AC Patil
College of Engineering

Book of Abstract

ICATM- 2024

2nd International Conference on Advances in Technology and Management

April 5-6, 2024

Jawahar Education Society's
A. C. Patil College of Engineering
Plot no.17, Sector-4, Kharghar Navi Mumbai, Maharashtra 410 210 | India.

AC Patil
College of Engineering

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A. C. Patil College of Engineering

Presents

ICATM- 2024

2nd International Conference on
Advances in
Technology and Management

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Plot no.17, Sector-4, Kharghar Navi Mumbai, Maharashtra 410210 | India.

Preface

Jawahar Education Society's A. C. Patil College of Engineering, to accomplish its vision, has a mission to create a platform to Empower education with research, innovation and entrepreneurship. Powered by technology, Faculty excellence, industry collaboration, inclusion and mind set of growth, is developing itself into an institution “Everything Plus Imagination". In meeting this challenge of knowledge, the saga contains the elements of spirit, zeal, determination, vision, and meticulous planning. A. C. Patil College of Engineering has shaped its institution to the contemporary as well as future demands of true concept clarity education. The uniqueness of A. C. Patil College of Engineering lies in its ability to use quality education as a powerful means of social transformation. With rapidly growing technology and the advent of new devices, new boundaries are continually being established in engineering. The second International Conference on “Advances in Technology & Management” (ICATM 2024) aims to provide an educational literary forum for all those who vent to their research passion through myriad subjects, various trends, thought provoking concepts and genres. The vision is to bequeath academia podiums to researchers to present their original, innovative, pragmatic, and high-quality research work.

The 2nd International Conference on "Advances in Technology & Management” (ICATM 2024) proceedings consistently and constantly keeping pace with changing times in tune with rapidly shifting readers' preferences and expectations. This volume of abstracts is the collection of technical contributions received from various researchers for the conference. The response to our call of paper was record setting. That is out of 325 papers 192 accepted papers will be presented in 15 oral sessions over two days. Around 200 delegates are expected to participate in the conference. It is a premiere resource for original research devoted to the publication of contributions in the field of science, engineering, and management. This is to provide an outlet for innovative and qualitative research. The range of conference proceedings extends from the academic period of the present times to future needs.

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Hon. Shri. Rohidasji C. Patil
Founder,
Jawahar Education Society

Small beginnings are so often the prelude of great things. My heart overwhelms with joy and gratitude when I think of the team that what they have done for this institution. The bounty and mercy of God have been abundant during the past thirty-two years and we raise our hearts to almighty in grateful praise. Jawahar Education Society has always focused on research activities and has always tried to create an atmosphere of research. As we all know that our country can only make progress if the scientists and technocrats can utilize their knowledge for exploring newer field of research and development. Principal Dr. V. N. Pawar of A. C. Patil College of Engineering have rightly sensed this need and provided a good platform for the researchers to bring forward their thoughts and help society at large. The second international conference on “Advances in Technology & Management” (ICATM- 2024) once again proves that we are moving towards the right direction. It is because of such hard efforts that Jawahar Education Society has become a knowledge hub. The organizing committee turns every obstacle into opportunity. To meet the aspirations of its valued students A. C. Patil College of Engineering explores all avenues to better its standards. This conference indicates that the vision of Jawahar Education Society is intact. I am extremely happy to be part of the ongoing proceedings of the conference and eager to see academicians and scholars rip the benefit of such gathering. This conference will not only benefit the participants but also will provide a platform so that future research can be done on this subject. I convey my blessings and best wishes to the conference.

(Rohidas C. Patil)

Message

Hon. Shri. Vinay R. Patil
President,
Jawahar Education Society

The small beginnings are so often the prelude of great things. It has been the same with our temple of learning, our college has developed so much and keeps on developing steadily, not only as far as buildings and infrastructure are concerned, but still more regarding the high academic and research standards maintaining the discipline together. The second international conference on “Advances in Technology & Management” (ICATM- 2024) is yet another feather in the cap of Jawahar Education Society. It shows how focused the college is to impart knowledge to one and all and also to create an atmosphere where intellectual discussion abounds. Here I would like to congratulate the Principal Dr. V. N. Pawar and his organizing committee for taking efforts and making the conference possible. It is my pleasure to be associated with this conference and to witness it where so many scholars and academicians as well as students will share thoughts and create a super sphere of knowledge and cogitating discussions. I extend my all-possible support and best wishes to everyone attending this conference. I commend them on this conference as well as on future endeavours.

(Vinay R. Patil)

Message

Hon. Shri. Kunal R. Patil
Secretary,
Jawahar Education Society

We started a journey thirty years ago and Jawahar Education Society is marching ahead following the legacy of its visionary founder Rohidasji Patil. I am very much delighted to know that A. C. Patil College of Engineering, Kharghar is organizing the second international conference on “Advances in Technology & Management” (ICATM- 2024). Our science and technology system must be infused with new vitality if it is to play a decisive and beneficial role in advancing the wellbeing of all sections of our society. It is indeed need of the hour to change oneself according to the changing time. The conference will be a platform for fruitful deliberations on the theme of the seminar and will explore new methods of teaching and learning. I appreciate the sincere efforts taken by Principal Dr. V. N. Pawar and organizing committee to organize the grand event. The organizing committee is working hard for months together for the success of this conference. I sincerely convey my hearty congratulations to all members, teaching as well as non-teaching who have put the name of ACPCE on global map. I extend my felicitations and best wishes to all those who are associated with the conference and congratulate to the ACPCE team to be a part of this astonishing journey.

(Kunal R. Patil)

Dr. V. N. Pawar
Ph.D.
Principal and Conference Chair

I am indeed very happy and proud to associate myself with A. C. Patil College of Engineering. No doubt, the management, the staff, and the students will all be experiencing an exhilarating sense of pride in what college has achieved during these thirty years of its existence. But it is no reason for complacency, in fact it may serve to arouse the desire of making even stronger and more powerful. The second international conference on “Advances in Technology & Management” (ICATM- 2024) brings us back to where we started i.e. the focus on research activities. Benjamin Franklin said, “Investments in knowledge always pay the best interest.” I would like to express my gratitude towards the management of Jawahar Education Society, Hon. Shri. Rohidasji Patil, Hon. Shri.Vinay R. Patil and Hon. Shri. Kunal R. Patil for supporting the college in all the aspects and always having the confidence in us. Being the Principal of the college, I have a strong belief to promote harmony, dedication and a win-win scenario. Harmony can be interpreted as “team-cohesion.” I would like to congratulate Dr. M. M. Deshpande, Prof. (Mrs.) S. P. Bansu and their team for organizing yet another event that highlights the quality of ACPCE as an institution and strive towards excellence. I would also like to take this opportunity to thank the entire staff for the professionalism and commitment in building a solid foundation of this temple of learning. I pray that the college may always radiate the light of Truth, Warmth of love and happiness to everyone that comes in contact with it and hope every one of us after the completion of the conference, will be enriched with new knowledge as well asides and other things to ponder over.

It gives us immense pleasure to welcome you all for this second international conference on “Advances in Technology & Management” (ICATM- 2024). The conference aims at prevailing platform for exchanging and sharing global pool of knowledge with leading professionals, academicians, experts, researchers, and students. It also aims to share the best practices that are required in the current global competitive environment. Rapid development in Science and Technology provides ample opportunity to share the

research work and practical experimentation on emerging challenges. We are sure that deliberation of the conference will go a long way in adding new dimensions to the skill and knowledge of the participants. We wish all the best to all participants. We thank all dignitaries and delegates for their active participation. We hope that you will make ICATM 2024 a grand success.

(Dr. V. N. Pawar)

Dr. M. M. Deshpande

Prof. (Mrs.) S. P. Bansu

Conference Convenor

On behalf of the ICATM 2024 Organizing Committee, we are honoured and delighted to welcome you to the second international conference on “Advances in Technology & Management” (ICATM- 2024) at A. C. Patil College of Engineering, Kharghar, Navi Mumbai. We have chosen a general topic for the conference, which provide platform for all Engineering and Management communities. The Organizing Committee of ICATM-2024 is pleased with the overwhelming response from all over Maharashtra and India. We received around 300 full length research papers for the conference, out of which 192 papers are selected for the technical sessions. The papers are reviewed by the eminent experts in the respective field. Our technical sessions are rich and varied with 2 invited talks and technical papers in 8 parallel oral sessions each day. As a Conference Convenors of ICATM- 2024, we understand that the success of the conference depends ultimately on people who have worked with us in planning and organizing both the technical sessions and supporting arrangements. We thank the Chief Patrons Hon. Shri. Rohidasji Patil, Hon. Shri. Vinay Patil and Hon. Shri. Kunal Patil for their support. We are very much thankful to Principal Dr. V. N. Pawar for his constant advice and motivation on organizing second international Conference in college campus. We are grateful to the Review Committee for their thorough and timely review of the papers.

Recognition should go to all Steering Committee members who have worked extremely hard for the details of important aspects of the conference programs and related activities. We also thank all the delegates for their participation to make this conference a recognized one. We wish all the best and good luck to all delegates for the paper presentation in this conference. We are sure that ICATM-2024 will be a great success

Dr. M. M. Deshpande

Prof. (Mrs.) S. P. Bansu

Schedule Day 1

April 05, 2024

Time	Event	Venue
10:00-11:00 am	Registration & Inauguration	1st Floor, Seminar Hall (125)
11:00-1:00 pm	Key note Address	1st Floor, Seminar Hall (125)
1:00-2:00 pm	Lunch Break	3rd Floor (314)
2:30-5:30 pm	Track 1	1st Floor Classroom (101)
2:30-5:30 pm	Track 2	1st Floor Classroom (102)
2:30-5:30 pm	Track 3	1st Floor Classroom (103)
2:30-5:30 pm	Track 4	1st Floor Classroom (104)
2:30-5:30 pm	Track 5	3rd Floor Classroom (314)
2:30-5:30 pm	Track 6	3rd Floor Classroom (321)
2:30-5:30 pm	Track 7	3rd Floor Classroom (322)

Schedule Day 2

April 06, 2024

Time	Event	Venue
9:30-10:30 am	Invited Talk	1st Floor, Seminar Hall (125)
10:30-1:00 pm	Track 1	1st Floor Classroom (101)
10:30-1:00 pm	Track 2	1st Floor Classroom (102)
10:30-1:00 pm	Track 3	1st Floor Classroom (103)
10:30-1:00 pm	Track 4	1st Floor Classroom (104)
10:30-1:00 pm	Track 5	3rd Floor Classroom (314)
10:30-1:00 pm	Track 6	3rd Floor Classroom (321)
10:30-1:00 pm	Track 7	3rd Floor Classroom (322)
10:30-1:00 pm	Track 8	3rd Floor Classroom (326)
10:30-1:00 pm	Track 9	Online
10:30-1:00 pm	Track 10	Online
1:00-2:00 pm	Lunch Break	Ground Floor (025)
2:30-4:00pm	Valedictory Function	1st Floor, Seminar Hall (125)

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Development of Automobile Scaled Model from CAD (Blender) using FDM 3D Printing

Aditi A Patil, Shravan V Shetty and Ameya Nijasure

Additive manufacturing (AM), also known as 3D printing, has emerged as a disruptive technology with the potential to transform automotive manufacturing. This paper reviews the applications of AM across the automotive product development lifecycle and the use of AM for developing CAD models from concept sketches. Overall, AM brings several benefits such as design flexibility, faster time-to-market, and distributed production. However, there are also limitations around part quality, materials, and costs. Blender is used as a CAD tool to explore various car design techniques for prototype. Ultimaker FDM 3D prints prototypes of 1:10 scale. AM eases rapid prototyping and tooling, enabling faster design iteration and concept validation? This paper provides a total analysis of the role of AM in the industry, including its capabilities, benefits, and challenges. The review will help automotive firms effectively leverage AM to enhance manufacturing agility, productivity, and innovation

A brief review on effects of process parameters in Fused Deposition Modeling: 3D Printing

Vishal P Chaudhari and Shyamkumar Kalpande

Methodology / Approach –The extensive literature review is carried out to find out various process parameters and their effects on output characteristics of the product. The research work also deals with different difficulties occurred during prototype manufacturing. Inferences -Rapid prototyping is one of the most growing prototype manufacturing technologies. The continuous monitoring and evaluation for each attribute for the desired output is practically not possible. It is very difficult to maintain the accuracy of the final prototype with such varying environment. Research Limitations – Number of materials, number of technologies and machines along with various output attributes and characteristics makes process parameter selection very complicated process. So, in this study aiming to establish concrete model using available database of various process parameters and their effect on output characteristics is studied

Carbon Fiber Material Analysis for Bicycle Frame using Finite Element Analysis

Mohammed Abuzar Shaikh

This Research is based on Carbon fiber composite material for Bicycle frame analysis using Finite Element Analysis (FEA). Carbon fiber composites material have been gained major popularity in the production of high performance due to their excellent higher strength and advanced mechanical properties. The aim of this research is to evaluate the structural reliability of bike frame through the relevance of finite element analysis. The analysis involves analytical stress distribution and deformation across critical section of Bike frame. The frame designs for improved strength and stiffness and minimizing weight for material durability over extensive usage.

Selection of RP Process in Product Development using Grey Relational Analysis

Vaibhav Kothawade, Dr. V.P. Wani, Harshal Chavan, Shubham Suryawanshi

For design and production organizations, updating their products on time is a critical decision. It is necessary to create new items and replace old ones with existing ones in today's fiercely competitive market. In this context, the first and most crucial stage is rapid prototyping. Small businesses find it challenging and time-consuming to develop new products. Furthermore, the trial-and-error process adds to the complexity. Industry will profit if such issues have tangible answers. Even for seasoned users, choosing the right rapid prototyping technology can be challenging. Consequently, an approach for rapid prototyping selection is presented in this study. A prototype is created directly from a 3D file in a layered fashion using a relatively new technology called rapid prototyping. To help with the comprehension of methodology, a numerical example is give

Enhancing Efficiency in Attendance Systems by integrating Haar Cascade and LBPH

Arpita Pyne, Utkarsha Dambhare, Sonali Awale and Sandeep Matey

Attendance tracking systems play a major role in various domains, and the integration of facial recognition technology has emerged as a effective approach to enhance its accuracy. This research paper explores the integration of Haar Cascade and Local Binary Pattern Histogram (LBPH) algorithms to improve the efficiency of attendance systems. However, challenges such as achieving high efficiency and minimizing false

positives persist. Haar Cascade is recognized for its robust face detection capabilities, while LBPH excels in feature extraction and recognition. The performance of the integrated approach is assessed in terms of accuracy, speed, and overall system efficiency. The findings contribute to the ongoing study on optimizing attendance systems and shed light on the integration of Haar Cascade and LBPH algorithms in enhancing efficiency in attendance monitoring applications.

AgriMind: Precision Farming using Machine Learning

Darshan P Sonavane, Om Pujari, Pratik Shelar

The agriculture industry constantly struggles to maximize crop yield while preserving sustainability. Crop and fertilizer selection in traditional agricultural systems is typically imprecise, resulting in lower yields and higher expenses. Our project's primary goal is to create an advanced crop and fertilizer recommendation system to solve this. The system seeks to transform farming operations by utilizing large amounts of agricultural data and state-of-the-art agriculture algorithms. It gives customized suggestions based on various criteria, including crop characteristics, soil type, and climate, enabling farmers to make well-informed choices. Mix of Information: This framework's core component is the wide range and integration of agricultural data. This data may come from various sources, such as soil testing, data on the climate, confirmed harvest yields, and master data. This data is processed and analysed using AI algorithms to extract valuable insights

Techfarm Nexus - Smart farming Ecosystem Based on AI&ML

Samyak R Bagesar, Sachin Shinde, Divyesh Potawde, Swayam Prajapati, Archana Pratap Haral

This research paper introduces a complete system called TechFarm Nexus designed to update traditional farming practices by joining modern technologies and data solutions. The system has features like soil testing, crop suggestions, cultivation tips, weather predictions, market views, and a farmer community place. Using devices on the internet of things, AI algorithms, and data analysis, TechFarm Nexus aims to increase crop yields, optimize water use, and reduce damage to the environment. The paper talks about the structure, features, and future possibilities of the system, highlighting how it

could change farming and help farmers. Through a detailed look at past learning and analysing linked work, this paper sees TechFarm Nexus as a ground breaking solution in the field of smart farming.

