smart Vote Ethereum: The Next Frontier in Blockchain-Based Elections

Author: Zaid Shaikh, Roshan Nadar, Juan Noronha, Tejas Bedre

Project Guide: Rajkumar Shende

Abstract: This paper presents "SmartVote Ethereum", a Blockchain-Based E-Voting System that offers transparent, secure, and accessible voting for all citizens. By leveraging blockchain technology, each vote is securely recorded as an unchangeable transaction, ensuring trust and integrity in the voting process. The

SmartVote Ethereum is the next Frontier in Blockchain-Based Elections. This Project explores the potential of blockchain technology to transform electronic voting (e-voting) systems. Traditional voting methods face challenges such as fraud and a lack of transparency, necessitating innovative solutions. Blockchain, with its decentralized and immutable ledger, offers enhanced security and accountability. We propose a blockchain-based voting system with an intuitive user interface to make voting accessible to all. This paper discusses the comprehensive implementation and customizable nature of blockchain voting, offering a promising solution to the shortcomings of traditional methods.

Acc.No.PR 2351/CMPN 625

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Intelligent Defence System: Machine Learning for Cyber Attack Detection

Author: Nikhil bhise, Yash Chourasia, Suzanne corda, Jayden elangikal

Project Guide: Nazneen Ansari

**Abstract:** Cyber-Physical Systems (CPS) represent a revolutionary integration of physical processes, computational resources, and communication capabilities, enabling a wide range of dynamic applications. However, this integration has also led to an increase in cyber-attacks targeting CPS, posing significant threats to their functionality, reliability, and integrity. Among these cyber threats, deception attacks are particularly menacing as they involve injecting false data into the system, compromising sensors or controllers, and potentially corrupting critical information. This system leverages advanced machine learning algorithms to analyze the vast and diverse data generated within CPS. It identifies hidden patterns that could indicate potential threats, thereby enhancing the system's resilience against cyberattacks. Our approach conceptualizes CPS as a network of agents operating within a leader-follower structure. This hierarchical model improves communication and coordination among agents, creating a fortified defense against cyber-attacks. The primary objective is to strengthen CPS security through early detection and mitigation of deception attacks. By harnessing the power of machine learning algorithms within this leader follower agent network framework, we enhance the system's ability to withstand cyber threats. Furthermore, our model empowers the system to proactively identify and counter potential attacks, safe-guarding the integrity and functionality of CPS in an increasingly interconnected digital landscape.

Acc.No.PR 2352/CMPN 626

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Smart Agriculture Using IoT

**Author:** Rhea Pinto, Damayanti Patil, Nathan Joseph, Chryselle Barreto

**Project Guide:** Shamsuddin Khan

**Abstract:** India's agricultural sector forms the foundation of its economy, providing livelihoods for over 58% of the population. However, a burgeoning global population has led to heightened demand for agricultural output, exacerbating supply limitations. This predicament necessitates inventive approaches to reshape agricultural practices. Enter Smart Farming, a revolutionary concept driven by IoT technology. By seamlessly integrating devices, sensors, and advanced analytics, Smart Farming strives to optimize crop yields, curtail resource wastage, and foster sustainable agricultural methods. Its potential extends beyond mere productivity, offering the promise of pesticide-free, organic produce - a vital step toward a healthier, more sustainable food source. As the world grapples with the challenge of feeding an expanding population, Smart Farming offers a compelling solution, promising both increased efficiency and environmental responsibility. This paradigm shift underscores the role of technology in steering agriculture towards a more prosperous and sustainable future.

Acc.No.PR 2353/CMPN 627

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Fake Image Detection using Machine Learning

**Author:** Aditi Bane, Anushka Bhandary, Atharva Satam, Mehul Bhere

**Project Guide:** Kavita Sonawane

**Abstract:** The development and evaluation of effective deep learning models for fake image detection are crucial in combating the proliferation of misinformation and maintaining the integrity of visual content on the internet. The first proposed model, based on a Customized CNN architecture, aimed to mitigate overfitting by excluding data augmentation strategies and reducing the number of filters for feature extraction to enhance computational efficiency. The other model, VGG16 model, is adapted by introducing an additional dense layer with leaky ReLU and sigmoid activation functions to capture intricate features. Both proposed models were trained on a dataset comprising 2041 images (1081 real and 960 fake) and evaluated using standard performance metrics such as accuracy, precision, recall, and F1 score. Results showed notable enhancements: Custom CNN modifications increased accuracy from 52.98% to 93.15%, while VGG16 extensions raised accuracy from 52.98% to 98.16%. Various optimizers, including Adam, RMS Prop, Stochastic Gradient Descent, and AdaDelta, were

explored to improve training efficiency and convergence. Among these optimizers, Adam yielded the best performance in terms of test accuracy for the Modified CNN model and VGG16 model. Furthermore, manual preprocessing techniques such as row/column Mean, Standard Deviation, Variance, Skewness, Kurtosis and DCT were employed to augment data quality before model input for the classifiers KNN, Random Forest, Gradient Boosting, and SVM. A detailed analysis of classifier performance with different preprocessing techniques revealed Skewness and Kurtosis preprocessing to yield superior accuracies, especially when combined with Gradient Boosting.