Optimizing Perishable Cold Supply Chains: Technology & Collaboration Strategies

Aarya Sandip Sawant, Balraj Tanwar, Oorja Manoj Mishra, Diya Modani, Ritika Amaresh, Aditya Kasar

For non-condensing frozen products, ensuring the longevity and performance of temperature-sensitive products while maintaining product quality and safety is a particularly challenging task. As the business environment changes and becomes unpredictable, it is important to develop the right way to use technology and integration to create these tools. This study presents various cleaning strategies for the efficiency, safety and performance of non-permanent refrigerators. Provide network optimization, simulation analysis and green design. Today we introduce the green building concept, which focuses on the use of technology and environmental performance in planning and construction. Greenfield projects can benefit from the integration of renewable energy, energy efficiency and IoT analytics. Second, the study examines network processes to create better connections based on changing needs and performance.

KRUSHI BOT

Zubair, Siddiqui Farhana, Chougle, Mohd Fahad, Ansari, M D Shayan, Asim, Minhajul, Khan Taabish

As we know, farmers play a vital role in food security and economic growth. However, farmers often face financial challenges and risks that can significantly impact their livelihoods. This project focuses on: The critical need for educating farmers about promoting crop diversification to increase their profits. A chatbot that will help them clear their doubts. Since it's understood that some farmers may have limited literacy skills, we can implement a text-to-speech feature using Natural Language Processing (NLP), which is a form of Machine Learning technology.

Realtime Multilingual Sign Language Translation App

Meghana .A. Haral, Avadhoot .S. Raikar, Yatmesh .L.Redkar, Prem .G. Shiravale, Dr. Avinash .R. Sonule

In a globalized world, effective communication is a necessity. As we live in rapidly changing world, communication enables individuals to adapt to new circumstances, innovate, and seize opportunities. It an important aspect which focuses on building relationships facilitates the exchange of ideas, thoughts, feedback, and feelings with others. Thus, hearing people breakdown and smash those barriers encountered by the Deaf and Hard of Hearing communities. The main barrier is communication. Sign language is just like any other language used for communication purpose. Addressing this challenge, the development of a Multilingual Sign Language App is proposed. This app aims to bridge the communication gap by offering a comprehensive platform for learning and using sign languages from around the world and is designed to be a versatile and inclusive tool that caters to the unique linguistic and cultural aspects of different sign languages. The app includes features such as sign language dictionaries with video demonstrations, interactive learning modules, translation tools, customizable learning experiences, and a vibrant user community. Users can access content in various sign languages. The app promotes not only language acquisition but also cultural understanding. By addressing linguistic diversity and cultural nuances, this app stands as a vital resource for both Deaf and hearing communities, fostering a more inclusive and understanding world.

Flex-Fit Gym Tracker and Diet Recommendation System

Aarti Mhatre, Yash Karnale, Jay Mhatre, Dhiraj Amin

Nowadays virtual assistants are playing a very important role in our daily activities and has become an inseparable part of our lives. Almost 27% of people are using AI virtual assistants for performing their day-to-day activities. AI is an emerging field that we aim to explore through this project of AIbased workout assistants. An AI powered gym tracker and diet recommender system that lets you work out in real-time, examines correct postures, keeps track of your reps as well as generates personalized, customizable and optimal food set for the users. Diet Planner Using Open AI , generative AI and Prompt is a digital tool that leverages open APIs and prompt engineering to provide personalized diet recommendations based on a user's Body Mass Index (BMI). System recommends Diet plan for a week categorized in Lunch, Breakfast and Dinner. This application streamlines the process of obtaining BMI data

from users, generating diet plans the application uses the MediaPipe to detect a person's pose, and afterwards analyzes the geometry of the pose from the dataset and real-time video and counts the repetitions of the exercises and OpenCV is used to access the webcam on your machine.

Eyetech-Diabetic Retinopathy Detection

Aiyasha Pinjari and Akanksha Deogharkar

Diabetic Retinopathy, caused by Diabetes Mellitus, damages retinal blood vessels. Deep Learning, especially CNNs, aids in automatic diagnosis using datasets like Kaggle's DRD. Preprocessing involves rescaling or resizing images. The CNN model analyzes fundus eye images, classifying stages like No DR, mild, moderate, severe, or proliferative DR. Early detection enables timely treatment, enhancing patient care.

Enhanced Model for Conversation using Tensor Flow in Machine Learning

Kiruthika S , Vignesh F , Varun Prasath R , Vasanthakumar J and Rakesh N

The "Enhanced Model for Conversation Using TensorFlow in Machine Learning" offers a cutting-edge solution to the challenges of selecting research projects in academia. By harnessing advanced machine learning algorithms, this system delivers personalized project suggestions aligned with a student's research interests and chosen base paper. Utilizing natural language processing, it extracts key concepts from the base paper, enhancing comprehension. Collaborative filtering and cosine similarity algorithms ensure diverse and relevant project options, while a neural network model continuously improves recommendations based on user feedback

Enhancing Profanity Detection in Dravidian Languages: Leveraging Language Models for Optimization and Improvement

Dr. Jyoti Jayesh Chavhan

In the realm of combating online abuse, the sheer volume of social media content makes manual moderation impractical. Algorithmic solutions, notably on platforms like Twitter, have advanced, yet Dravidian languages present distinctive challenges. Our study employed diverse optimizers with the XLM-Roberta model, resulting in a remarkable 19% accuracy improvement across various domains. Specifically, our model demonstrated 74.13% accuracy for Kannada, 96.25% for Malayalam, and 79.72% for Tamil. This success is attributed to the integration of optimal optimizers and activation functions into existing language models, showcasing promising advancements in abuse detection for Dravidian languages

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AI Chat Bot for Your own Data

Dr. Jyoti Jayesh Chavhan

The system tackles challenges in managing vast, unstructured document libraries using cutting-edge NLP. It allows users to upload PDFs, pose questions, and receive accurate answers. The emphasis on context and semantics sets it apart from simple keyword extraction. A user-friendly interface adapts to diverse needs, catering to varying expertise levels and roles. Positioned as a digital age pathfinder, the initiative leverages innovation to create an inclusive knowledge environment. It signifies a transformative step in navigating the abundance of information, making insights readily accessible to all, thereby contributing to a genuinely inclusive digital age.

Stock Prediction on Indian Markets Using Sentiment Analysis And Global Market Trends

Phebe Babu Thomas , Mahati Ganesh Rane, Bhakti S Phalke and Rida Azim Bangi

Our research paper explores the development of a predictive model for stock prices in the Indian market, leveraging sentiment analysis of news articles gathered from Moneycontrol and global market trends. Utilizing Python libraries such as yfinance for stock data retrieval, along with natural language processing techniques for sentiment analysis, we extract valuable insights from news articles to gauge market sentiment. Additionally, we incorporate comparative analysis between the NASDAQ and SGX

indices against the NIFTY score to assess global market trends' impact on the Indian stock market. Through the application of machine learning algorithms, including Long Short-Term Memory (LSTM) networks and BERT-based sentiment analysis, we aim to forecast stock prices with increased accuracy.

An in-Depth Analysis of Machine Learning Models used in Clinical Decision Support from an Empirical Perspective

Priyanka D Deshmukh

Machine learning models created for clinical decision support have proliferated as a result of the ongoing advancement of medical technology. Due to this proliferation, it is necessary to evaluate and extensively examine various models in order to ascertain their advantages and disadvantages. The paper begins with a thorough analysis of the various machine learning models used in clinical decision support. Each model is then carefully examined in light of a number of essential factors. The key performance indicators for contrasting the models are their levels of precision, accuracy, recall, delay, complexity, and scalability. The model's predictions' correctness is determined by its precision and accuracy, while its capacity to capture pertinent data is assessed by recall. This integrated methodology offers a thorough and consistent method of rating clinical decision support models

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Digital Resurrection : Restoring Fragile Documents with OCR

Aniket Rawat, Shivam Kudal, Chirag Fulfagar, Akshay Pawar and Shalaka Deore

Creating an OCR system involves preprocessing, segmentation, feature extraction, and classification. Preprocessing converts scanned images to a readable format. Segmentation breaks text into lines, words, and characters. Google Cloud Vision is used for context capture, handling cuts, merges, and vandalism. The method combines restoration and super-resolution for efficiency and high-quality results. It excels with severely degraded documents like books, ideal for digital libraries

Deep Analysis Of The Banknote Identification and Counterfeit Detection

Vaibhav Patil and Dhiraj Jagtap

The use of fake paper currencies has become cheaper because of the advancement in the printing technologies and graphic designing . The rotation of fake currencies down the frugality of a country. By using this model , there's an accreditation to develop an intelligent fashion for the discovery and bracket of fake currencies. This paper dives in the discovery and history of fake currencies and development of techniques used from ancient to modern era to avoid and detect the counter fitting of fake paper bills .The produced dependable discern genuine bills from fake ones isn't only a technological imperative but also a pivotal safeguard for the fiscal stability of a nation. By using the power of slice- edge technology, data analysis, and pattern recognition, various algorithms can contribute significantly to maintaining the integrity of a country's currency and fiscal requests.

Detection of Brain Tumor from MRI Images using Deep Learning Approach

Riddhish Meher

Efficient and precise brain tumor classification is essential for diagnosis and treatment planning in the field of medical imaging. To tackle this problem, this paper suggests a unique approach that makes use of three cutting-edge Deep Learning (DL) models: VGG16, EfficientNet-B2, and Convolutional Neural Network (CNN). The models were trained for automated tumor identification and classification by utilizing a dataset of brain MRI images. The accuracy of each model is noteworthy, with CNN obtaining 80 per cent, VGG16 earning 87 per cent, and EfficientNet-B2 surpassing both with an exceptional accuracy of 94 per cent, according to the results. The research conducts a thorough comparison analysis, comparing our suggested technique with baseline models that have been published in earlier studies. The results demonstrate the significance of model selection and make a valuable contribution to the area of medical imaging, with EfficientNet-B2 demonstrating exceptional performance.

Extractive Text Summarization Using Transformer and Reinforcement Learning Model

Rajshree Tarapure, Sharayu Mulay, Ashlesha Vitthal Kathe, Prapti R Jadhav and Shalaka Deore

In recent years, the size of information on the Internet has increased exponentially. Therefore, a solution is needed to transform large amounts of raw data into useful information that the human brain can understand. This research report explores methods for extracting content from text and their relevance. In particular, we delve into the Transformer model, the implementation of BERT, and the integration of reinforcement learning. This report describes the main processes operating in content extraction and their important role in improving the quality and performance of text collection. Additionally, a comprehensive analysis is conducted on a single document, illustrating how these advanced techniques can be applied to extract meaningful insights from individual textual sources

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Forecasting Trends in the Stock Market by using Deep Learning Approaches

Lukesh R Kadu amd Manoj M Deshpande

anticipating stock advertises patterns precisely remains the noteworthy jump in the domain of funds. Profound learning, a subset of machine learning, has developed as an effective instrument for capturing perplexing connections inside information. What sets profound learning separated is its capability to handle enormous sums of data, perceive complex highlights, and adjust to advancing designs, all whereas uncovering concealed bits of knowledge. At its pith, profound learning utilizes fake neural systems that mirror the learning and design acknowledgment capabilities of the human brain, making them exceedingly compelling for analyzing budgetary information. By leveraging profound neural systems, the proposed strategy coordinating a different cluster of showcase information, including authentic stock costs, exchanging volumes, and estimations extricated from news sources.

Comprehensive Review of “DiagnoTech”: Your Healthcare Companion

Mehreen I Wagle, Mahesh Jadhav, Mitali Dere, Mehvish Fansopkar and Vaishnavi Shegokar

“A comprehensive review of DiagnoTech: Your healthcare companion” brings forth a transformative solution in the advancements of healthcare technology which aims to be the all in one healthcare companion. It explores the four key elements of DiagnoTech: Lab Tests, BMI Calculation, Yoga and Diet Recommendations and Disease Prediction. It brings to light each of these feature’s functionalities, integration and their collective impact on the healthcare industry. The lab test feature enables users to schedule appointment for medical tests at their preferred locations with the reports seamlessly provided in the app as well as delivered via email. The BMI Calculator allows the users to monitor their health through body mass index calculations offering vital insights into overall wellness. DiagnoTech app further provides with personalized yoga and diet recommendations that are catered according to the needs. It provides a glimpse in future for human well-being in healthcare

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Speech Emotion Recognition

Akshay Gurunath Parab, Akshay Shetye, Shruti Chavan, Sumitra Kulkarni and Kaushik Patil

"Speech Emotion Recognition," starts off by summarizing the significance of speech emotion recognition and highlighting all of the different ways. It may be used in fields like healthcare, human-computer interaction, and customer service. It offers a methodical classification of various methodologies and comprises feature extraction techniques, classification algorithms, and datasets utilized in SER. A study of the field's transition from traditional handmade components to deep learning-based techniques is included, along with an explanation of their implications. This study offers a comprehensive understanding of the state of SER systems today, covering their benefits, limitations, and future implications. For academics, professionals, and decision-makers attempting to comprehend the workings of voice emotion recognition technology, it is a helpful resource

Revolutionizing Agricultural Sustainability: A Comprehensive "Framework for Plant Disease Detection and Classification using Deep Learning

Ashutosh S Maurya, Vaqar V Ansari and Ayush Maurya

The precise and prompt identification of plant diseases is pivotal in averting agricultural losses and ensuring optimal product yields. Application of deep learning methods, particularly in the realm of image processing, to revolutionize agriculture is proposed. Leveraging deep learning technologies, specifically Convolutional Neural Network models used to enhance plant disease detection and diagnosis using images of both healthy and afflicted plants. Training these models involves utilizing a comprehensive open database comprising 60,000 image examples encompassing 14 plant types classified into 38 distinct plant disease combinations, inclusive of healthy specimens. A key innovation in our study involves deep feature extraction from various fully connected layers of pre-trained deep learning architectures.

Self-Driving Robot Using Neural Networks

Nikita S Bagwe, Parth Amble, Aarya Dhapte, Shobha Kande and Alamuri Vasavi

In contemporary times, the exploration of autonomous vehicle development has captivated the attention of numerous researchers. Autonomous vehicles possess the capability to perceive their surrounding environment and navigate without human intervention. Our project introduces a self-driving robot, essentially a gauged-down interpretation of an autonomous vehicle, created utilizing neural network technology. The primary objective is to construct a self-driving car prototype robot and train it on a manually-designed path using neural networks, enabling it to operate autonomously without the need for an operator or driver on that particular track. The robot will stream live video to a laptop, which will analyze the data, make decisions, and relay instructions to a Raspberry Pi. The neural network algorithms will then enable the raspberry pi to control the robot using a driver module

Telecom Churn Forecasting: A Machine Learning Approach for Proactive Customer Retention

Labhesh S Mahajan, Vineet Panicker, Tejas Pawar and Rohan Rathod

In the telecom industry, In the telecom industry, customer retention is challenging due to increased competition. Firms address issues like poor treatment, long wait times, costs, new competitors, and service comparability to tackle customer loss. Dissatisfaction stems from various factors, requiring proactive efforts to prevent attrition.A key strategy involves creating churn prediction models to identify high-risk customers and improve loyalty. Analyzing turnover factors and their impact on customer loyalty is crucial. Predictive analytics with geospatial visualizations and Quick Analytics briefs aid informed decisions on retention.Visual statistics simplify complex data, aiding a quicker understanding of the business landscape. Decision-makers can swiftly identify patterns and respond to challenges. Recommendations from churn prediction models and analytics tools help prevent attrition, offering actionable steps for boosting customer satisfaction and loyalty.

Face Recognition Based Attendance System

Sahil S Kadam, Harikrishna Kategar, Shruti Rane and Shital Patil

The conventional way of recording attendance in many educational institutions or other organizations includes using paper and pens. It is a time-consuming process that can lead to errors such as incorrect data entry, misplaced or lost attendance, buddy punching, and limited security. This paper presents the use of technology to develop a face recognition-based attendance system that aims at upgrading and automating the process of attendance while addressing the problems with the traditional way. This system utilizes a webcam to capture live video streams, which are then processed using the open CV library to detect and extract faces from the video frame. A trained machine learning model, the K-Nearest Neighbors (KNN) classifier, is used to recognize individuals based on their facial features. Upon successful recognition, the system automatically adds the attendance of the individual along with the time stamp.

Detection of Motorcyclists without Helmet along with Number Plate

Srushti Jadhav, Shweta Bansode, Mansi Thakare, Vinay Bansode, Poonam Potraje and Vijaykumar Pawar

Bicycle disasters have been rapidly creating amid that time in different countries. In India in abundance of 37 million people utilize bicycles. Hence, it is critical to cultivate a system for modified area of a defensive cap wearing for road prosperity. Hence, a custom thing area demonstrates is made utilizing a Machine learning based calculation which can recognize Cruiser riders. On the area of a Helmetless rider, the Permit Plate is isolated and the Permit Plate number is seen utilizing an Optical Character Recognizer. This Application can be executed persistently including Webcam or a CCTV as information.

Code Check: AI

Vishnudas Gavakar, Tushar Gore, Kawshal Shirdhankar, Raj Malusar and Rahulkumar Tivarekar

The “Code Check AI" is a software result designed to enhance the effectiveness and trust ability of code development and conservation. In the dynamic realm of software engineering, the frequency of code syntax errors remains a significant challenge. These errors can lead to program malfunctions, security vulnerabilities, and time- consuming debugging processes. This design introduces a new approach to identify, detect, and amend code syntax errors with perfection. By using advanced parsing algorithms, verbal analysis, and contextual understanding, the system detects errors in multiple programming languages.

Integrated Qualitative Response Assessment System

Nisarga Vijay Jamdhare; Amit Kadlag; Bhausaheb Kakad and Ketan Patil

Exams for universities and year boards are always administered offline. Many students choose subjective examinations since evaluating many papers personally takes much work. Occasionally, an evaluator's mood might affect the quality of their assessment. The evaluation process takes a lot of time and effort. Multiple-choice and objective questions are common in entrance and competitive tests. These tests are quickly reviewed since they are assessed on the same equipment that administers them. It is errorless since it also saves human contact and various resources. Subjective (Descriptive) questions are not supported by any of the systems available for evaluation

objective (MCQ) questions. If the process of evaluating descriptive responses is automated to analyse students' test answer sheets effectively, it would be highly beneficial for educational institutions.

A Comparative Analysis of Machine Learning Techniques for Fruit Defect Detection Systems

Ashvini A. Gaikwad,Rushikesh R Nikam,Suraj Yadav,Tejaswini Todkar, Shivam Thorat and Jarjish Siddibapa

With evolving technologies with the help of Machine Learning, it also helped in making advancements in the livestock industry. This in turn helps to reduce waste, increase yield, cost savings, and improve competitiveness in the marketplace. The fruit defect detection model also supports precision agriculture, provides the significant valuable data for decision-making and enhances the overall efficiency by automating the inspection process. Machine Learning models like MobileNetV2, custom designed CNN model, ResNet50 and VGG16 models are implemented to improve the accuracy of defect detection in fruits like bananas, apples and oranges. MobileNetV2, demonstrates competitive accuracy, while the custom CNN model addresses the intricacies of fruit defect detection. ResNet50 and VGG16, with their deep architectures, showcase robust performance. This study proposes the comparative evaluation of the above mentioned ML models and its accuracy

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Content Based Image Retrieval System

Kashish awal, Ashlesha Ajit Shinde, Tanvi Patil and Prapti Shivram Kinare

The rapid growth of large image databases has led to an increased interest in automated image retrieval. Content-Based Image Retrieval (CBIR) is a technique that uses computer vision techniques to index digital images in big datasets. CBIR indexes images based on features extracted from visual content using CNN, analyzing the content rather than metadata. The similarity technique ranks images for retrieval based on similarity between query and dataset features. CBIR is used in various fields, including historical research, medical image analysis, and weather forecasting.

Generative Artificial Intelligence with Emphasis on Large Language Models: Review and Current Trends

Joshua Miichael

Large Language Models, LLMs from here on have extensive applications in Natural Language Processing such as text generation, summarization, translation, sentiment detection and question answering. Tech Giants have entered a race to develop and improve their Large Language models. This paper reviews both proprietary and open-source LLMs in the literature and explains the cost consideration, current trends and future scope of LLMs.

Dog Breed Prediction

Shreyash Mahesh Patil, Pranav Tiwari, Vedant Dinde, Sachin Keluskar and Shaila Pawar

This study uses Convolutional Neural Networks (CNNs) to identify dog breeds from labeled dog images. The model is trained on large amounts of data and evaluated on a test set. Data preprocessing, data expansion, and hyper parameter optimization are used to improve model accuracy. The findings demonstrate the precision of CNN-oriented tools in identifying dog breeds for pet identification, animal shelters, and veterinary care. This research demonstrates how deep learning can solve real-world problems in image classification and breed recognition, providing opportunities for advanced systems for identifying and tracking animals, benefiting pet owners and animal welfare organizations

Integrating Health and Job Satisfaction in Employee Attrition Prediction : A Novel Ensemble Model Approach

Niharika Singh, Chhavi Chaturvedi, Tanya Rathi, Nice Rathi and Aditya Kasar

Employee departure as a method of addressing organizational issues is the main focus of this investigation. The goal is to examine the relationship between employee health, job satisfaction and attrition which is our main objective. We are using Random Forest to capture the interactions, by using this model we can can clear understanding between the employee health, job happiness and attrition towards the organization.. The processes of data preprocessing, statistical analysis, were conducted using SPSS, enhancing the result validity and reliability. Insight into employee departure is provided, contributing to the discussion on workforce dynamics and retention strategies, thereby addressing gaps in the existing knowledge base.

Realtime noise reduction and filtering using machine learning technique for speech

Aditya Parmeswar Basanti, Shital Patil, Paras Saini and Sarthak Salunke

Proposing a noise reduction solution for calls: Our innovative call system integrates VoIP technology with a built-in Convolutional Neural Net (CNN) for noise suppression. Using a single microphone, the CNN analyzes audio input features (LPS and MFSC) as images, treating noise reduction as a regression problem. This enhances call quality, ensuring a clear and uninterrupted communication experience for important calls, interviews, or business discussions. Unlike traditional hardware-based solutions, our approach leverages advanced neural networks to effectively denoise speech signals in real-time, eliminating background interference.

Counter Terrorism Prediction and Risk Evaluation (C-TRIP)

Yash Ashok Shirsath , Vedant Ramesh Bhosale, Shilpali P Bansu and Manoj M. Deshpande

In the intricate landscape of 21st-century security challenges, terrorism stands out as a daunting menace, leaving indelible scars on societies, economies, and governments worldwide. The "Counter Terrorism Prediction and Risk Evaluation (C-TRIP)" project emerges as a beacon of hope in this tumultuous terrain. Against a backdrop of escalating terrorist activities, conventional strategies falter, emphasizing the imperative for data-driven interventions. C-TRIP conducts a meticulous review of existing literature, identifying critical research gaps and pioneering a novel framework for robust risk

assessment. Leveraging cutting-edge machine learning and data analysis techniques, C-TRIP seeks to revolutionize counter-terrorism decision-making, providing unprecedented insights into the probability and severity of potential terrorist incidents. C-TRIP embodies a transformative approach to counter-terrorism, integrating advanced technology and strategic foresight to bolster global security.

Comparative Study of Facial Spoofing Detection Using Cnn Architecture

Karan Talwalkar, Kshitij Navale and Aditya Ashok

Facial recognition is not safe from the danger of security breach by mean of facial spoofing. This challenge was addressed by study of several deep learning models. This paper is proposed an innovative idea to detect facial spoofing using deep learning architecture to differentiate live faces form various type of spoofed images and videos using different CNN models. In addition, the study seeks to strengthen security measured in facial recognition system demonstrating that by using deep learning models we can effectively tackle spoofing attack and suggest an efficient and practical framework that can be used in real life scenarios

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Student Placement Prediction

Srushti Sandeep Mhatre, Sakshi Jadhav and Surekha Khot

When a student chooses a college, there are various factors that come into the picture. Students usually look for results and, in this case, they are placed. Every organization strives to have a strong placement team. The objective of this research paper is to enhance the overall performance of the system by introducing a student placement prediction system. The goal is to increase the accuracy of the entire system. Various parameters are considered to predict whether a student is placed or not. This paper studies various machine learning algorithms such as logistic regression, random forest, KNN, SVM. This machine learning algorithm will be used to predict results individually on a common database. The final result will be compared with each other to study which algorithm has the highest accuracy and works best for the system.

Podcast Summarization System

Vighnesh Kailas Tathare, Smita R. Chunamari, Yash Yeram, Amit Yadav and Vaibhav Gupta

Podcasts are extensively employed by content creators to express their thoughts, concepts, and occurrences in the form of audio. Podcasts are widely utilized in the streaming industry, such as Spotify, and are demonstrating continuous expansion over the years. The entire podcasts are considerably more lengthy and clamorous, and to diminish the duration of podcasts, there are numerous finely-tuned innovative methods to condense it, which have been evaluated on professional datasets like Daily Mail, CNN, and many more. In this manuscript, we will scrutinize such existing cutting-edge approaches to condense the podcast, which established the groundwork for our concept to develop a summarization platform based on that

AI Image Generation (New Age Stable Diffusion Model)

Rohan Mahendra Ravidhone, Smita R. Chunamari, Nikhil Mohite and Aniruddha K Mokashi

In recent years, the field of artificial intelligence has witnessed remarkable progress in the domain of image generation. This research endeavors to explore the application of stable diffusion, a novel technique rooted in probability theory, to the task of AI-driven image generation. Motivated by the limitations and challenges inherent in existing methods such as Generative Adversarial Networks and VAE, this study aims to unravel the potential of stable diffusion in producing high-quality diverse and visually appealing images.The methodology involves the design and implementation of a stable diffusion model, integrating CNN and leveraging the principles of probabilistic modeling. In conclusion, this research contributes to the evolving landscape of AI image generation by introducing stable diffusion as a viable and innovative alternative. The findings open avenues for further exploration, paving the way for advancements in generative AI techniques and their practical applications.

Hate Speech Detection Using sentiment Analysis

Akhil P P, Om Dusane, Shriya Thasale, Gopika Dinesh and Ninad V Gaikwad

Hate speech detection involves identifying communication that promotes violence or hatred towards individuals or groups based on protected characteristics like ethnicity,

gender, sexual orientation, religion, and age. This project seeks to develop a web-based application that converts audio or video files into text using NLP, then employs sentiment analysis to classify the text into predefined hate speech categories. By categorizing hate speech, the application aims to monitor media content on sensitive topics and identify hateful conduct, ultimately contributing to a safer online environment for all users

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AI Text Summarizer (Bilstm and Attention Mechanism)

Ashutosh Durgule, Yash Gaikwad and Olin Dsouza

Text summarization is a fundamental task in natural language processing (NLP) that aims to condense lengthy documents into shorter versions while preserving essential information. In this paper, we propose a novel approach to text summarization using Long Short-Term Memory (LSTM) networks combined with an attention mechanism in the context of artificial intelligence (AI).Our method leverages the sequential nature of text data by employing LSTM, a type of recurrent neural network (RNN),to capture long-range dependencies and contextual information effectively.

Lie Detection Based on Facial Expression, Eye Movement and Body Posture

Mayur Sharma, Rohan Kujur, Khushi Tulsian, Athrva Karve and Tejaswani Chavan

Over the course of technological advancement, numerous machines and software have been developed to detect lies. Presently, lie detection methodologies, such as polygraph testing, rely on physiological signals and thermal imaging to detect subtle changes indicative of deception. Despite their widespread use, these approaches primarily gauge physiological discomfort rather than directly detecting lies, and they are impeded by significant expense. In this study, we propose leveraging deep learning models to enhance lie detection accuracy by analyzing facial expressions, iris movement, and body posture. The integration of these techniques presents a promising avenue for augmenting lie detection capabilities, potentially surpassing the constraints inherent in traditional methodologies.

Yoga Pose Detection Using Cnn

Aaditya Dhotre, Sahil Nachare, Anurag Dhamne, Suyash Ghatkari and Manasi Deore

Yoga, a time-honored practice, offers myriad mental and physical benefits, gaining traction in modern society. Integrating deep learning and computer vision, this study proposes a novel CNN-based approach for yoga pose detection. Leveraging annotated datasets, we utilize pre-trained CNNs to discern subtle pose variations, fine-tuning the network for precise recognition. Augmentation techniques expand the training data, combating overfitting and enhancing model performance. Evaluation on diverse datasets showcases accurate pose categorization, offering practitioners valuable insights for form refinement and practice comprehension. Integration into virtual training, coaching programs, and fitness apps promises real-time feedback and personalized guidance, enriching the yoga experience. This work underscores the potential of CNNs and deep learning in advancing wellness applications, advocating the fusion of technology with tradition for tailored exercise solutions.

CrimeLens: Forensic Face Recognition System

Suraj Shashikant Ghadge, Aditya Gurav, Mayur Kharat, Mohammed Kaif Desai and and Manasi Deore

In today's society, the total number of crimes is increasing every day and to Cope this means that law enforcement must find a way to speed up the entire process and help the cause of justice. One such method is using facial recognition technology to identify criminals. A traditional approach here using a hand-drawn sketch of the face taken by the coroner to identify the criminal. Modernization use hand-drawn sketches to identify criminals who later comply with the law performance database. This approach is time-consuming due to the small number of judicial officers compared to criminal engagement, which is subject to various limitations and the latest technology and increasing crime rates. Our project provides an independent platform for law enforcement that allows the user to create an identical sketch of the suspect's face using the drag-and-drop feature assistance in litigation, thereby reducing lag time and speeding up the process.

AI Chat Pallet

Harsh Mishra, Vaishnavi Talekar, Rapol and Manoj M. Deshpande

The "AI Chat Pallet" project represents a cutting-edge integration of two advanced AI models, namely ChatGPT-3.5 and DALL·E, to create a seamless fusion of conversational and visual AI capabilities. ChatGPT-3.5, a state-of-the-art language model, forms the backbone of our conversational interface, enabling natural and context-aware interactions. Meanwhile, DALL·E, a groundbreaking image generation model, contributes visual intelligence to enrich the user experience.

CogniWrench - AIaaS Application for AI Tools

Karthik Veduvar, Roshni S Singh, Vridhi Srivastava and Devika Rani Roy

In the modern business landscape, "Artificial Intelligence as a Service" (AIaaS) is widely embraced, offering readily available AI tools for cost-effective implementation. However, a gap exists in providing diverse AI services like video, image, and code generation on a single platform, hindering user efficiency and broader AI adoption. Our paper introduces CogniWrench, an innovative AIaaS platform seamlessly integrating these services. Leveraging OpenAI and Replicate AI, CogniWrench offers over five AI-powered services, fostering accessibility for both experts and beginners. Emphasizing green IT principles, CogniWrench enhances energy efficiency with a dark theme and a cloud-based Aiven database for data management. Strategically integrating OpenAI and Replicate AI models, CogniWrench ensures long-term sustainability through effective monetization strategies. Bridging gaps,CogniWrench enhances the accessibility of AI tools, showcasing transformative power in tech innovation.

Development of Intelligent Technique for Road Incident Detection

Vishal Vidyut Ghosh , Nishita Gole, Sakshi Gawade and Nameet Ahire

This paper presents a novel approach to road incident detection, utilizing advanced technologies like machine learning, computer vision, and data analytics. The technique

uses data from traffic cameras, sensors, and other sources to identify accidents, congestion, debris, and weather conditions. Historical traffic patterns and incident data are also considered, enhancing the accuracy of detection and providing predictive insights for traffic management. This method not only facilitates early detection but also enables swift response by notifying authorities and offering actionable information. The research findings highlight the feasibility and effectiveness of this approach in improving road safety and efficiency.

Unmasking Hallucinations in Large Language Models using analysis of the LLAMA 2 Model and RAG Intervention

Atharva Mehul Patil, Arohi Paigavan , Amarti Mangesh Dhamele, Abbas Merchant and Aditya Kasar

Large Language Models (LLMs) are prone to hallucinations, i.e., generating content that is missing from the source or cannot be verified by factual knowledge. To understand this phenomenon and prevent any LLM from hallucinating in the respective application it is developed for, the authors in this paper proposed “TradeBot”, a chatbot that answers all things financial trading and implemented Retrieval Augmented Generation (RAG) on it. RAG is a cutting-edge approach employed to alleviate hallucinations by instructing the model to refer to an external data source apart from the data it is trained on. This paper proposes a methodology that involves creating a financial trading chatbot using the Llama 2 Model, implementing RAG, and indexing the model with the NCFM (NSE’s Certification in Financial Markets) book as an external data source. The study records responses without RAG and with RAG to highlight the stark differences between a hallucinated response and a non-hallucinated response

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Stock Price Prediction using Machine Learning

Tejas sangle , Kartik Kharaje, Rushikesh lolge and Smita R. Chunamari

Forecasting stock prices is crucial in anticipating future trends by leveraging historical data through machine learning or deep learning methodologies. Developing a robust model entails selecting algorithms that optimize accuracy, response time, and segmentation. This study focuses on employing LSTM and Regression models to predict stock values, utilizing key factors such as opening and closing stock prices, as well as high and low values, alongside trading volume.