Acc.No.PR 2354/CMPN 628

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** VirtualMinds (VR Based Education Platform)

**Author:** Yasshita Jathan, Parbatsingh Rajpurohit, Parth Barai, Joel Devasia

**Project Guide:** Rupesh Mishra

**Abstract:** VirtualMinds is a groundbreaking educational platform that integrates virtual reality (VR) and artificial intelligence (AI) technologies to redefine traditional learning methods. By leveraging VR, Virtual Minds transcends geographical boundaries and weather limitations, enabling students to access educational content from anywhere in the world. This accessibility empowers learners to engage with their studies regardless of external constraints. Virtual Minds' AI-driven personalized learning paths are at the core of its innovation. Adaptive algorithms analyze each student's learning patterns, preferences, and progress to create a tailored educational experience. This customization enhances learning efficiency and effectiveness, ensuring that students receive content suited to their individual needs and abilities.

Acc.No.PR 2355/CMPN 629

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** ImagiGen: Converting text and images into a visual storytelling experience

**Author:** Aatif Bhat, Dhruv Desai, Daniel George, Shruti Humbal

**Project Guide:** Dakshata Panchal

**Abstract:** This research delves into the pursuit of generating realistic images from textual descriptions, a compelling yet challenging task within current AI systems. While existing technologies fall short of this goal, recent advancements in recurrent neural networks have demonstrated proficiency in learning discriminative text features. Additionally, (DC-GAN) have shown promise in generating highly realistic images across specific categories like faces, album covers, and interiors. In this study, we introduce a novel deep architecture and GAN formulation aimed at bridging these text and image modelling advancements. Here approach is centered on translating textual concepts into vivid visual representations, effectively converting characters into pixelated images. Through rigorous experimentation, we showcase the capability of our model to produce credible images of flowers from intricate textual

descriptions. This work represents a significant step toward achieving the synthesis of detailed images solely from text, offering insights into the convergence of text and image modelling within the realm of artificial intelligence.

Acc.No.PR 2356/CMPN 630



**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Web3 Marketing Suite: Decentralized Blockchain-Powered Marketing Platform.

Author: Lisban Gonsalves, Axill D'cunha, Jessica Gonsalves, Jason Gonsalves

Project Guide: Nidhi Gaur

Abstract: The "Web3 Marketing Suite" is a groundbreaking decentralized platform driven by blockchain and AI technologies, aimed at transforming the marketing landscape. It integrates advanced features to foster transparency, trust, privacy, and effectiveness for advertisers, influencers, content creators, and users. Through blockchain's transparent and immutable nature, the suite ensures accurate data tracking and accountability, benefiting all stakeholders with reliable insights. Moreover, its privacy-centric approach using blockchain encryption safeguards user information while empowering advertisers with targeted campaigns. AI-powered analytics further enhance campaign refinement, leading to personalized experiences and better conversion rates. Positioned at the forefront of the Web3 era, this innovative suite redefines marketing interactions, establishing a more equitable and productive ecosystem for all participants. The recent development of blockchain technology has accelerated innovation across various industries, including marketing. This disruptive platform encourages accountability and trust among stakeholders, empowering consumers and providing marketers with enhanced opportunities for targeted audience engagement. By prioritizing privacy through blockchain encryption and leveraging AI-driven insights, marketers can deliver more personalized experiences and achieve higher conversion rates. This disruptive Web3 Marketing Suite sets the stage for a new age of digital marketing innovation, offering a vision for a more inclusive and efficient marketing environment.

Acc.No.PR 2357/CMPN 631

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** PQRS Homeopathy

**Author:** Joshua Dsouza, Simson Mastan, Steven Mathew

**Project Guide:** Priya Karunakaran

**Abstract:** Homeopathy, a 200-year-old form of alternative medicine claims to stimulate a healing response and strengthen the body's ability to heal itself. Past COVID-19, Homeopathy has gained its popularity in its disease curing when there were no vaccines produced. Homeopathy also helps in curing several other diseases. In an era marked by rapid digital transformation, the field of healthcare is also experiencing a paradigm shift towards online platforms. This application is designed to provide users with convenient access to homeopathic

healthcare from the comfort of their homes. This application leverages cutting-edge technology to connect patients with experienced homeopathic practitioners, ensuring quality healthcare services at their fingertips.

Acc.No.PR 2358/CMPN 632

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Blockchain Based DRM Management System

**Author:** Vendrell Mendonca, Ashwin Pillai, Elbin Thomas Abraham, Kyle Crasto

**Project Guide:** Anni Minu

**Abstract:** Our project introduces a Blockchain-Based DRM Management System designed for the music industry. This web application serves as a central hub for record labels, artists, listeners, and commercial entities, streamlining the licensing and distribution of music content while enhancing transparency and fairness. Leveraging blockchain technology, the system maintains an immutable ledger that tracks the entire music licensing and distribution process. This transparency promotes trust among stakeholders, allowing artists to easily monitor their earnings and record labels to efficiently manage royalty payouts. Users can securely purchase music with lifelong ownership rights, and commercial entities can secure music rights. The system supports various user roles, including Record Labels, Artists, Users, and Commercial Entities, each with distinct functions. Record Labels can track active songs, manage artists, set pricing, define contracts, and manage royalties. Artists can monitor earnings, track song performance, and view active contracts. Users and Commercial Entities can easily purchase music and ensure licensing compliance. Our project addresses common challenges in the music industry, including royalty payments and unauthorized music usage. By implementing smart contracts, it automates the licensing process, ensuring prompt payments and accurate music usage monitoring.

Acc.No.PR 2359/CMPN 633

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** UniXplore- A University Assisting App by Using Machine Learning

**Author:** Ashlyn Stephen Dsilva, Lincia John Dsouza, Simone Savio Gracias

**Project Guide:** Mannivanan Panchanatham

**Abstract:** In the ever-evolving realm of higher education, UniXplore emerges as a groundbreaking University Assisting App, harnessing the power of Machine Learning to revolutionize the university selection and application process. With an intuitive interface, UniXplore captures user preferences, including academic interests, geographical preferences, budget constraints, and extracurricular pursuits, to tailor its recommendations. Through sophisticated machine learning algorithms, UniXplore analyzes this data to provide a personalized list of recommended universities, aligned with each user's unique profile. Not stopping at mere suggestions, UniXplore facilitates informed decision-making by enabling side-by-side comparisons of universities based on various parameters such as academic reputation, program offerings, and campus facilities. Recognizing the complexities of the application journey, UniXplore offers a comprehensive checklist of required documents, expediting the process while minimizing oversights. Additionally, UniXplore incorporates a dynamic Resume and Statement of Purpose (SOP) builder, leveraging machine learning techniques to guide users in crafting compelling documents tailored to each university's expectations. Utilizing Cosine similarity for text comparison, Euclidean similarity for numeric values, and a Word2Vec model for word vectorization, UniXplore calculates a final weighted average of both similarities to enhance accuracy. In essence, UniXplore stands as a transformative tool, employing machine learning to cater to individual preferences, streamline decision-making processes, and facilitate the university application journey, thereby reshaping the landscape of higher education.

Acc.No.PR 2360/CMPN 634

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Opti Ware: Enterprise Business Suite

Author: Lance Fernandes, Varad Prabhu, Carl Mascarenhas, Lyann Henriques

Project Guide: Snehal Kulkarni

Abstract: In the dynamic landscape of modern business, efficient Supply Chain Management (SCM) is vital for seamless operations and successful product development. However traditional manual record-keeping practices pose several challenges, including error-prone data handling, information inconsistencies, and limited analytical capabilities. These issues can lead to delays in product development, hinder proactive decision-making, and inflate IT and maintenance costs. Integrating various systems and technologies within the SCM framework further compounds these challenges. Furthermore, the ERP-driven approach promises manifold benefits, including heightened operational efficiency, increased productivity, reduced inter-departmental information dependency, and enhanced access to critical data. The system's comprehensive nature offers predictive and analytic features, empowering organizations to forecast trends, identify opportunities, and proactively navigate challenges. Notably, the proposed solution's emphasis on integration streamlines various systems and technologies, mitigating the issues often encountered in SCM environments. This project aims to revolutionize Supply Chain Management by promoting an ERP-based system. By addressing manual record-keeping and data fragmentation, it creates a foundation for streamlined operations, informed decision-making, and faster product development, enabling cost savings and a competitive edge in today's market.

Acc.No.PR 2361/CMPN 635

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title: Craft Chain Logistics: A Complete Solution for Optimizing Various Operations**

**Author: Roosewelt Antony, Onil Dsouza, John Gomez, Alec Lewis**

**Project Guide: Ankita Karia**

**Abstract:** In the modern digital landscape, a robust online presence is imperative for businesses. This project, titled "CraftChain Logistics," is dedicated to developing a software solution to ease several operations of Kondoth Fabrications. With a profound focus on fostering efficiency within the domain of fabrication services, our primary objective entails the development of a comprehensive website tailored to the firm's needs. There are several companies in the world that are unable to manage their inventory and several other operations properly, which leads to early failure of the business. In order to avoid this, we have come up with an Enterprise Resource Planning (ERP) based website as a solution. We plan on enhancing resource allocation, eliminating inefficiencies, and improving overall productivity. The website would eliminate the paperwork involved in the day-to-day operations of the business, this would help in reducing human faults and speed up the process. Our system would track the overall sales and the available inventory of the business. One of the few goals involves implementing advanced prediction algorithms that leverage historical data, statistical techniques like time series analysis and regression, to generate accurate demand predictions. In conclusion the main aim of this project is to make the work process smoother, reduce unnecessary waste and boost productivity overall.

**Acc.No.PR 2362/CMPN 636**

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Empower Her: A Women's Safety Wristband with mobile application.