AURA (AI Desktop Assistant)

Bhavesh N Wadhia, Binash Shaikh, Pranjal Shinde, Sarthak Mandlik and Rakesh Suryawanshi

Aura, the desktop assistant, is your intelligent companion in the digital realm. Designed to enhance your productivity and streamline your interactions with your computer, Aura responds to your voice commands, transforming your daily tasks into seamless experiences. With Aura, you can effortlessly manage your schedule, set reminders, and even send messages with a simple voice prompt. This powerful assistant offers a wide range of functionalities, from providing real-time weather updates to answering questions, making it an invaluable addition to your desktop. Whether you seek organization, information, or entertainment, Aura is there to cater to your needs, all while making your desktop experience smarter and more user-friendly. It's your personal touch of magic in the digital world, ready to simplify your day and help you make the most of your technology.

Voicy- An assistant using python

Bhavesh Panchal, Pranav Bhovad , Deepak Kumavat, Adarsh Pandey and Himanshu Dubey

A virtual assistant, powered by AI and machine learning, aids users in daily tasks through natural language processing. Tech giants like Google, Apple, and Amazon have developed VAs like Cortana, Siri, and Alexa. Creating a voice-based assistant using Python involves solving complex problems for seamless user experience. Our goal is to create an assistant that responds to voice commands. Python's libraries enable voice recognition considering accents, noise, and languages. Tasks range from simple reminders to controlling smart home devices. This abstract highlights the potential of virtual assistants to simplify users' lives.

Deep Learning in Brain Tumor Detection: A Multi-Model Ensemble Approach

Kajal Sharma, Akshat Ovalekar, Chirag Kocharekar,Aditya Kumar and Shail Kulavoor

This research presents a new strategy to improving brain tumor identification in medical imaging by combining Convolutional Neural Network (CNN) and You Only Look Once

(YOLO v5) frameworks. By employing CNN's deep learning capabilities to carefully examine MRI data, the two-pronged approach can more accurately detect and categorize brain tumors on its own. Comprehensive testing confirms the method's effectiveness and establishes it as a dependable resource for timely and accurate diagnosis in a variety of medical imaging circumstances. In an effort to achieve precise accuracy in locating and identifying cancers inside MRI scans, the study also investigates the integration of YOLOv5, a state-of-the-art object identification framework, in brain tumor diagnosis. The YOLOv5-based architecture, trained on an extensive dataset, shows promising results in terms of detection accuracy, speed, and flexibility under different imaging situations. This new method has a great deal of promise to increase the accuracy and consistency of brain tumor diagnosis, which will benefit patients and MRI therapy planning. Furthermore, the study presents a paradigm for brain tumor identification based on machine learning and Support Vector Machines (SVM). Relevant MRI scan properties like texture, shape, and intensity patterns are extracted by the ML-SVM model, providing a strong basis for classifier training. The SVM efficiently classifies fresh, unseen data based on learned patterns by optimizing its decision boundary through supervised learning on a labeled dataset. This method has the potential to improve the accuracy and efficacy of diagnoses, enabling early interventions and treatment regimens for improved patient outcomes

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Crowd Monitoring and Alert System

Sanket Madan Kshirsagar , Atharva Patil, Rushikesh Matele and Babasaheb Waghmode

This study presents an advanced Suspicious Activity and Crowd Monitoring Alert System designed to enhance security measures in various public environments. By employing sophisticated algorithms, the system can differentiate between normal crowd behaviour and suspicious activities, enabling prompt detection and response to potential threats. The integration of behavioural analytics and anomaly detection techniques further enhances the system’s accuracy in identifying abnormal patterns. The system generates instant alerts when suspicious activities are detected, facilitating swift actions by security personnel and law enforcement agencies. Additionally, the system ensures compliance with data privacy regulations and emphasizes responsible data

handling practices. The results of this study contribute to the ongoing efforts to create safer public spaces, thereby enhancing overall public safety and security.

Real-time AI-based Audio Transcription

Ruchita Khadye , Rahulkumar Tivarekar, Saloni Chavande and Pranita Talkatkar

This research paper proposes the development of a Speech Recognition and Real-Time Transcription Web App utilizing the Whisper ASR system and Gradio interactive interfaces. The project aims to address the increasing demand for accurate and efficient speech-to-text conversion in various applications, such as virtual assistants, transcription services, and accessibility tools. The Whisper ASR system, known for its robust performance in speech recognition tasks, will serve as the core engine for converting spoken language into text. Gradio, a user-friendly library for creating customizable UI components, will be integrated to facilitate a seamless and intuitive user experience. The proposed web app will provide real-time transcription capabilities, allowing users to interact with the system through a web interface, fostering accessibility and usability.

INKYTALK - Handwritten to Text & Speech Conversion

Anurag Rajaram Ganore ,Vijaykumar Rajage , Akshara Khaire , Payal Chauhan and Archana Haral

Handwritten Text Recognition (HTR) is a crucial component in document processing systems, enabling the automated transcription of handwritten text into machine-readable formats. This project presents a comprehensive HTR system implemented using TensorFlow, trained on the IAM off-line HTR dataset. The system accepts images of single words or text lines as input and outputs the recognized text. Leveraging Convolutional Neural Network (CNN) layers, Recurrent Neural Network (RNN) layers, and a Connectionist Temporal Classification (CTC) layer, the model achieves promising results, with a 75% accuracy rate on the validation set and a character error rate of approximately 10%.

Deep LSTM with Word Embedding for Sarcasm Detection in Tweets

Ambreen Shaikh, Manoj M Deshpande and Vijaykumar Pawar

In this work, we aim to address the challenge of detecting sarcasm in tweets. Our approach involves several key steps starting with creating a dataset that includes both sarcastic and non-sarcastic instances of text, labeling the data with binary labels, identifying patterns that indicate sarcasm, and building a classification model. Our model consists of different layers, including an Embedding layer, LSTM layer, and Dense layer with sigmoid activation. We train the model using binary cross entropy loss and the Adam optimizer. In addition, we propose a hybrid approach that combines structural and lexical features of text for sarcasm detection. To represent words in a continuous vector space, we utilize Word Embedding with GloVe. Finally, we assess the performance of our model using accuracy and F1 scores.

Text to Video

Swapnil S Kharat, Sushant Yadav, Sandhya A Awate, Sahil Gupta and Manisha Jaiswar

This project introduces a new method for text-to-video generation that does not require any training or fine-tuning. The key idea is to leverage the power of existing pre-trained text-to-image models like Stable Diffusion and make minimal modifications to extend them to the video domain.Experiments show the method generates high-quality, temporally coherent videos from text prompts, without any optimization. The authors also demonstrate applications like conditional video generation, where the model is guided by additional input like poses or edges. Another application is instruction-guided video editing, termed Video Instruct-Pix2Pix, where textual instructions are used to edit input videos.The proposed system performs comparably or sometimes better than recent methods that require large-scale training, despite not using any video data. Ablations validate the importance of the cross-frame attention and motion dynamics components.

Plant Disease Detection And Classification Using Machine Learning

Sandhya A Awate, sahil Suryakant Belnekar, Priyanka Borude and Mansi Chawan

Machine learning, a subset of artificial intelligence, has garnered significant attention from both academic and industrial communities in recent years due to its inherent capabilities in automatic learning and feature extraction. Its widespread adoption spans across various domains including image and video processing, voice recognition, and natural language processing. Additionally, it has emerged as a prominent area of research in agricultural plant protection, particularly in the identification of plant diseases and assessment of pest prevalence. Leveraging deep learning for plant disease recognition offers distinct advantages over traditional methods, circumventing biases inherent in manual feature selection and enhancing objectivity in disease feature extraction, thereby accelerating research endeavors and facilitating technology transfer. This paper provides a comprehensive overview of recent advancements in ML technology pertaining to the identification of crop leaf diseases.

Automated Manufacturing Defects Detection using Machine Learning and Image Processing

Abhishek R Bansode, Nayan Shinde, Omkar Kandale and Avinash R. Sonule

Manufacturing defect detection is a critical aspect of quality control in industrial production. The integration of image processing and machine learning has emerged as a powerful solution to address this challenge. This research explores the development of a robust system for manufacturing defect detection, leveraging the capabilities of image processing and machine learning algorithms. Through this innovative approach, visual data captured during the production process are analyzed to identify and classify defects, ranging from minor imperfections to critical flaws. The system utilizes image preprocessing techniques to enhance image quality and extract relevant features. Machine learning models, such as convolutional neural networks (CNNs) and support vector machines (SVMs), are then trained on labelled data to classify defects with high accuracy.

Yoga Posture Detection & Correction

Simran Jadhav, Mihir Chauhan, Rohan J Jain and Devesh Karde

Our project introduces a pioneering method for enhancing yoga practice through real-time pose correction, utilizing cutting-edge computer vision technology. While various

avenues exist for learning yoga, including classes at yoga centers and self-learning through books and videos, many individuals struggle to identify and rectify inaccuracies in their poses. Our solution addresses this challenge by allowing users to select a pose they wish to practice and either use a webcam for analysis. Our technology uses computer vision algorithms to analyze the angles of different body joints and compares the user's pose with an expert's reference pose. Based on this comparison, users can receive personalized feedback to improve their posture Bridging traditional yoga instruction with modern technology, our project aims to deepen users' yoga practice, fostering greater awareness and alignment while enhancing effectiveness and safety

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AvianEchoes: Convolutional Neural Network For Bird Vocalization Detection

Ved Chaudhari, Siddharth Chhajed Piyush, Suresh Jain, Adarsh mr Kamble and Dnyaneshwar Kapse

Bird species identification by sound is a challenging task in ornithology. This approach utilizes Convolutional Neural Networks (CNNs) to analyze spectrograms, visual representations of sound, for bird recognition. First, sound recordings are converted into spectrograms, allowing the CNN to examine both temporal and frequency features simultaneously. These spectrograms capture crucial information about the sound, enabling more accurate bird species classification. Next, CNN analyzes the spectrograms to identify the bird species in the recording. CNNs excel at recognizing complex patterns within spectrograms, making them ideal for pinpointing specific bird calls. Our system allows users to upload audio recordings for analysis. The model then predicts the bird species and displays the corresponding spectrogram, demonstrating the practical application of this automated bird identification system.

Smart Manufacturing Using Convolutional LSTM

Diksha Arun Bombe and Manoj M Deshpande

Smart manufacturing integrates big data and the industrial Internet of things to improve manufacturing processes. Encoder compresses the input to a code, which is

subsequently decoded by the decoder. For this reason, the autoencoder can be used as a dimensionality reduction strategy in time-series forecasting as it can compress the input to a mapped hidden layer. The stacked auto encoder is a hierarchically layered stack of autoencoders and, just like autoencoders, they learn in an unsupervised manner. In this model training process involves greedy layer-wise training to minimize the error between the input and output vectors. The subsequent layer of the autoencoder is the hidden layer of the previous one, with each of the layers trained by gradient descent algorithm using an optimization function. Data-driven techniques is used in this project to predictive analytics in this model LSTM auto encoder architecture used for machine speed prediction to get smart manufacturing process easy.

Missing Person Detection using AI

Tejas Samant ,Siddharth Rawlani,Vaibhav Kambar and Shubham Pal

This study presents a way of developing Missing person detection system that aims to use the machine learning for its sake in fulfilling the best of purposes. In this case,the portal integrates and existing administration standards among these schools through an advanced system which are driven by their powerful machine learning algorithms, thus, newer modern, and more efficient missing person detection. A refined filtering algorithm helps to determine actual data which is then displayed to the admin. matchmaking mechanism that takes sorting into account on the basis of specific requirements for certain candidates. System's ability to identify deficiencies, skill sets and efficiencies in the piping integrity assessment process. Users can carry out operations with minimum strain, therefore a flawless result is achieved. The research explores the system’s configuration, with highlights being the system’s ability to bring about a change in the mind-set of the people and their behaviors.

AI Fitness Trainer: Personalized Coaching for Optimal Health and Well-being

Darshan S Chindarkar, Rushikesh Shinde, Archana Shinde, Shreyas Sawant and Shilpali Bansu

The incorporation of artificial intelligence (AI) into health coaching marks a significant leap forward in health education and personal well-being. This piece delves into the

concept of an AI health coach, a digital platform tailored to provide effective support to individuals striving to enhance their physical fitness and overall health. AI fitness trainers harness advanced machine learning algorithms to analyze diverse datasets, comprising user input, biometric data, exercise history, dietary patterns, and health objectives. Utilizing this data, AI generates personalized exercise routines, nutritional advice, and motivational insights tailored to each individual's unique preferences and requirements. Key features of AI fitness training encompass real-time feedback during workouts, dynamic adjustments to exercise intensity based on user performance, flexible scheduling options, and comprehensive progress tracking capabilities.

EchoFetch (Retrieval Based Voice Conversion)

Bhakti Pratap Raut, Megha Jain,Shubham Divakar Kadam, Shreyas Ghag and Jayant Jadhav

Voice conversion is a process where the essence of a speaker's identity is seamlessly transferred to another speaker, all while preserving the content of their speech. By optimizing computational processes and resource utilization, the system aims to provide a cost-effective solution for users seeking high-quality voice conversions. Focused on enhancing user controls, the system allows for personalized adjustments to pitch, tone, and speed. Leveraging cutting-edge algorithms such as Crepe, Crepeone, Harvest, and more, it ensures high-fidelity voice conversions while maintaining realism. The paper focuses on expanding the feature set available to users, allowing for a more nuanced adjustment of both input and output voices. The inclusion of a comprehensive suite of features enables users to tailor the transformed voices according to their preferences with greater precision, enhancing the overall user experience.

Enhancing Prognosis: Deep Learning in Cystic Fibrosis Risk Prediction and Survival Analysis

Ashwini A Pandagale and Ashwini Pandagale

Cystic fibrosis, a prevalent, chronic autosomal recessive disease, significantly impacts morbidity and mortality. Advancements in treatment have notably enhanced prognosis. However, existing risk systems struggle with data complexity and competing risks. This

article introduces a deep learning-based risk prediction model to overcome statistical limitations, integrating long-term data for accurate survival estimates. It also evaluates C-index estimates for survival analysis based on follow-up periods and covariates.

Voice Based News Summarization

Shubham Divakar Kadam, Ajay Gangani, Avinash Kamble, Archana Pratap Haral and Suriya Kala

In the era of digital information overload, accessing and digesting news content efficiently has become increasingly challenging. To address this issue, we propose a Voice-Enabled News Scraper and Summarizer, leveraging cutting-edge technologies to streamline the news consumption process. This innovative system harnesses the power of voice recognition and natural language processing to allow users to effortlessly retrieve and summarize news articles through spoken commands.

Deep Learning Solution for Ultrasound Images Speckle Reduction

Nilima R Patil

In the modern world, although ultrasound imaging the most popular medical imaging technology and is mostly utilized for illness diagnosis. In ultrasonic images, speckle noise is the primary cause of image quality loss. For radiologists to have better images to aid in their diagnosis process, this noise must be eliminated. The objective of this proposed work is to improve the resolution and minimize speckle noise in medical ultrasound images using deep learning (DL) and the convolutional neural network (CNN) technique. The proposed Unet_elu model has been trained using breast cancer dataset and Compared the results with CNN autoencoder model, unet Leaky_relu and various filtering methods like Median blur, Gaussian blur, Average blur and Bilateral filtering. The resulting reconstructed image was assessed using the evaluation metrics of (PSNR), (SSIM), and (MSE), with varying degrees of speckle noise. We got a PSNR value 34.38 and SSIM 97% resp. better than traditional methods.

Translating Resource Material To Regional Language

Rutvik Dinkar Dhumal, Afroz Patel, Megha Jain, Shruti Lende and Bhakti Aher

This research presents a novel LSTM-based language translation model utilizing the pre-trained Google/mt- small model within the transformers architecture. The model is designed for bidirectional translations between various Indian languages. Three key features enhance its functionality: Text Translation, Image Translation ,Video Translation. To enhance user interaction, a user-friendly Flask API is developed, supporting all three translation features for seamless integration into applications or platforms. This research contributes to language translation and demonstrates practical applications in multilingual communication across text, image, and video modalities. The integration of transformers, EasyOCR, and MoviePy enhances adaptability, making the model valuable for diverse translation needs.Our approach incorporates advanced techniques for handling low-resource languages, enabling effective translation even for languages with limited available training data.