**Author:** Greeshma Hedvikar, Trinity Naidu, Celine John Philip, Kris Rawal

**Project Guide:** Bidisha Roy

**Abstract:** Technology at its very core, is differentiated as good or bad, a boon or a bane. As technology continues to become an integral part of our lives, it presents us with a wealth of opportunities that benefit our society. Nevertheless, violence like acid attacks, rape, kidnapping, and harassment has taken the forefront in a women's lifespan over a persistent course of time. While we continue to strive for a better and safer tomorrow, issues like women's safety and security have taken a prominent position globally. While so, a critical question still dawdles our minds, "Are women really safe? Are the pre-existing measures concerning a woman's safety sufficiently adequate?" While traditional methods of self-defense, such as pepper spray or crying out for help can sometimes be effective, their use case is limited, proving futile in grave situations. Each passing day, the media presents to us a myriad of incidents that shake the very fundamentals of a woman's safety. Be it a local commute, or a work-emergency, women are constantly subjected to multiple threats, making sure to guarantee their safety or be the next victim. Empower Her aims to be a step towards a cogent solution to the tenacious

issues of women's safety. Embraced with real-time connectivity and sensor integrations, accompanied by a mobile application, Empower Her proposes a unique solution embedded in a classic wristband.  
Acc.No.PR 2363/CMPN 637

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Traffix: Efficient Traffic Control using IoT

**Author:** Reuel Amin, Alarik Correa, Renoy Dsouza, Elvina Fernandes

**Project Guide:** Prachiti Pimple

**Abstract:** Our project intends to reduce traffic congestion brought about by antiquated, inefficient traffic management technologies that operate on a predetermined countdown. Traditional systems assign timings without taking into account the actual traffic density on a given road, which results in significant red-light delays. Our project provides a solution that ensures that traffic light durations are based on real-time traffic conditions, instead of working on static allotted timings, allowing for proper management of resources and time. Our project is based on calculating the current traffic density, which is derived using a combination of image processing techniques and ultrasonic sensors. A Raspberry Pi at junctions is responsible for allocating the durations for the traffic signals. It achieves this by input from cameras and sensors to manage the signal lights at intersections. Additionally, this processed data from Raspberry Pi and is uploaded to a database called SQLAlchemy. This data can be accessed and utilized to periodically check traffic flow intervals. The values saved in the cloud will also be helpful in anticipating the density of traffic in the event of system failure due to hardware failure or extreme difference in values from the camera and the ultrasonic sensors. The smooth passage of vehicles is made possible by this traffic management system, which also incorporates a fail-safe system that will be helpful in unforeseen events.

**Acc.No.PR 2364/CMPN 638**



**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** AR Assisted Restaurant Service Solution

**Author:** Jess Gonsalves, Jeff Dbritto, Jess Lopes, Vian Dabre

**Project Guide:** Pradhnya Pradhan

**Abstract:** The conventional process of selecting menu items in restaurants often relies solely on textual descriptions and static images, which may not effectively convey the appearance and presentation of dishes. Augmented Reality (AR) technology emerges as a promising solution to this challenge by enabling customers to visualize menu items in immersive 3D representations, revolutionizing the way patrons interact with restaurant menus. This paper elaborates on the development of an Augmented Reality Menu System (ARMS), meticulously designed to transform and elevate the dining experience for customers. ARMS endeavors to provide an exceptionally visually engaging and convenient dining encounter by allowing patrons to preview menu items in meticulously crafted, realistic AR renderings before placing their orders. This system comprises a sophisticated mobile application intricately integrated with the restaurant's existing digital infrastructure, empowering customers to seamlessly access the AR menu via their smartphones. Through the intuitive ARMS app interface, users can effortlessly browse through the extensive menu offerings, access comprehensive information about each item, and behold vivid, life like 3D models of dishes elegantly overlaid on their physical surroundings. This paper meticulously outlines the intricate design, meticulous implementation, and thorough evaluation of ARMS, underscoring its profound potential to significantly enhance customer satisfaction, refine decision-making processes, and catalyze innovation within the restaurant industry. A comprehensive pilot study was meticulously conducted to meticulously assess the usability, effectiveness, and overall impact of ARMS in a real-world restaurant setting, with participants unanimously expressing overwhelmingly positive feedback regarding the system's unparalleled usability, profound engagement capabilities, and transformative influence on their dining experience. The compelling findings suggest that ARMS has the unprecedented potential to utterly transform the way customers interact with restaurant menus, rendering the dining experience markedly more immersive, informatively enriching, and profoundly enjoyable. Future research endeavors are poised to focus on further augmenting the features and capabilities of ARMS, meticulously investigating its enduring effects on

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customer behavior, restaurant performance metrics, and exploring innovative avenues for seamless integration with emerging technologies such as interactive ordering systems and personalized recommendations. Keywords- Augmented Reality, Restaurant, Menu System, Customer Experience, Innovation

Acc.No.PR 2365/CMPN 639

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Talk To Tabular Data Using NLP Black book

Author: Deepak Parihar, Lipika Parui, Meet Patel, Jayesh Kapgate

Project Guide: Pradnya Sawant

Abstract: The convergence of natural language processing (NLP) and data analysis has given rise to innovative ways of interacting with and deriving insights from structured data. This project presents an advanced system that enables users to engage in intuitive conversations with tabular data through the power of NLP. The objective is to bridge the gap between complex data analysis tasks and non-technical users, making data exploration and decision making more accessible. Traditional data analysis methods often require users to possess specialized skills in querying languages and data manipulation techniques. This project aims to democratize data interaction by developing an interface that leverages NLP models to interpret and respond to natural language queries related to tabular data. Through dynamic conversations, users can effortlessly filter, sort, summarize, and extract insights from large data sets without the need for prior technical expertise. The core of the system involves training a robust NLP model capable of understanding diverse user inputs and accurately interpreting their intent. The model is integrated into a user-friendly interface that offers a seamless and interactive experience. Users can ask questions, issue commands, and express data-related inquiries in plain language, receiving real-time responses accompanied by visualizations and descriptive explanations. Key features of the proposed system include adaptability to various data domains, accurate context understanding, and the ability to handle complex queries. The NLP model is designed to learn and generalize from user interactions, enhancing its performance and accuracy over time. Additionally, the system prioritizes security, privacy, and data integrity, ensuring that user information and sensitive data are handled with the utmost care. The potential impact of this project spans across industries, empowering decision-makers, researchers, analysts, and curious individuals to harness the potential of data without the barriers of technical complexity. By transforming tabular data interactions into natural conversations, this project sets the stage for a more inclusive and data-driven future, where insights are just a question away.

Acc.No.PR 2366/CMPN 640

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: EBAA- Electronic Based Analysis for Advertising

Author: Karan Kamath, Prathamesh Parab, Vedant Pednekar

Project Guide: Jayashri Mittal

Abstract: Billboard advertising is a powerful medium for conveying brand messages, but its effectiveness has traditionally been hindered by the absence of precise measurement methods, relying instead on rough estimates. This research endeavors to usher in a new era in advertising by developing an automated system that can accurately and objectively count billboard viewers. This project seeks to address these limitations by leveraging advanced computer vision and machine learning techniques. By directly counting the number of viewers looking at billboards and considering aspects like viewer demographics and contextual data, we provide advertisers with real-time, highly accurate insights. This approach reduces the reliance on human labor and offers a groundbreaking means to tailor advertising content to the right audience, ultimately yielding a significantly higher return on investment.

Acc.No.PR 2367/CMPN 641

LEARNING AND INFORMATION RESOURCE CENTRE

Title: Smart Exercise Monitoring System

Author: Shloka Shetty, Hrutik Pujari, Sherwin Rumaou, Gavin Dabre

Project Guide: Nidhi Gaur

**Abstract:** We want to encourage everyone to work out at home. Individuals lack the funds to join a gym and the time to devote to fitness. Those who attempt to workout at home without the guidance of a skilled trainer face the risk of getting serious injuries over time due to anomalies in their posture. Smart Exercise Monitoring System is a one-stop solution for all your exercise needs. Through our simple-to-use application, we intend to produce an application that answers the various problems that people face. That is why we have a Smart Exercise Monitoring System, so you can keep proper posture, assess potential physical strain, and if you all are likely to experience it, we recommend various exercises to overcome the same. You can use this application to track your progress, guide you 'all by demonstrating how to perform exercises, warn when your posture is off, count the number of repetitions. We provide a posture assessment [1] system designed specifically for fitness. We initially identify human posture in a fitness live stream where a user repeatedly makes a fitness-related activity. A Convolutional Neural Network (CNN) is then used to define the evolution of posture in successive frames. TensorFlow, a machine-learning library, is used for extraction of the key-points of a body. With the help of Posnet, the application can identify human stances in the provided live stream and, by connecting these points, may create a skeleton structure of your pose. We show that the suggested approach may correctly identify poor postures when users carry out the following exercises. In addition, a voice interface is used which provides real-time feedback on a user's posture during exercise. When inappropriate postures are recognized, the system would immediately deliver auditory signals to guide users in adjusting their stances and avoiding any injuries. We think that this study is one of the rare ones that use deep neural networks to assess fitness.

Acc.No.PR 2368/CMPN 642

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Great Energy Predictor

**Author:** Yash Pakhale, Maitreyee Patil, Aaron Pereira, Samvid Shastri

**Project Guide:** Snehal Kulkarni

**Abstract:** In today's rapidly evolving world, energy consumption and management play pivotal roles in achieving sustainability and cost-efficiency goals. To address this challenge, this project presents an innovative Energy Prediction System powered by machine learning techniques. The system leverages historical energy consumption data, weather patterns, and other relevant parameters to forecast future energy usage, enabling proactive decision-making and resource optimization. The core components of the Great Energy Predictor consist of data collection, preprocessing, feature engineering, model training, and real-time predictions. Historical data from various sources, including smart meters and weather stations, are gathered and transformed into a structured format. Feature engineering techniques are applied to extract meaningful insights from the data, such as identifying seasonal trends and correlations with external factors. Machine learning models, including regression, time-series forecasting, and deep learning, are trained on the preprocessed data. These models are fine-tuned to capture complex relationships between energy consumption and influencing factors. Moreover, advanced algorithms are employed to handle nonlinearities, handle missing data, and ensure robustness against unexpected deviations.

**Acc.No.PR 2369/CMPN 643**

**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Braille Translator

Author: Shreya Pandey, Max Tuscano, Benen Lobo, Sinon Lobo

Project Guide: Nazneen Ansari

Abstract: For persons who are blind or visually impaired, Braille is a vital method of tactile reading and writing in which raised dots act as the imprints of the alphabetized letters. The alphabet is represented by each letter in a different way, and each letter also has combining signs that function similarly to punctuation. Six dots are combined. Usually, to read Braille, one must trace each line from left to right using their fingertips and sense of touch. Braille is present in just a very small portion of written or printed texts. A system for automatic recognition of Braille Text to English or English Text to Braille is necessary to bridge the gap between visually sighted people and other people via which they both may communicate. There is always a need for a system that can do both i.e. can take Braille written text or text images and convert them into equivalent English text via which keen sighted people can understand braille text and easily communicate with visually impaired people and can take English written text or text images from the system and convert them into equivalent Braille code. Our system will take the dataset of Braille Character Images which will be used to identify the Braille text characters from images. Braille text Images will be converted into English text using CNN model. The system will utilize the potent Open-Source Tesseract OCR Engine to extract the English text from images utilizing and then convert the text to Grade 1 Braille which is the most basic format and Grade 2 Braille which is a little advanced. Our project provides an efficient way of converting to text between English Language and Braille Code.