Early-Stage Alzheimer's Disease Prediction Using Machine Learning Model

Mukul Omar,Neeraj Kumar,Ravishankar Singh and Deependra Sinha

Alzheimer's disease (AD) is a neurodegenerative disorder causing progressive memory loss and cognitive decline. Early AD detection is crucial for timely intervention and disease management. We propose a machine learning approach utilizing MRI data for early-stage AD prediction. Our method employs support vector machines, random forests, decision trees, and voting classifiers to analyze MRI features and identify individuals at risk. By incorporating ensemble learning and comprehensive biomarkers, our approach addresses limitations of existing methods. Trained and evaluated on the OASIS longitudinal MRI dataset, our models achieved an average 83% accuracy in predicting early-stage AD, outperforming previous approaches. We analyzed model performance using precision, recall, and F1-score to ensure robust predictions. This method has the potential to aid clinicians in early AD diagnosis, enabling timely interventions and improved patient outcomes

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AI in Healthcare

Arslan Parkar, Shilpali P Bansu, Om Mestry and Kaleem Shaikh

This research paper explores the transformative role of machine learning in the field of X-ray analysis within healthcare. Extending from the broader impact of Artificial Intelligence (AI) in the healthcare sector, our study concentrates specifically on the application of machine learning algorithms to X-ray diagnostics. Commencing with an insightful overview of the profound influence of AI in healthcare, the paper emphasizes its potential to enhance patient care, improve clinical outcomes, and optimize healthcare operations, focusing on key areas like diagnostic tools and predictive analytics.

Developing a Comprehensive Framework for Personal Fuel Expense Tracking and Carbon Emission

Rashmi B. Kale

This study presents a comprehensive framework designed for individuals and administrators for effectively tracking personal fuel expenses and assess carbon emissions per day. The framework aims to provide a systematic approach for analyzing fuel usage and associated environmental impacts. Through comparative analysis, the performance of this framework is evaluated to validate its effectiveness in facilitating informed decision-making. A novel approach in leveraging real-time data collected through IoT device installed in various vehicles to analyze emissions with a predictive framework. By harnessing this data, the framework employs predictive modeling techniques to anticipate emissions patterns. Through the integration of IoT technology and predictive analytics, this innovative methodology offers a proactive means of understanding environmental impacts associated with vehicle emissions.

An Analysis of Multimodal Fusion in Deepfake Detection for Video Samples

Poornima S , Devang Mulye, Aditya Yadav and Parakh Pawar

The rise of deepfake technology poses serious privacy and security threats, especially for celebrities. A comparative analysis of two pre-trained detection methods, ViT and

Meso4, reveals their effectiveness in distinguishing authentic from manipulated images. Utilizing the DFDC dataset for ViT and a combination of self-made and Face2Face datasets for Meso4, ViT emerges as superior despite its substantial data footprint, excelling in accuracy and generalization for diverse image classification tasks. To address limitations, a customized model integrating ViT with features like Eye Movement Error Detection and Lip Sync Inconsistency is proposed, filling voids in deepfake detection and improving accuracy and computation speed for both image and video classification. These findings pave the way for the development of a robust and unbiased deepfake detection method tailored to practical application requirements

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Depiction Inspired Recipe Generator Using Deep Learning

Om Awari, Janmejay Maurya, Shivaraj Ghangale, Aishwarya Ghangale and Keerti D Kharatmol

Imagine snapping a picture of a delicious dish and getting a recipe to cook it. This is what machine learning (ML) and Deep Learning (DL) is bringing to the kitchen. ML can turn a food image into a recipe with instructions. It's like magic, but it uses computer vision to recognize ingredients and amounts. Then, it uses recipe databases to create step-by-step instructions. This is cool for everyone. Experienced cooks can get new recipe ideas, and beginners can learn to cook with easy instructions. ML can even be your culinary assistant, recommending recipes based on what you like and what you have in the fridge. It can also learn from your feedback and get better over time. In the future, this technology might even work with smart kitchen appliances. This could make cooking even more fun and easier for everyone

CampusX: Empowering College Selection with 3D insights using machine Learning approach

Reena Ostwal, Utkarsh Mishra, Aditya Mishra , Satyaprakash Mishra and Siddhant Singh

CampusX redefines college selection with dynamic 3D insights, empowering students to navigate campuses virtually. Utilizing cutting-edge machine learning and visualization

techniques, it transforms static data into interactive experiences. Personalized comparisons enable informed decision-making, while predictive analytics forecast future campus developments. With a user-centric interface and robust privacy protocols, CampusX ensures seamless exploration and data security. This innovative platform bridges the gap between prospective students and their ideal educational environments, revolutionizing the higher education landscape

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Comparative Study of VGG16 and GoogleNet for Iris Recognition

Vansh Rakesh Parmar, Dhruvi Shah, kshi Indolia and Aditya Kasar

This study evaluates the performance of two well-known convolutional neural network (CNN) architectures VGG16 and GoogleNet, for iris recognition. Each image in the iris dataset represents a unique pattern of the iris. Pretrained on extensive image datasets, both algorithms are capable of capturing complex iris patterns. The computational efficiency and discriminative power of the extracted characteristics are examined. The outcomes demonstrate the efficacy of both models in extracting features, although minor variations in performance were noted. We have used Keras with a Python TensorFlow backend for our experiment. While the VGG16 Model gives 100% training accuracy and 95.54% validation accuracy, the GoogleNet Model yields 100% training accuracy and 86.83% validation accuracy for 100 epochs

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Indian Tourism Webproject using GIS and ML Chatbot

Ayush Verma, Sachin Satam, Keerti D Kharatmol, Siddhesh Milind Haldankar and Aneesh Panchal

The tourism industry has witnessed significant growth in recent years, with an increasing number of travellers seeking personalized and seamless experiences. This present paper aims to revolutionize the tourism website experience by integrating Geographic Information System (GIS) technology and a Machine Learning (ML) based chatbot. It facilitates route optimization, helping users plan efficient itineraries based on their preferences, travel modes, and time constraints. The synergy between GIS and the Natural Language Processing(in chatbot) creates a powerful tool for users to plan their travels effectively. Together, they enable users to inquire about travel details and

receive interactive map recommendations, with the chatbot continuously learning and improving from user interactions

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Multi Disease Prediction – A Comparative Study Using Analytical Tools

Prathamesh J Pawar, Rishabh S Yadav, Amit Pandey, Adarsh Tiwari and Dilip Dalgade

This project describes extensive research using various classification algorithms, including decision trees, random forests, and vector machines (SVM) aimed at predicting several diseases. The main goal is to compare the performance of this algorithm to accurately predict several diseases. Using analytical tools like Power BI, we create an interactive dashboard to visualize and analyze performance metrics. Through this comparative analysis, we aim to identify the most reliable and efficient algorithms for disease prediction in different healthcare scenarios. The researchers used a database that included a number of health parameters and disease indicators. By systematically evaluating the performance of different classification algorithms on this database, we sought insight into their strengths and limitations in disease prediction tasks. Additionally, interactive dashboards created using Power BI facilitate easy interpretation and comparison of results

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VisionAI:-A Tool to style your home

Jayesh Kumar Kharol

VisionAI presents a comprehensive system aimed at revolutionizing the interior design process through the integration of machine learning and advanced frontend technologies. Leveraging the 'sdxl-base' model from Hugging Face and the ControlNet model accessible via a robust API, VisionAI generates personalized room designs aligned with user preferences. Users can upload room images and specify room types, prompting the system to generate designs that adhere to specified characteristics. Additionally, VisionAI allows users to manipulate furniture items using three.js, customizing dimensions, textures, colors, and positioning to meet specific needs. Furthermore, users can generate room designs based on textual prompts, facilitated by

the 'sdxl-base' model. This paper showcases the transformative potential of technology in simplifying and enhancing the interior design process, paving the way for accessible and personalized design solutions

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Audio Summarization of Podcasts

Sakshi Narendra Patil, Tanaya Manoj More; Ritika Baban Parate, Shubh Vijay Mehta, and Devika roy

Podcasts have become a prominent medium for sharing information, stories, and entertainment. As the number of podcasts continues to grow, the need for efficient methods to consume their content becomes increasingly important. This research paper explores the development and implementation of an audio summarizer for podcasts, aimed at providing users with concise, informative summaries of podcast episodes. The paper discusses the motivation behind such a tool, the methodology used for summarization, the technology involved, and potential applications.

Attendance System Using Voice Authentication

Angelin Zionia, Ranjeet Singh, Yash J Shirdhankar and Shubham Upadhyay

In response to outdated attendance tracking methods, the "Attendance System Using Voice Authentications" introduces a cutting-edge solution leveraging voice recognition technology. This biometric approach ensures accurate and secure attendance recording across educational, corporate, and public sectors. Features such as voiceprints, real-time authentication, and secure databases enhance accuracy, security, and efficiency. By eliminating the need for passwords and minimizing errors, this system transforms attendance management, offering a streamlined process that saves time and reduces administrative burdens. With its potential to prevent impersonation and fraudulent records, it represents a significant advancement in attendance tracking methods

Augmented Reality (AR) and Virtual Reality (VR) Based Learning System

Snehit Gawand, Harsh Chelimela, Anuj Gawade, Rohit Bhadane and Shilpali P Bansu

Augmented Reality (AR) and Virtual Reality (VR) technologies have provided immersive digital experiences, interactive environments, simulation, and engagement, have

completely changed how we approach learning. However, in order to meet the huge demand in education, these technologies—which are still in the emerging stage—need to be heavily customized and heavily invested in. This in-depth analysis tries to frame the evolution of augmented reality and virtual reality in education during the past twelve years. The uses of augmented and virtual reality (AR/VR) technologies in the architecture, engineering, and construction (AEC) business are gaining traction quickly thanks to updated equipment and developing technology. More researchers are beginning to use AR and VR technologies, particularly in education and training, to give students and trainees access to an immersive, interactive, and visual environment.

AR Based Wrist Scan Watch App

Kunjal Kanji Makwana, Ritesh Singh, Yash Ingale and Aarti Abhyankar

Augmented Reality (AR) has emerged as a transformative technology with profound implications for various industries, including fashion retail. In this context, the development of AR Wrist scan watch application represents a significant advancement, offering consumers an engaging and immersive way to virtually interact with timepieces before making purchase decisions. This research paper delves into the intricate process of creating such applications using Unity, a versatile game engine, and Vuforia, a robust AR development platform. Through a detailed examination of the technical implementation, including design considerations, environment setup, watch model integration, AR interaction mechanisms, and rendering optimizations, this paper provides insights into the complexities of AR development. Furthermore, it addresses key challenges such as tracking accuracy, realism enhancement, and device compatibility, offering practical solutions to overcome these hurdles

AR application in Tourism

Priyanka Sananse, Shruti Manish Chavan, Niveditha Sherugar and Dishita Yemul

The paper explores the integration of Augmented Reality (AR) technology in tourism, focusing on the use of QR code scanning to offer an immersive 360-degree exploration of monuments and tourist destinations. This innovative approach allows visitors to

interact with monuments from multiple perspectives, providing detailed historical information and enhancing their understanding of cultural significance. The fusion of physical and digital realms presents an opportunity for both travelers and cultural heritage sites to thrive in the modern age

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VR Horror Game

Shruti Swami Sabbani ,Ritvik Babre , Hitesh Behera, Swapnil Yadav and Punam Bagul

In this study, we proposed an analysis framework that examines participants' immersive experience processes from three dimensions: (1) the state of enjoyment, (2) the transformation of the awareness of time, and (3) a sense of spatial integration. We found that the balance of skills and challenges is threshold factor affecting participants' overall enjoyment state and experience of transforming the time awareness during a VR gaming process. With cutting-edge VR technology, you will be transported to a place where your every sense is assaulted by the unknown, and your survival instincts are pushed to the limit. Confront your deepest fears, solve intricate puzzles, and face grotesque monstrosities as you journey deeper into the darkness

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AR Based Clothing

Sarvesh Rane, Abhishek Ramjeet Maurya, Atharva Shinde and Shital Patil

Augmented Reality (AR) has emerged as a disruptive technology in various industries, and its application in fashion retail has garnered significant attention. This paper explores the integration of AR in clothing retail, presenting its potential to transform the way consumers shop for apparel. By overlaying digital content onto the physical world, AR allows customers to visualize clothing items in a virtual environment before making a purchase, enhancing their shopping experience and decision-making process. This abstract discusses the key aspects of AR-based clothing, including its benefits for both consumers and retailers, technological advancements driving its adoption, challenges faced in implementation, and future prospects. The study suggests that AR-based clothing has the potential to revolutionize the fashion industry by bridging the gap

between online and offline shopping experiences, increasing customer engagement, reducing returns, and driving sales.

AR Based Engineering Drawing Tool App

Virendra V Palekar ; Aarya A Adhav ; Unnati S Patil; Avinash R Sonule

This approach brings a different perspective to T&L methods and content development which results in a better experience for students. Running international projects require the use of methods and tools to facilitate the communication of content. The process of creating the AR/VR content is time-consuming if not developed using effective design and visualization methods. Students are more accustomed to using 3D games with a high level of visual detail where a substantial amount of investment may have been available for commercial projects. However, large file sizes may limit its use as it would require high internet speeds to download the animation content which could be hosted on a website, many educational institutions have fast and free internet available.

Enhancing Blueprints with AR: Crafting a Creative Walkthrough Experience

Poornima S, Apoorva Saxena, Shlok Shinde, Harsshita Vontivillu and Simran Naik

Navigating a new educational environment can be challenging, especially for first-time students unfamiliar with the campus layout and facilities. This paper presents the development of an Augmented Reality (AR) application designed to enhance the experience of exploring the first floor of College. The problem statement centered on providing new students with an intuitive and engaging way to familiarize themselves with the college layout, fostering a sense of belonging and improving their overall campus experience. Addressing this, it was taken up to develop an AR walkthrough application using Vuforia and Unity software. The application overlays a virtual model of the college's first floor onto the real world, allowing users to navigate the space virtually. This paper delves into the development process and tools, creation of the virtual model, and the integration of interactive features

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Blockchain Technology in the Medical Supply Chain: A Comprehensive Survey

Yogesh Arjun Shinde, Shrinivas Sonkar,

Blockchain has enabled major worldwide discoveries. Blockchain provides safe data exchange platforms for numerous applications. Application areas include bitcoin trading, tracking systems, supply chain and logistics monitoring, money laundering prevention, and secure healthcare data sharing. The healthcare supply chain confronts various issues, including poor security, lack of transparency, and product manipulation, such as counterfeit drug distribution. Moving healthcare equipment from its origin to its final beneficiaries requires more paperwork, costs more, and takes longer. This study examines medical supply chain management and blockchain technologies. Healthcare systems globally struggle with supply chain security, transparency, and traceability. An alternative blockchain healthcare supply chain technique was extensively analyzed. We assess current difficulties and blockchain's potential to transform the healthcare supply chain.

Blockchain Adoption in Indian Public Services: A Holistic Empirical Investigation

Mukund Madhav Tripathi, Aditya Kasar, Divyang Sureshbhai Jadav

The research paper investigates the effectiveness and scope of blockchain technology within the Indian public sector through a comprehensive empirical study. The paper explores the transformative impact of blockchain adoption on public administration utilizing a blend of surveys, interviews, and case analyses. It examines how blockchain can enhance transparency, streamline processes, and address challenges such as fraud and corruption. The study delves into the considerations necessary for successful blockchain integration, encompassing security, regulatory alignment, skill development, interoperability, and collaborative efforts. Insights garnered from public sector professionals and newcomers shed light on the varied perspectives surrounding blockchain's potential. The paper offers policy recommendations, strategies, and capacity-building initiatives tailored to the Indian context.

Ignite Hope: Empowering Change, Innovation, and Relief through Blockchain Crowdfunding

Savita Lade, Atharv Shivaji Sanap, Raj Singh, Aditya Rane, Saloni Sonawale

"Ignite Hope" shows the way to crowd funding using the power of blockchain technology. By leveraging the transparency and security of blockchain, IgniteHope lays the foundation for trust and accountability in a crowdsourcing environment. The platform automates and streamlines the fundraising process using smart contracts, ensuring success while reducing friction and middlemen. With IgniteHope, the potential for global impact is greatly increased. In the event of an emergency, Ignite Hope's blockchain-powered infrastructure ensures prompt and efficient delivery that is fast and secure. The combination of blockchain and crowd funding at Ignite Hope marks a revolution that speaks of a future where fundraising is transformative, not revolutionary. This new platform gives hope for a more sustainable, transparent, and balanced world. As technological advances continue to shape our lives, Ignite Hope sheds light on ways to transform, innovate, and help improve tomorrow.