Acc.No.PR 2370/CMPN 644

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title: Sakhi - An Artificial Intelligence Based Application for Supporting Workplace Harassment Victims**

**Author: Swarali Mahimkar, Nisha Bhardwaj, Priyanka Kambli, Vaishnavi Sawant**

**Project Guide: Priya Karunakaran**

**Abstract:** Sexual harassment in the workplace still affects people of all genders in today's society, and despite efforts to address it, organizations continue to face this challenge. Our system, "Sakhi," which means "friend" in Hindi, addresses the crucial issue of reducing the psychological distress experienced by survivors of sexual harassment in the workplace. The proposed system makes use of a conversational agent that can provide advice related to workplace harassment in compliance with the Prevention of Sexual Harassment (POSH) Act of India. In addition, this strategy is designed to assist and enable victims in efficiently remembering important information regarding the harassment event, thus enabling a more thorough and precise reporting procedure. We break down our task into three distinct artificial intelligence components: Extraction of spatiotemporal information (Named Entity Recognition task), Identification of the type of harassment (Classification task) and conversation with users (using a flow-based chat-bot). One key aspect that sets our system apart is its ability to provide guidance specific to the Indian law according to the POSH Act. While there are existing chatbot systems that can record harassment, there are no systems that can provide guidance tailored to the Indian law, making our approach novel and valuable in addressing workplace sexual harassment effectively.

**Acc.No.PR 2371/CMPN 645**



**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Career Carrier

Author: Krishna Vishwakarma, Urvi Bajaj, Sakshi Bhosle, Mihir Ajmera

Project Guide: Prasad Pulekar

Abstract: Students and applicants can use the career portal as a platform if they are unsure of how to enter and want to be recognized for their talent and ability to leave a lasting impression. User credentials, including educational level, must be entered upon login. The best job option for each user is chosen by the job users based on their skill-based knowledge. Moreover, it allows the used to choose the best function and provides detailed information about the selected option. It also provides detailed instructions on how to do the job and the certifications required. Jobs are still predicted by giving tests based on achievement and interest. It has additional features that allow users to learn more about the courses. Today, career carrier provides a platform for students or job candidates to assess their talents and abilities and choose a suitable career if they are unclear of which path to choose. Based on the person's educational background and skill-based knowledge, it selects the best possible career. This career projection is continued via quizzes. Other features include awards, course recommendations, and more. This career path's main objective is to help students identify their skills and interests so they may choose the profession they wish to work in later on.

Acc.No.PR 2372/CMPN 646

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Finance Tracking System Using Blockchain

**Author:** GURURAJ SHETVE, ROHIT RATHOD, AMEYA GADHE, NEERAJ SHARMA

**Project Guide:** Rajkumar Shende

**Abstract:** This project presents a groundbreaking blockchain-based finance tracking system tailored for organizations seeking enhanced security, transparency, and efficiency in managing their financial data. Leveraging distributed ledger technology, the system securely stores a wide array of financial information, including transactions, accounts, and balances, prioritizing present-day applicability over speculative future capabilities. Its scalability allows seamless adaptation to evolving organizational needs, eliminating reliance on intermediaries like banks or payment processors to streamline financial processes and reduce associated costs. With user-friendly design at its core, even non-technical users can easily navigate and utilize its features, facilitating swift integration into existing workflows without extensive training. Moreover, the system promotes transparency and accountability by recording all transactions on the blockchain, providing a verifiable audit trail that enhances trust among stakeholders. Overall, this blockchain-based finance tracking system offers a comprehensive solution for organizations to securely, transparently, and efficiently manage finances, making it a valuable asset across industries.

Acc.No.PR 2373/CMPN 647

LEARNING AND INFORMATION RESOURCE CENTRE

Title: HairTryOn: A Hair Styling Platform

Author: Durgam Devani, Gloriya Rodrigues, Aman Tiwari, Darshan Jain

Project Guide: Ankita Karia

Abstract: The proposed application aims to provide a virtual hair styling experience for users. It leverages the user's image to apply desired hairstyles and colors, creating a personalized and interactive platform for hair style exploration. The application utilizes advanced algorithms such as StyleGAN2 for generating realistic hair styles, Histogram of Oriented Gradients (HOG) for feature extraction, and Support Vector Machine (SVM) for classification tasks. These algorithms work in tandem to accurately map the hairstyle onto the user's image, ensuring a seamless and realistic appearance. The application also offers a color adjustment feature, allowing users to experiment with various hair colors. This feature enhances the customization options available to the user, making the application versatile and user-friendly. Overall, this application serves as a virtual hairstyling tool, enabling users to visualize different hairstyles and colors on their own image before making a real change. This not only enhances user engagement but also aids in making informed decisions about their hairstyle choices.