Detecting Phishing Websites using Hybrid Methodologies

Gargi M Deshpande, Shreyas Katkar, Tanvi Kangane, Ayush Kumar Giri, Diksha Kale

In the digital age, stealing personal information has become a prevalent and increasingly punishable crime. Phishing websites mimic legitimate ones, leading users to unwittingly disclose sensitive personal and financial information, resulting in a surge in fraud cases. To combat this growing threat, a comprehensive paper is proposed. This approach involves dataset pre-processing, analyzing attributes like IP addresses, URL length, web traffic statistics to distinguish phishing websites from legitimate ones. A hybrid model that combines CNN-GRU model with Light GBM is then employed, offering superior performance compared to traditional methods like LSTM, SVM. The research aims to identify phishing URLs and identify the optimal approach a comparative analysis of each algorithm's accuracy, false positive, and false negative.

Counterfeit Drugs Detection Using Blockchain

Sanket Balaso Rasal, Alkaif Mukri, Prajwal Pawshe, Rakesh Suryawanshi

The pharmaceutical industry faces a daunting challenge with the proliferation of counterfeit medications, which pose serious health risks worldwide. The complex and fragmented nature of pharmaceutical supply chains exacerbates the difficulty of identifying and eliminating counterfeit drugs. However, there is promising potential in harnessing Blockchain technology to address these issues and enhance the safety and integrity of the supply chain. Blockchain offers a decentralized and transparent ledger system that enables secure recording and tracking of pharmaceutical products at every stage of the supply chain. Each transaction is cryptographically linked and immutable, providing a tamper-resistant record of product movement. This transparency and traceability make it significantly more difficult for counterfeiters to infiltrate the supply chain undetected.

Meta Estate: Exploring Opportunities in Property Investment in Metaverse

Adarsh Rai, Smita R. Chunamari, Tarun Manchikatla, Bhavesh Kodam, Zumair Ahmed

Decentral and operates as a virtual reality platform supported by the Ethereum blockchain. Individuals have the ability to craft, discover, and monetize content and applications within this space. The community holds permanent ownership of the land in Decentral and, granting them complete authority over their creations. Users establish ownership of virtual land via a blockchain ledger featuring parcels. These landholders oversee the publication of content on their specific land, which is designated by a pair of Cartesian coordinates (x, y). The range of content varies from static 3D scenes to interactive systems like games. Land serves as a non-fungible, transferable, limited digital asset stored within an Ethereum smart contract. Acquiring land necessitates the expenditure of an ERC20 token known as MANA. MANA also facilitates purchases of digital goods and services within the virtual realm. The appeal of virtual worlds is increasing, for both leisure and professional purposes.

ChainCare: Medical Supply Chain using Ethereum Blockchain

Rahul Kongari, Aditya Kachare, Kunal Akhade, Tushhar Barkur, Jignesh Patil

Over the past decade, advances in technology have greatly improved the healthcare system. The introduction of smart services has led to the government enabling seamless workflows in drug supply chains. Through the use of complex encryption algorithms, blockchain use in medical supply chain would increase transparency, efficiency and security by providing data that is immutable. Unlike databases, blockchain improves product traceability without the risk of data falsification. Supply chain management systems previously relied on cloud and database storage to track supply networks, which can lead to inaccurate data, limited data history and lack of transparency. These limitations can lead to counterfeit medicines, which have critically negative effects on the health of humans. Therefore, traceability and effective product control are essential for an ideal medical supply chain.

Exploring Blockchain-Enabled Evidence Vault Systems: A Comprehensive Literature Review and Analysis

Aryan S. Hable,

The Evidence Vault employs blockchain's distributed ledger to establish an immutable record of every interaction with evidence, ensuring an unalterable chain of custody. This decentralized approach minimizes the risk of unauthorized access, tampering, or data manipulation, providing stakeholders with an unprecedented level of confidence in the authenticity of the evidence. Through smart contracts, the system automates and enforces predefined rules for access, sharing, and validation of evidence. Each piece of evidence is assigned a unique cryptographic hash, enabling quick verification of its integrity and origin. The blockchain infrastructure not only enhances data security but also streamlines collaboration by providing a secure and transparent platform for sharing evidence among authorized parties.

Digital Notarization with blockchain

Asra Sadaf

The recent digitization process carried our in various application domains have caused the proliferation of digital documents, which are easier to be tampered and altered than the paper ones. This is calling out for a proper notarization service to certify the authenticity and integrity of digital documents. The possible security and privacy issues related to the traditional centralized realization of such a service require the usage of

decentralised design, which has the added value to also allow handling the increasing number of requests, offering high availability and resiliency degrees, and removing third trusted parties able to profile users' activities. This paper presents the design and implementation of such a service based on the blockchain service and related technologies.

Crowdfunding Blockchain Application

Sapan Shah

Crowdfunding has revolutionized the way individuals and organizations raise funds for their businesses. With the rise of online platforms and increased usage of internet, this innovative method of fundraising allows entrepreneurs and non-profit organizations to reach a global network of potential investors and donors. Trust and security are key factors in the success of crowd funding, and the integration of blockchain technology has taken this to new heights Blockchain is a decentralized technology that provides benefits such as more security, greater transparency, increased efficiency, and fewer opportunities for fraud. In this study, we show the differences between traditional systems and those based on blockchain technology, as well as the benefits of using blockchain networks in other areas. This project can help people understand the benefits of web-based blockchain systems in their business and use them to increase the transparency, efficiency and security of the system.

Enhanced Identity Verification for KYC using Blockchain

Dinesh Shahu, Kajal Sharma,Hamza Shiakh,Niraz Vishwakarma and Krishna Yadav

Abstract-Know Your Customer (KYC) procedures are critical for identity verification and risk mitigation in numerous sectors. However, traditional processes suffer from inefficiencies and privacy concerns. This abstract discusses the transformative potential of blockchain technology in revolutionizing the process. By employing blockchain's decentralized ledger, KYC data can be securely stored and selectively shared, reducing redundancy and enhancing data integrity. Smart contracts automate verification, reducing human errors and ensuring compliance with evolving regulations. This blockchain driven approach not only stream- lines on boarding but also empowers users to control their data, promising more efficient, secure, and privacy-conscious processes

with far-reaching implications across industries. Blockchain, as a decentralized and immutable ledger, presents a unique opportunity to create a single, trustable source of customer identity data. Through decentralized identity solutions, individuals can manage and share their KYC data selectively, ensuring privacy and consent in an increasingly digital world

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Unveiling Duqu and Stuxnet : The Cousin Malwares

Rushikesh Ravindra Adsule

Stuxnet and duqu are malware computer worms which can dis arm the computer system in the world. They both are very similar to each other but duqu has a upper hand than stuxnet. Also, duqu is more dangerous and destructive than stuxnet because it has two different versions duqu 1.0 and duqu 2.0. Stuxnet was the first targeted malware that received worldwide attention for causing physical damage to the industrial infrastructure that was apparently isolated from the online world. The stuxnet was found in year 2010 by CrySyS Lab in Budapest, after the discovery of this malware it was the first one in the world to be reported as the cyber weapon.

Patient Data Management System Using Blockchain

Bhoomika Maruti Sonkamble, Ashutosh S Maurya

The traditional healthcare system, relying on paper-based or centralized electronic medical records (EMRs), faces inefficiencies and delays. Internet Transmission of medical documents as a temporary solution introduces risks and unreliability, posing threats of data breaches and unauthorized access. Blockchain technology emerges as a secure, decentralized alternative for medical record storage, ensuring tamper-proof, auditable methods and cryptographic techniques for data integrity, confidentiality, and controlled access. The envisioned blockchain solution, employing MetaMask, Hardhat, Web3JS, Solidity, and cloud services establishes a decentralized network for secure medical record access, emphasizing patient empowerment. Through seamless integration with existing systems, smart contracts automate sharing, ensuring safe and auditable access. The anticipated outcome is an efficient, secure, and decentralized system revolutionizing medical record management in healthcare.

Real-Time Video Surveillance System using SSD and DeepSORT algorithm

Pratham Gautam Rangras, Nabeel Parve, Faisal Sarang and Omkar Walve

This paper proposes a real-time surveillance system utilizing the Single Shot MultiBox Detector (SSD) for object detection and the DeepSORT algorithm for multi-object tracking. We evaluate the system's performance and compare it to alternative object detection models, You Only Look Once (YOLO) and Faster R-CNN, in terms of accuracy, speed, and resource efficiency. The analysis investigates the trade-offs between these models for real-time surveillance applications. The findings shed light on the suitability of SSD and DeepSORT for practical surveillance scenarios, considering factors crucial for continuous monitoring;

Comparative Analysis of Data Augmentation Techniques in CNN-Based Classification of Atelectasis

Nidhi Kadam

This research delves into the critical issue of atelectasis, its causes, and potential complications if left untreated. Leveraging deep learning algorithms, particularly Convolutional Neural Networks (CNNs), the paper explores their application in medical image analysis, focusing on the detection of atelectasis using the "chestX-ray8" database. The study compares various data augmentation techniques for improved accuracy, showcasing the importance of augmentation in enhancing model generalization. Through meticulous experimentation and evaluation, the research underscores the significance of balanced augmentation strategies in refining CNN performance for medical image analysis, offering valuable insights for future research and practice in radiology applications

Enhancing Wildlife Tourism Management Using Deep Learning and Particle Swarm Optimization (PSO) for Animal Detection in Wildlife Sanctuaries.

Dev Hinged, Bindi Gondalia, Neeraj Pawar, Palak Singh and Aditya Kasar

Surging demand for wildlife experiences makes it necessary to find efficient measures that are friendly to conservation. The use of these advanced techniques in this field such as YOLO and PSO algorithm presents a new dimension on managing wildlife tourism. This research centers on deep learning approaches as well as PSO algorithms. In order to train our animal detection model, a custom animal dataset was created specifically for this purpose and was annotated CVAT. The dataset encompasses various sources of animal images and includes examples from species regularly encountered by tourists when they go on safari, thus capturing some diversity. After annotation we can use it as the basis for training object detecting model, YOLOv8s. Hyperparameter tuning was done for optimizing the model using PSO algorithm by obtaining the best fit parameters. This optimization process involves enhancing the detection precision through improving the model's ability to recognize different animals

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A Machine Learning approach to Sign Language Recognition

Neha Madhukar Bhoye ,Harshala Chaudhari, Kunal D Bhonde, Ritik Jain and Naina Kaushik

This project presents a real-time sign language recognition system utilizing machine learning techniques, specifically a convolutional neural network (CNN) and support vector machine (SVM). Hand keypoints are extracted using the MediaPipe library, with Python, tkinter, and PIL used for GUI and image processing. The system offers text-to-image and text-to-speech functionality, along with translation to Hindi and Marathi, enhancing accessibility for individuals with hearing impairments. The integration of CNN and SVM enables accurate gesture detection, while real-time webcam-based recognition and dynamic sentence formation enhance usability. The open-ended design encourages collaboration and data contributions, ensuring adaptability to diverse sign language expressions. This innovative system represents a significant step towards fostering a more inclusive communication environment for the hearing-impaired community.

Virtual Try-On of clothing for Free-size Implementation

Smita R. Chunamari, Aditya Anil MHATRE, Shubham V Pisal, Prathmesh D Borate, Jayesh Kishor Kumbhare

Virtual try-on tasks aim at synthesizing realistic try-on results by trying target clothes on humans. Most previous works relied on the Thin Plate Spline or appearance flows to warp clothes to fit human body shapes. However, both approaches cannot handle complex warping, leading to over distortion or misalignment. Furthermore, there is a critical unaddressed challenge of adjusting clothing sizes for try-on. To tackle these issues, we propose a Clothing-Oriented Transformation Try-On Network. Additionally, to properly remove the clothing region from the human image without losing significant human characteristics, we propose a clothing elimination policy based on both transformed clothes and human segmentation. This method enables users to try on clothes tucked-in or untucked while retaining more human characteristics. Both qualitative and quantitative results show that COTTON outperforms the state-of the-art high-resolution virtual try-on approaches

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Voice Based Depression Detection through Machine Learning

Sophie George

The "Voice-Based Depression Detection System using Machine Learning" provides a machine learning-based approach to tackling depression, a commonly underestimated mental health problem, in an era marked by increased concern for mental health. The proposed system employs a web-based model that facilitates communication between the patient and the doctor through two separate windows - one for the doctor and the other for the patient. This research aims to deliver a sensitive, accurate, and scalable solution for early depression identification by intensive data collecting, feature extraction, and machine learning model construction. The findings show that the system has the potential to make a substantial difference in healthcare and mental health support, providing quick intervention and help for people in need. This initiative is an important step toward using cutting-edge technology to improve mental health, stressing the potential for voice-based applications to be a vital resource.

TRANSCRIBO TECH: Bridging modalities with Handwritten Text Extraction, Translation, and Speech Recognition

Pratik More, Sayali Divekar, Kunal Gosavi, Deepak Darade

The goal of our study is to develop a method for removing linguistic barriers inside and between nations. Our program will have several features to help with cross-language and cross-region communication. Text extraction from photographs is a crucial component that supports languages including English, Hindi, and Marathi. Another essential element that recognizes the value of verbal communication is speech recognition. In this element convert the speech to the text format furthermore, to facilitate smooth text translation between languages, we explore the topic of machine translation, a subfield of computational linguistics. Our technology, which combines all these features into a single online application, offers a comprehensive solution for overcoming language barriers in a variety of scenarios, in contrast to traditional translation methods.

Social Media Analysis Using Big Data

Altaf Arshad Khan, Shilpali P Bansu, Om Ugale, Krutika Monde

Social media has become an ordinary part of daily life among various age groups, from updating personal lifestyle to get up to date with social well-being. We aim to harness the power of big data to gain deep insights from the vast and ever-growing volume of data generated on social media platforms. We will collect and process data from various social media platforms, including text, images, and user interactions, using cutting-edge big data technologies. Through advanced analytics, such as semantic word analysis and topic modeling, we will uncover valuable trends, user sentiments, and key influence, offering practical applications for businesses, governments, and researchers. Additionally, ethical considerations and privacy safeguards will be integral to our approach to ensure responsible data usage. By combining the vast reach of social media with the scalability of big data analytics, this project promises to provide a comprehensive understanding of the social media landscape.

Player Prediction System Using Data Analysis

Kaustubh S Ayare, Siddhi Ghodke, Yash Badgujar, Tanisha Barot,

Our cricket analytics research introduces a unique player prediction system using Microsoft Power BI, prioritizing user-friendly visualizations. We curate a comprehensive

dataset from ESPN Cricinfo through Bright Data, covering batting, bowling, match results, and player info. Integrated into Power BI with DAX measures, it results in an interactive dashboard for accessible predictive insights. Using key metrics from historical World Cup data, our system proves effective compared to traditional ML models. The research details methodology, tool selection, and the integration process succinctly. Results highlight the system's prowess in player performance insights, suggesting a transformative role in cricket analytics. The discussion critically evaluates strengths and weaknesses, emphasizing the advantages of Power BI and DAX measures, contributing to sports analytics with a shift towards user-centric, visualization-rich predictive modeling.

Recipe-Fusion: Multimodal Food Recipe Recommendation System.

Karthik Anilkumar Nair, Sanjog Chavhan, Tejas Pawar, Anmol Reddy, Charumathi KS

The food recipe recommendation system using data science is a software solution designed to help users discover new and delicious food options based on their food history and other relevant data. This system recommends various recipes based on the input given by the user and it helps to filter out the recipes on course type, diet type, and nature of the food (Including non-veg, and veg) using a recommendation technique. The system also analyzes food trends and popular dishes that the users might not have considered before. The system can recognize the input ingredients provided by the user and give the recipe based on the ingredients mentioned. Various machine learning and deep learning approaches like CNN and RNN will be used for the implementation of this system. The system simplifies the task for an individual to cook food.

Using Logistic Regression To Predict Customer Churn in the Telecommunication Sector

Omkar Shyam Gangurde, Tanishq Choudhary, Dhruv Jadhav, Jaideep Rajwade, Aditya Kasar

To check customer churn for a telecom company is essential because of its ability to affect the company's revenue when clients move from one provider to another. Management must know the reasons behind customer churn to make right and well-considered decisions and improve service optimization. The present study uses SPSS software for the analysis of factors influencing customer churn using contrastive analysis techniques for identifying key factors that contributed. Based on logistic regression, this research examines the relative degrees of impact of these variables. Results indicate that fees on the phone, service quality, and service variety impact consumer churn significantly.

Loan Default Prediction in P2P Lending

Soham Madhavi, Pratham Baraskar, Ishan Qureshi, Kevin Antonio Lobo, Aditya Kasar

This research explores the application of Linear Discriminant Analysis (LDA) in predicting credit defaults on P2P lending platforms, using Lending Club data. Factors such as loan amount, annual income, interest rate, debt-to-income ratio, borrower grade, FICO score range, and other relevant measures are pre-processed. Through Tests of Equality of Group Means, we identify significant predictors of loan default. LDA classification demonstrates effectiveness in handling multi-class classification challenges, achieving an 82.7% accuracy rate. Notably, borrower grade emerges as a key predictor. Despite available data, a few features notably impact prediction accuracy, highlighting the importance of model interpretability and feature selection. This study enriches our understanding of credit risk assessment in P2P lending platforms and underscores the efficacy of LDA as a modelling tool in such contexts.

Project work management

Govardhan S Vanga, Manoj M Deshpande

Project Management represents a solution in project management designed to solve long-term problems and inefficiencies that affect traditional project management. This web-based platform offers a comprehensive set of features and tools that simplify project management, enable team collaboration, and provide timely project insight. In a world where effective project management is the key to business success, Project Management provides a powerful answer to the complexities and limitations of the

project management process. This report describes the complexity of this system, describes its development, key features, and its most important role in the modern world of project management.

Demand Forecasting for Perishable Food Commodities Using Data Analytics

Advaita Menon, Aman Mishra, Aryan Tiwari, Aditya Kasar, Aryan Tiwari

This paper introduces a comprehensive study aimed at enhancing the forecasting of perishable food item demand. The development of an optimized model that is capable of accurately forecasting the demand for perishable food items to prevent wastage is the focus of this research. The research includes a literature review on demand, pricing, and production prediction studies carried out in India. It argues that machine-learning algorithms can generate accurate forecasts and emphasizes the need for improved supply chain management to reduce waste in the perishable foods business. By underlining the need for modelling techniques, this work increases the understanding of demand forecasting. Each entity involved in the supply chain can reduce waste and maximize inventory management with the help of the paper's insightful recommendations and proposed mechanism, thereby benefiting through a reduction in the cost of maintenance of the perishable food products.

User App Segmentation for a better understanding of reviews and password resets Using Logistic Regression

Parth Agrawal, Aditya Kasar, Lishiv Sharma, Alaap Varma

In today's digital landscape, understanding users' needs and behaviors is key to improving app experiences. This paper focuses on how we can better understand user reviews and password resets in mobile apps through a method called user segmentation. By dividing users into groups based on their feedback and password reset patterns, we aim to uncover insights that can enhance app design and security. Using a mix of user reviews and password reset data from a diverse set of users, we analyze patterns using logistic regression. This statistical method helps us identify

different types of users and their preferences. Our findings reveal valuable insights into user sentiments and the likelihood of password resets. Ultimately, this research highlights the importance of tailoring app experiences to different user groups. By understanding their needs and behaviors, we can create more user-friendly and secure applications.

Unveiling Employee Attrition: Harnessing Predictive Modelling for Proactive Workforce Management

Anjali Sharma, Priyanshi Golatkar, Aditya Kasar, Prabuddha Tamhane , Shreyy Sharma, Vaidehi Shah

The purpose of this study is to use predictive analytics techniques to forecast employee turnover and uncover organizational characteristics that cause attrition. Employee attrition, which is defined as the departure of employees without an immediate replacement, results in a decrease in the size of the company's overall workforce productivity. To determine which employees are most likely to quit, the study evaluates several machine learning methods, including gradient boosting, random forest, and logistic regression. It also makes use of software programs like SPSS for rechecking the reliability of the models. Between the three approaches, gradient boosting yielded the most accurate results. The study finds that age, income, and work-life balance are significant factors associated with employee turnover. Recruiters can prepare for employee happiness by using this information.

Improving Plastic Bottle Waste Management System of India using RVMs

Gaurav M Keshari, Dhaval Powle, Krish Patel, Javic Kotheri, Aditya Kasar

India is ranked 1st in the most populous country in the world, plastic waste management has been a major ongoing concern for India. With the growing economy and population, the growth of plastic waste generation has been exponential but plastic waste management has been underachieved. The excess utilization and mishandling of single-use plastic have depreciated the performance of the plastic waste management system of India. This study emphasizes increasing the collection of plastic bottle waste using 3 real-time variants of Reverse Vending Machines – RVM BC-200, RVM PRO,

and RVM PRIME – that will create a beneficial impact on the recycling of the plastic bottles that are collected and hence ameliorate the plastic management system of India. This research uses data analysis and data visualization tools to propose an in-depth comparison between 3 real-time variants of reverse vending machines and a proposed hybrid model to achieve the optimal goal.

Unveiling the Link: Modelling Impact of Temperature on Domestic Energy Consumption Patterns in Mumbai

Kushal Chinchanikar, M R Mikhil, Ankur Kasbekar, Atharva Goswami, Aditya Kasar

Based on the data of Mumbai (2019-2020) we are going to understand the correlation between temperature increase and changes in energy usage patterns of different households. Our research aims to provide an understanding to current and future environmental and energy relate policies by analyzing data. The data has been obtained from reliable sources such as Kaggle, which provided for the research with daily energy consumption records, average temperatures, and seasonal categories. With the help of feature engineering, further improvement will be tried to implement on the predictability of models. Using eight machine learning models a comprehensive linear and non-linear correlation analysis will be done to understand the relationship between the two.

Hazardous waste management: Strategy to control and overcome the problem of household hazardous waste.

Kunal Pravin Ajgaonkar, Saad Ansari, Shreekrishna Gumaste, Aditya Kasar

It is a very well-established fact that India is a rapidly developing country and while the development has its upsides it tends to have more drawbacks than advantages. This fast-paced growth is associated with a lot of social, economic, and environmental issues. Environmental issues are ever increasing which brings attention to this field of research. Waste generated by industries as well as households proves to be one of the most significant factors in environmental deterioration. Hazardous waste is a subset of the total waste, but it is the deadliest kind of waste and is increasing at a steady rate. Recently there has been a lot of research on the current state of hazardous waste and

its management, but none of the studies have a comprehensive way of integrating people and Government. This study proposes an efficient and prudent way to collect hazardous waste from households and have it treated by the respective authorities.

Exploring the Efficiency of Leading and Lagging Indicators in Algorithmic Trading

Sudhanshu M Marudgan, Vikrant Arora, Anoushka Ramankulath, Punya Arora, Aditya Kasar

This paper presents the results of a comparison between the performance of leading and lagging technical indicators used in algorithmic trading. Most of the previous work done on this topic covers index price estimation however, studies evaluating trading strategies are limited. These indicators were tested on historical data of stocks constituting the NIFTYMIDCAP50 index from January 2019 to January 2024. This study applied the Relative Strength Index (RSI), Stochastic Oscillator, Simple Moving Average (SMA), and Exponential Moving Average (EMA) using fixed parameters. Over the 5-year study period, it was observed that leading indicators underperform in comparison to lagging indicators. The mean percentage returns for the lagging and leading indicators were found to be 37.06 and 18.67 respectively. The difference between the mean returns on all selected stocks, of leading and lagging indicators was found to be statistically significant with a p-value of less than 0.05.

Enhancing Fairness in Loan Approval: A TOPSIS-based Approach for Building a More Inclusive System in India

Khushi Chowdhury, Gaurav Thakur, Srushti Sharma, Prachie Agarwal, Aditya Kasar

This paper presents a comprehensive survey of the credit scoring system in India, focusing on its current landscape, challenges & opportunities. We have pinpointed some major gaps in the system, such as Integrating alternative data sources, fairness of AI-powered models, credit scoring practice standardization & regulation, improving financial literacy & credit score awareness & the dynamic function of CIBIL score in the loan approval process by using the TOPSIS method. Researchers, legislators, & financial organizations looking to advance financial inclusion in India & enhance credit scoring procedures would find great insights from this paper.

Enhancing Retail Efficiency: Implementing Predictive Analysis in Automated Inventory Management Systems

Kesha Joshi, Preetish Desai, Aditya Sharma, Ibrahim Shaikh, *Aditya Kasar*

The provided paper presents an Inventory Management System (IMS) ingeniously. This was made possible with the help of predictive analysis based on the historical data on sales which further helps in solving various challenges faced by retailers. The dissertation conveys the inconveniences of manual data entry and a disjointed ordering process, and instead offers automated inventory updates, predictive analysis-driven recommendations, and simplifies workflow. This aids in waste reduction, cost saving, enhanced customer satisfaction, and time efficiency. The primary attributes consist of automated data entry, intelligent ordering suggestions, optimized placement, and a management dashboard. This provides an upper hand in terms of time-saving, error reduction, improved stock management, and streamlined operations. The IMS has the goal of restructuring retail inventory management, enhancing efficiency, and maximizing profitability.

Using Binary Logistic Regression to Predict the Factors Affecting Sales in Clothing Industry (Amazon Sales)

Mohammed Amaan Khan, Vatsal Pachnanda, Prabhav Kaushas, Aditya Kasar

The fashion business enjoys the precious reputation of making perpetual progress and staying in the race. The study is centered on chaotic factors in this ever-growing market because it is about forecasting sales. It applies a statistical method called binary logistics regression for the examination of such sales factors. With the assistance of SPSS IBM statistics, the survey is being utilized to find out how marketing strategies, pricing taste decisions, and trends are related to sales performance. These discoveries from the research are likely to be useful for companies in the clothing industry to develop their strategies and strengths, survive in the market, and be competitive. Then come different types of regressions starting with standard linear and ending with complex logistic regression.

Epilepsy Detection Using Deep Learning

Bhargavi B Marathe, Jaya Tahil Jeswani, Rushikesh Redij, Sarthak Patil

Epilepsy, a neurological condition marked by recurrent seizures, impacts individuals differently, often resulting in unusual behavior, episodes of confusion, and seizures. Research conducted by the CDC reveals that nearly 3 million Americans live with epilepsy. In this study, the application of deep learning methods was explored for the identification of seizures and the examination of EEG data. A technique called 1D CNN-LSTM, which combines a dimensional convolution neural network with long short-term memory, is utilized in this context. CNN primarily extracts spatial features from the standardized EEG sequence data, while the long short-term memory aspect focuses on extracting temporal features. The study uses the CBHMIT dataset, splitting it randomly into 80% for training and 20% for testing. Through the implementation of the CNN architecture, an accuracy rate of up to 98% has been achieved and for CNN-LSTM the average accuracy achieved is 85%.

Smart PDF Reader

Shreya Sudhir Koshti, Yash Chaudhary, Manoj M Deshpande

The Smart PDF project presents an innovative desktop application aimed at revolutionizing the PDF reading experience through the integration of advanced language models and intelligent features. Leveraging the Lang chain framework in Python, the application offers functionalities including text summarization, translation, text-to-speech, question answering system, named entity recognition, and text generation. Through meticulous development and implementation, the project addresses the limitations of traditional PDF readers by providing users with powerful tools for information extraction, cross-language communication, and content creation. Initial user feedback indicates high levels of satisfaction with the Smart PDF application, highlighting improvements in efficiency, productivity, and comprehension in document management tasks.

Time Series-Based Weather Forecasting

Atharva R Naik, Ninad Mungekar, Surabhi Pandit, Parth Vyavahare, Suresh R Mestry

The accurate prediction of time series data holds substantial significance in various fields, enabling informed decision-making and resource optimization. This project focuses on the application of the Autoregressive Integrated Moving Average (ARIMA) model to predict temperature variations over time. Climate change and its associated impacts have heightened the need for reliable temperature forecasts. The ARIMA model, renowned for its capability to capture temporal dependencies in data can be used for time series prediction tasks. This model can be implemented and fine-tuned to accommodate the specific characteristics of temperature data, such as seasonality and trends. Historical temperature data is collected and pre-processed to ensure quality and consistency.

Resume Parser

Himanshu Mishra, Farhan Kazi, Hafeez Mohamed, Huzaifa Ansari, Sandhya A Awate, Veena Bhamre

The process of candidate evaluation in the modern job market is often a time-consuming and labor-intensive task for both job seekers and employers. To address this challenge, the development of an advanced Resume Parser has been undertaken. This project aims to streamline the recruitment process by automating the extraction and analysis of information from resumes, making it easier for employers to identify qualified candidates quickly. The Resume Parser utilizes natural language processing (NLP) and machine learning techniques to extract key information from resumes, including personal details, work experience, education, skills, and qualifications. The system is designed to handle a wide range of resume formats, whether they are in PDF, Word, or other common file types. Additionally, it supports multiple languages to accommodate a diverse applicant pool.

Safe Travel : Road accident analysis and hotspot prediction

Siddhesh Shivekar, Prathamesh Walawalkar, Parth Surve , Asad Mujawar

Road accidents are a severe public health concern, causing millions of injuries and deaths yearly. Using advanced algorithms like random forest, specialists analyze historical crash data to predict accident hotspots. Our study aims to uncover root causes, enabling proactive prevention. Through a user-friendly web app, individuals can access real-time info about nearby accident-prone areas. Leveraging Power BI, Excel,

and SQL, we identify road infrastructure issues and work with authorities to create targeted safety measures. Our goal: enhance road safety, reduce accidents, and save lives.

DisQuorNet: A Machine Learning Framework for Identifying Duplicate Quora Question Pairs

Yash M Amre, Ammar Ansari, Vipin Gajbe, Aman Gupta, Dnyaneshwar Kapse

Quora, renowned for its vibrant online community, faces a significant challenge amidst its vast repository of questions and answers: the proliferation of duplicate queries. This inundation of redundant questions obscures valuable content. Addressing this issue requires an automated solution capable of discerning subtle linguistic nuances. Leveraging advanced Natural Language Processing (NLP) techniques, including Bag of Words and word embeddings, researchers and developers aim to transform textual data into numeric vectors, forming the basis for sophisticated algorithms. Machine learning models such as Random Forest and XG Boost are deployed to enhance the accuracy of duplicate question detection. However, the dynamic nature of language, with its idiomatic expressions and context-dependent meanings, poses a formidable obstacle. Despite these challenges, the Quora community is committed to refining this process, ensuring the platform's integrity, and enriching user satisfaction.

KidVacc: A Comprehensive Guide to Child Immunization

Tanisha Santosh Gupta, Vansh Kamal Chanchlani

Child immunization plays a crucial role in safeguarding the health and well-being of children, offering protection against a wide range of preventable diseases. Informed parental decision-making is essential to ensure that children receive the recommended vaccines on schedule. This research paper presents an in-depth exploration of the multifaceted approach to educating parents about child immunization, equipping them with the knowledge and resources necessary to make informed vaccination choices for their children. The research paper begins by highlighting the significance of child immunization, emphasizing its role in disease prevention, herd immunity, and public health. It also discusses the common misconceptions and concerns that parents may

have about vaccines, addressing the importance of evidence-based information in countering vaccine hesitancy.

HARVESTIFY: ML-based tool for Home Gardening & Farming

Rohan C Nashikkar, Shubham Jitendra Sankpal, Ruchir Rao

This paper presents an innovative application leveraging machine learning (ML) techniques to enhance agricultural and home gardening practices through a comprehensive approach. The system aims to power farmers with data-driven insights,fostering sustainable and efficient agricultural practices. It integrates three key modules Fertilizer Recommendation, Crop Disease Detection, and a Community Section for user interaction. The Fertilizer Recommendation module utilizes ML algorithms to analyze soil characteristics, crop type, and historical data to provide personalized and optimal fertilizer suggestions, promoting precision farming. The Crop Disease Detection module utilizes sophisticated ML models to identify potential diseases in crops, leveraging image recognition, environmental data, and historical disease patterns. The Community Section fosters a collaborative environment where anyone can connect, share experiences, and seek advice, creating a supportive network.

Forecasting Household Energy Consumption using SARIMA

Harshal N Naik, Akshay Shukla, Fajan Sunusara, Priya Parate

Household energy consumption is a dynamic and multifaceted domain influenced by various factors, including seasonality, weather conditions, and individual consumption habits. Accurate forecasting is critical for homeowners seeking to manage costs, reduce environmental impact, and contribute to a sustainable future. Utility companies also rely on precise forecasts to optimize energy generation, distribution, and demand management. The efficient management of household energy consumption is imperative in an era marked by environmental consciousness and the need for cost-effective resource utilization. This project embarks on a comprehensive exploration of advanced time series forecasting techniques, specifically harnessing the power of the

Seasonal Autoregressive Integrated Moving Average (SARIMA) model. The primary objective is to develop robust forecasting models capable of predicting household energy consumption accurately.