Acc.No.PR 2374/CMPN 648

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** AUTOSAGE Automated machine learning for intelligent insights

**Author:** Rachel Abraham, Simran Lopes, Manika Arunkumar, Saloni Mhadgut

**Project Guide:** Dakshata Panchal

**Abstract:** Automated Machine Learning (AutoML) has emerged as a revolutionary paradigm that streamlines the process of model selection, hyperparameter tuning, and data preprocessing. In the evolving landscape of machine learning, where data diversity and volume grow continuously, manually tuning algorithms and preprocessing steps can be prohibitively time-consuming, even for experts. Traditional machine learning requires domain expertise to decide on suitable algorithms, hyperparameters, and data preprocessing techniques, which could be overwhelming given the plethora of choices. AutoML simplifies this by automating these steps, enabling non-experts to harness the power of machine learning and facilitating more consistent and potentially superior performance.

**Acc.No.PR 2375/CMPN 649**

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** SecureRoute: Supply Chain Management using Blockchain

**Author:** Anushka Rane, Vrushika Sawant, Seona Dabre, Sahil Patel

**Project Guide:** Rupesh Mishra

**Abstract:** Supply chains today are quite valuable and offer a significant competitive advantage. Modern supply chains have developed into extraordinarily intricate value networks, which are a significant source of competitive advantage. Blockchain technology has the potential to more effectively enhance product traceability, authenticity, and legality by building a permanent, shareable, auditable record of products along their supply chain to maximize overall value generated, cost quality improvement, quick delivery, delivery optimization, cost reduction, and flexibility. Data cannot be deleted once it has been entered. A contract that may be automatically executed and that must be carried out by its provisions is known as a smart contract. Smart contracts can be automatically executed by computers, but some tasks still call for human input and management. Blockchain technology and smart contracts can be used to automate complicated transactions. The project's incorporation of blockchain and smart contract technology will significantly improve the data security, authenticity, time management, and transaction processes of traditional supply chain management systems. Blockchain protects data from unauthorized access in addition to the shortcomings of the current system. Some of them consist of a lack of traceability, issues preserving product safety and quality, an inability to monitor and manage inventory in stores and warehouses, rising supply chain costs, and so forth.

Acc.No.PR 2376/CMPN 650

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Video Analyser and summariser

**Author:** KRISHIL SHAH, CYRUS COUTINHO, RAYSON DSA, DHARUVIN PATEL

**Project Guide:** Kavita Sonawane

**Abstract:** In the digital age dominated by online video content, YouTube stands as a central hub for a diverse array of topics and discussions. This system presents a comprehensive framework that redefines the YouTube experience, introducing innovative features aimed at enhancing interactivity, information accessibility, and engagement. The Video Analyzer and Summarizer (VAS) represents a cutting-edge technological advancement, specifically designed to enrich the user experience and deepen the understanding of YouTube videos for informational, educational content. At its core, VAS provides an elegant summary of videos, transforming extensive content into digestible highlights for quick comprehension. Its Quiz Generator further engages users by creating interactive quizzes based on the video watched, promoting active learning and content retention. VAS stands out by incorporating Sentiment Analysis, which sifts through YouTube comments to gauge viewer emotions and opinions, offering content creators valuable insights into audience engagement and sentiment. A cornerstone of VAS is the Personal ChatBot, tailored to resolve individual queries related to the video. This feature ensures that users can obtain detailed explanations and clarifications, making the learning experience more interactive and personalized. The Timestamp Provider, another key feature, meticulously details the coverage of various topics within a video, specifying the time duration for each segment. Moreover, the Trailer or video summarization feature innovatively converts long videos into short, compelling trailers, capturing the essence of the content. This is particularly useful for viewers deciding whether a video meets their needs or interests, without committing to watching the entire length. In sum, the Video Analyzer and Summarizer is not just a tool but a comprehensive ecosystem designed to make video learning and interaction more efficient, engaging, and insightful.

Acc.No.PR 2377/CMPN 651

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** AI-Powered Academic Research Assistant

**Author:** Daniel Ferreira, Prem Tatkari, Divyesh Mistry, Kyran Almeida

**Project Guide:** Pradnya Sawant

**Abstract:** In the ever-expanding landscape of academic research, the demand for efficient and intelligent tools to assist researchers in navigating, comprehending, and synthesizing vast amounts of information has never been more pressing. This project introduces an innovative AI-powered Academic Research Assistant—a dynamic and sophisticated system designed to revolutionize the research process. Harnessing the capabilities of cutting-edge natural language processing and machine learning techniques, the AI-powered assistant seamlessly integrates into the researcher's workflow. As a result, the AI-powered Academic Research Assistant stands poised to reshape the landscape of academic research. It offers a tangible solution to the information overload conundrum, amplifying research efficiency, knowledge dissemination, and cross-disciplinary collaboration. This project not only exemplifies technological innovation but also underscores the potential for AI to augment human intelligence in tackling complex, knowledge-intensive challenges.

Acc.No.PR 2378/CMPN 652

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title: NETWORK INTRUSION ANALYSIS**

**Author: Darshan Jethva, Siya Khamkar, Anish Pachchhapur, Jenil Jasani**

**Project Guide: Varsha Nagpurkar**

**Abstract:** In the interconnected world of today, network security is of paramount importance, given the relentless and ever-evolving cyber threats that organizations and individuals face. Traditional intrusion detection systems, relying on predefined rules and signatures, struggle to keep pace with the sophistication of modern attacks. Network Intrusion Analysis using Machine Learning offers a dynamic and proactive approach to mitigating these threats. This project delves into the application of cutting-edge machine learning techniques to detect, analyze, and respond to network intrusions effectively. Leveraging extensive datasets such as the UNSW-NB15 dataset, the project aims to develop and evaluate models capable of distinguishing between legitimate network activities and security breaches. By embracing machine learning, the project seeks to provide early threat detection, swift responses, and adaptability to the ever-changing cybersecurity landscape, thereby fortifying network defenses and safeguarding critical data.

**Acc.No.PR 2379/CMPN 653**



**LEARNING AND INFORMATION RESOURCE CENTRE**

Title: Comprehension using NLP

Author: Yash Pambujya, Swain Pereira, Cimmona Pereira, Elston Farel

Project Guide: Bidisha Roy

**Abstract:** In this day and age, easy access to an expansive amount of information has gotten all the more tedious with the expeditious growth of the internet. To administer this enormous amount of information, we need systematic tools and methods. With the exponential growth of content in Hindi, there is an increasing need for efficient automatic summarization techniques tailored to this language. This project presents a comprehensive approach to Hindi text summarization, leveraging advanced natural language processing (NLP) techniques. The project presents an advanced technique for summarizing Hindi text, catering to the language's unique characteristics. The approach involves preprocessing, followed by abstractive summarization using specialized neural network architecture. The model, trained on Hindi short and long text dataset, excels at capturing contextual nuances. Evaluation against diverse datasets showcases its significant improvement over baseline models. By bridging a gap in Hindi NLP, this research contributes to better information retrieval, content curation, and document indexing in Hindi.

Acc.No.PR 2380/CMPN 654

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** PlaceEase - Placement Helping and Management System

**Author:** Siddesh Mishra, Joseph Roy, Ryan Murzello, Arun Garwan

**Project Guide:** Monalisa Lopes

**Abstract:** PlaceEase is a data-driven solution designed to optimize student placement in response to today's complicated requirements. PlaceEase uses Feedforward Neural Networks (FNNs) to anticipate future student placement results. With its user-friendly interface, ML model, database, and web platform, its architecture makes it easier for stakeholders to communicate with one another. PlaceEase estimates student placements with accuracy thanks to thorough data collecting, preprocessing, and training. The outcomes demonstrate its effectiveness in forecasting both positive and negative outcomes, and areas for improvement are noted. Subsequent upgrades will incorporate cutting-edge AI techniques to consistently enhance industry insights and matching accuracy. PlaceEase is a revolutionary method to student placement that provides effective, data-driven tactics to recruiters, students, and institutions.

**Acc.No.PR 2381/CMPN 655**

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Land Registry using Blockchain

**Author:** Antony Jerin Nadar, Krunal Patel, Suryaprakash Singh, Adarshkumar Vishwakarma

**Project Guide:** Shamsuddin Khan

**Abstract:** In order to purchase or sell a particular piece of land one has to go through the process of a traditional government-based land registration system. Normally, the land registration process involves drafting of the deed, obtaining encumbrance certificate, acquiring stamp paper from authorized vendors, signing of the document by both the parties, document verification and registration. Traditional land registration systems have been plagued by challenges such as fraud, inefficiency, and lack of transparency. Moreover, in India, it is a time-consuming process and involves many middlemen thereby increasing the overall purchase cost. There are also many instances where documents get tampered or misplaced by these middlemen. Blockchain-based land registration system has the potential to revolutionize the way land records are managed, providing enhanced transparency, security, and efficiency to the land registration process. Blockchain technology has the potential to address these challenges and revolutionize the land registration system by introducing transparency, security, and efficiency into the land registry system with the use of features like Immutable and Transparent Records, Smart Contracts for Automation, Decentralization and Consensus Mechanisms, Reduced Administrative Overhead.

Acc.No.PR 2382/CMPN 656

**LEARNING AND INFORMATION RESOURCE CENTRE**

**Title:** Criminal and Culprit Visage

**Author:** Samson Joel Kumar Nadar, Saurabh Anilkumar Mishra, Alvin Alex, Joshua Ashok Torlikonda

**Project Guide:** Jayashri Mittal

**Abstract:**

In this modern age, the overall crime rate is increasing day-by-day and to cope up with this the law enforcement departments too should find ways that would speed up the overall process and help them in bringing one to justice. One such way can be using face recognition technology for identifying and verifying the criminal. The traditional approach here is to use the hand-drawn face sketches drawn by forensic sketch artists to identify the criminal, modernizing this would mean using the hand-drawn sketch and then matching them with the law enforcement department's database to identify the criminal. Using this approach would result in the various limitations with latest technologies and even would be time consuming as there are very few forensic sketch artists available when compared to the increasing crime ratio. Our project is aimed at decreasing the time span and speeding up this process by providing a standalone platform to the law enforcement department which would allow users to create an accurate face sketch of the suspect without the help of a forensic sketch artist and no special training or artistic skills. The sketch can be created using a drag and drop feature in the application with a variety of face elements and can automatically match the drawn composite face sketch with the law enforcement department's database much faster and efficiently using deep learning and cloud infrastructure.

Acc.No.PR 2383/CMPN 657