A Novel Smart Hospital Management System using Android with facilities of Smart ambulance live patient assist, live patient status, medical requirement alert, and emergency alert

Dhanashree G Chaudhari, Sanjog Chavhan, Tejas Pawar, Anmol Reddy, Charumathi KS

This new paradigm, known as "smart health," has the potential to enhance the existing healthcare systems greatly. Utilizing cutting-edge sensing, processing, and communication technology in the healthcare industry is the goal of intelligent health, which aims to enhance the overall quality of treatment provided. For this study, we use innovative health to enhance the efficiency of both the ambulance and hospital services. In particular, we use the Global Positioning System (GPS) to find the patient and assign the ambulance to the patient in an emergency scenario, such as when the patient presses the panic button. information exchanged with the ambulance driver, but the ambulance driver can also search for hospitals and transport the patient to those hospitals The patient will be cared for by the hospital, and the prescription and report will be uploaded into the system so that the hospital can thoroughly grasp the healthcare report and the condition.

E-commerce Filter suggestion

Vaibhavi Yogesh Kharkar, Sohrab Khan, Akshita Mehta, Sareen Deore

Traditional e-commerce search and filtering systems often rely on basic keyword matching and predefined filters. However, these approaches may fall short of understanding the nuanced preferences and intents of users. To address this limitation, modern e-commerce platforms increasingly integrate advanced algorithms and machine learning techniques to enhance filter suggestions. E-commerce platforms should continually adapt filter suggestions based on user interactions and feedback. This dynamic adaptation ensures that the system remains relevant and up-to-date with changing user preferences and trends. This paper proposes an e-commerce bakery

shop system that enables both cakes shop owners and customers to manage their daily online buying and selling activities by incorporating data mining techniques. The system develops an Android application that allows customers to conveniently purchase their desired products from various bakeries online.

New Age E-Voucher Application for P2p Consumption

Chirag N Patil, Shilpali P Bansu, Manish R Soni, Jyotsana R Parkhedkar

This system introduces an innovative New Age EVoucher utility designed to facilitate peer-to-peer (P2P) intake through a person-pleasant cell platform. This revolutionary answer empowers people to create and list e-vouchers for numerous services, experiences, or bodily goods, circumventing conventional channels and fostering an extra direct financial machine. This groundbreaking New Age E-Voucher utility in addition distinguishes itself via way of means of incorporating superior functions and functionalities to decorate the general person experience. The utility consists of integrated compliance functions to deal with ability regulatory demanding situations, incorporating identification verification and adherence to nearby monetary regulations. As the New Age E-Voucher utility strives to redefine the panorama of virtual transactions, it stands as a complete and revolutionary answer, of P2P intake but additionally making sure adaptability, security in an ever-evolving virtual ecosystem.

CakeMeUp App - an E-Commerce Solution for a Cake Shop

Gaurav Pradip Vaze, Sanika Pawar, Sakshi Kadam, Manali Jangale, Sprooha Saurabh Athalye

This paper introduces CakeMeUp, an E-Commerce app for a cake shop developed using Flutter and Firebase. It boasts a sleek UI, real-time order tracking, secure payments, and cake customization. Integration of RazorPay and ikChatbot enriches functionality. The solution tackles E-Commerce challenges, delivering a scalable platform for seamless online cake ordering.

Visionary Companion: Revolutionizing Email Accessibility for the Visually Impaired

Ragini Sharma

In response to escalating efficiency demands spurred by technology, especially amid the surge in virtual work, robust communication resources are imperative. Email stands as a cornerstone for international and group communication, yet accessibility barriers persist for those with visual impairments. Addressing this gap, a pioneering project introduces a voice-based emailing website. Designed with vibrant colors and accessibility at its core, it ensures inclusivity. Users, including those with visual impairments, navigate effortlessly through voice commands, eliminating reliance on typing or pointing devices. Leveraging Google speech converter, this initiative meets the urgent need for accessible emailing systems, enhancing communication efficiency and inclusivity in the digital age.

Research On Understanding of Environmental and Cultural Factors Affecting Online Purchase Behaviour

Kartik S More

This paper delves into the intricate interplay between social and natural factors influencing consumer behaviour within the realm of e-commerce, contrasting it with traditional market dynamics. Despite the rapid expansion of e-commerce, comprehending the multifaceted influences of social norms, beliefs, technological systems, legal frameworks, and economic variables on consumer behaviour remains a persistent challenge. Through an extensive review of existing literature and experimental research, this study illuminates the complex interaction between environmental circumstances and social diversity in shaping e-commerce purchasing decisions. It underscores the need for tailored strategies and adaptable approaches to effectively engage diverse consumer segments across global markets. By bridging this gap through informed insights and strategic adaptation, businesses can unlock opportunities for sustainable growth and competitive advantage in the ever-evolving e-commerce landscape.

Sentiment Analysis Using Devnagari Language

Aditi U Tayade, Sandhya A Awate

Sentiment analysis, a crucial aspect of natural language processing (NLP), plays a significant role in understanding the opinions and emotions expressed in textual data. While extensive research has been conducted in sentiment analysis for languages with well-established resources, there is a growing need for effective sentiment analysis tools for languages with complex scripts, such as Devanagari.This research focuses on developing a robust sentiment analysis framework tailored specifically for the Devanagari language. Devanagari is widely used in languages like Hindi, Marathi, and Sanskrit, making it essential for sentiment analysis applications in diverse domains, including social media, customer feedback, and news articles.The proposed approach combines traditional machine learning techniques and state-of-the-art deep learning models to address the unique challenges posed by the Devanagari script.

CareerHub – Job Assessment and Career Growth Platform

Pradeep Rajesh Prajapati, Saloni Pandey , Kunal Salunke

CareerHub is a ultimate tool for optimizing the job search and career growth. It has an array of dynamic features, including intuitive job application tracking, personalized job rating, and advanced keyword extraction to align you with your ideal role. Elevate your job hunt with resume building, email templates, insightful note-taking capabilities, and guided support throughout every stage of your application process. It has a student community, where you can connect, collaborate, and grow together. Unleash the true potential of your job search journey with our comprehensive suite of tools tailored to your success and a supportive community by your side.

CareerX : An AI Based Career Counseling System

Suchit P Naik , Pranay V Kadam, Apurva Sumedh Nikumbh, Roshan Girase ,
Avinash Raghunath Sonule

Sentiment analysis, a crucial aspect of natural language processing (NLP), plays a significant role in understanding the opinions and emotions expressed in textual data. While extensive research has been conducted in sentiment analysis for languages with well-established resources, there is a growing need for effective sentiment analysis tools for languages with complex scripts, such as Devanagari.This research focuses on

developing a robust sentiment analysis framework tailored specifically for the Devanagari language. Devanagari is widely used in languages like Hindi, Marathi, and Sanskrit, making it essential for sentiment analysis applications in diverse domains, including social media, customer feedback, and news articles.The proposed approach combines traditional machine learning techniques and state-of-the-art deep learning models to address the unique challenges posed by the Devanagari script.

SMARTSPEAK: AI-VOICE ASSISTANT

Aniket G Varma, Vishal Singh, Dipanshu Bandoliya, Rupali Dhananjay Pashte

In this world Artificial Intelligence is advancing rapidly, the integration of voice assistants with cutting-edge language and image processing models has garnered significant attention. Chat-GPT's advanced natural language understanding empowers the voice assistant to improve conversational abilities and expand its knowledge base. Meanwhile, DALL-E's exceptional image synthesis capabilities enrich the user experience by generating relevant images in response to text-based queries. The proposed architecture seamlessly combines both models, enabling the voice assistant to interpret voice commands using Chat-GPT and utilize DALL-E for visual information, fostering interactive dialogues.The results showcase significant enhancements in capabilities, leading to more engaging and contextually-aware voice assistants, setting a path for smarter voice-based applications in the future.

Agile Modeling and Building an Inclusive Online Coding Platform for Programming

Kiran J Waghmare

The integration of agile modeling principles within the context of professional programming, emphasizes the development of online coding platforms tailored to meet the needs of computer science and engineering students. This study proposes an agile-based API-integrated J2EE online coding platform that provides an elegant development environment for seamless programming practice, particularly focusing on Java programming. This platform offers real-time programming progress tracking and understanding capabilities, fostering a collaborative learning experience between

teachers and students. The platform facilitates the identification and understanding of intricate coding concepts through the presentation of unexpected input values during practice sessions. By promoting for agility and inclusivity in the design of educational technology solutions, this paper aims to enhance the quality of coding-related coursework and ultimately empower students to write high-quality programs.

Genius Institute's Learning Management System

Sami D Wasta, Yojana Bagwe, Neha Talekar, Sprooha Saurabh Athalye

The result paper titled "Genius Institute's Learning Management System" encapsulates the development of a bespoke Learning Management System (LMS) for Genius Institute, a coaching center specializing in competitive exam preparation. Through advanced technology and personalized learning pathways, the project aims to enhance student engagement and learning outcomes. With dynamic assessment tools and immersive video content, the LMS signifies a departure from traditional education, offering a glimpse into the future of personalized learning.

Speed Control of Three phase Induction Motor By Using Variable Frequency Drive

Swaroop Rajendra Mane, Pradosh Gudade, Nikhil Jadhav, Atharva Nikam, Aniruddha Ray

Variable Frequency Drives (VFDs) have emerged as indispensable tools in modern industrial applications for controlling the speed of three-phase induction motors. This paper presents an overview of the principles and applications of VFDs in the context of speed control for three-phase induction motors. Initially, the fundamentals of VFD operation are elucidated, including the conversion of fixed-frequency AC power to variable-frequency output through pulse-width modulation techniques. One key advantage of VFDs is their ability to optimize energy consumption by matching motor speed to the specific requirements of the driven equipment. By modulating the frequency and voltage supplied to the motor, VFDs can reduce energy wastage during periods of low demand, resulting in significant cost savings and environmental benefits.

Solar Based EV Charger using RFID Sensor

Ankush Prabhu Suryavanshi , Makarand Devrukhakar, Abhishek Bandekar, Abhishek Wadne, Sanjeevani B Murari

Photovoltaic systems are one of the most abundant and environmentally friendly energy sources available today. Photovoltaic cells harness sunlight to generate electricity through solar cells. This paper presents the development of a solar-based fast tag charging station for electric vehicles, emphasizing the importance of efficient and cost-effective charging. The ARDUINO NANO serves as the central processing unit of the circuit, controlling the charging process from solar panels to the electric vehicle. Key factors such as cost, portability, and efficiency were carefully considered in the system design. The implementation of this system in public places can revolutionize smart charging for electric vehicles, promoting sustainability.

Wireless Electric Vehicle Charging Station with Billing Display and Battery Management System

Sarthak Santosh Navle , Gaurav Dongare , Rohit Gujar , Rashad Khan , Aniruddha Ray

Due to the depletion of natural resources, Electric vehicles are the most compatible technology which can be used for transportation. Wireless Power Transmission is the most compatible method which can be used for charging of electric vehicles, as it has low maintenance. In this paper, the source of power is partially taken from the AC supply mains and partially from solar photo-voltaic array. For charging the electric vehicle, the power is transferred from the charging station in transmitter side to electric vehicle in receiver side via wireless medium. Apart from electric vehicle charging, we have also implemented BMS (battery management system) which is used in the Electric Vehicles. . In BMS voltage divider circuit is used to reduce the battery voltage so that it can be measured by Arduino inside vehicle system. This battery management system displays the present status of battery level, and will automatically cut off the power supply when the battery is fully charged. In bore well child rescues but also provides real-time data from sensors and cameras accessible on mobile devices and an LCD module.

Electric Skateboard

Kartik C Sonar, Prathmesh Shinde , Rohit Chaudhari , Khushal Khawle, Sanjeevani B Murari

Environmental protection and energy conservation have become primary concerns in the 21st century, prompting accelerated efforts to plan and develop electric vehicle (EV) technology. EVs offer numerous advantages, including zero emissions, the establishment of a new automobile industry, economic development, and the creation of efficient and smart transportation systems. This project introduces a foot-controlled steering system designed to enhance vehicle control, making it suitable for various road conditions and reducing the rider's effort in driving the skateboard.

Power Factor Correction of EV Charger Using Bridgeless Isolated Zeta-Luo Converter

Hemchandra C Dhangar, Viraj Mahadik, Ashwini Malik, Dipti Dayaram Patil, Mohan S. Selokar

This paper focuses on enhancing the power factor of Electric Vehicle (EV) chargers through the implementation of a Bridgeless Isolated Zeta-Luo Converter. The traditional charging systems often exhibit poor power factor, leading to increased energy losses and reduced efficiency. The proposed converter aims to address this issue by employing a bridgeless topology and Zeta-Luo configuration, ensuring improved power factor correction and efficient energy transfer. The isolation feature enhances safety while maintaining a compact design. Through detailed analysis, simulation, this paper aims to demonstrate the effectiveness of the proposed solution in optimizing power factor and overall performance of EV chargers, contributing to the advancement of sustainable and efficient electric transportation infrastructure.

Smart Tourism for Ratnagiri: A Comprehensive Website Development Approach.

Swati Powar

The Ratnagiri area of Maharashtra India is situated in the coastal region of Konkan in the western part of India and it is popular for its unspoiled beaches, historic buildings as well as culture. This research recommends creating a comprehensive website on tourism that makes use of up to date technologies in order to promote tourism in Ratnagiri. The site will have features such as chatbot, car rental services, search for hidden gems, hotels straight map and zoom functionality, 360-degree views, detailed location maps and a solid rating system. In addition to this, the idea behind the proposed website is also to ensure community engagement by allowing users to share their experiences and recommendations through user generated content. With elements such as user reviews, ratings and comments incorporated into it, this website aims at establishing an active web community that revolves around tourism at Ratnagiri.

Smart Cradle for Baby

Avani A Shinde, Sanika Karade, Mrunal Jagtap, Omkar Potare, Beena Ballal

In the context of busy working parents, caring for infants becomes challenging. Traditional options involve entrusting care to elderly family members or hiring a caregiver, but parental anxieties persist. A Smart Cradle System addresses this by using sound sensors to detect crying, sending alerts to parents via GSM, and activating a swinging motion and soothing music. It also monitors environmental temperature and activates a fan if needed. Additionally, a web application provides reminders for vaccinations and medications.

Automatic medicine Dispenser using QR code

Chinmay Prashant Tawde,Beena Ballal, Makarand Nagvekar, mohammedahtesham shaikh, Vaishnavi Phatkare

This project introduces a QR code-enabled Medicine Vending Machine, powered by an Arduino Mega 2560. Utilizing components such as a DC Gear Motor, IR sensor, and Bluetooth Module, the system offers a user-friendly interface for dispensing medications. Users scan QR codes for precise and automated dispensing. The report details the design and implementation, emphasizing the system's potential to enhance medication accessibility and efficiency in healthcare.

GeoPrompt - A Mobile Applications Reminder System Based on Location

Krushana Namdev Mare, Yash Patil , Kapil Marathe, Rushikesh Lokhande

These days, location-based reminders are crucial in helping individuals maintain organization and order. Although they are still helpful, traditional paper reminders are not always as efficient as required in today's hectic environment. Mobile phone reminders are daily and mostly time-based; however, they are not very useful for tasks requiring a specific location. Reminders that function only when people are present are necessary because many tasks are only significant at certain times. Presenting "GeoPrompt - A Mobile Application Reminder System Based on Location," an Android application that automatically links tasks to specific locations using Google Maps and GPS. This state-of-the-art technology increases efficiency in our mobile-centric era by improving task management and location awareness.

Innovative Solutions for Healthcare Excellence:The Emergon Approach

Ragini Sharma

Emergon is a pioneering healthcare management software offering streamlined patient care and hospital operations. Patients benefit from secure access to health records, OTP verification, and QR code-based data sharing for providers. Prescription validation and document organization enhance safety and convenience. Medicine reminders and recommendations promote adherence and treatment optimization. Hardware components like a pulse meter and accident detector ensure vital sign monitoring and immediate accident alerts. Healthcare providers enjoy efficient patient management tools like QR code scanning and prescription writing, all backed by Firebase for real-time data synchronization. Emergon's integration of software and hardware marks a significant advancement in healthcare technology, promising improved patient care and safety.

Sentry Gun Using Face Recognition

Bhautik Tandel, Deepika Sharma

This research paper presents an innovative use of a sentry gun that has been equipped with advanced face recognition technology. The proposed system uses computer vision algorithms to identify and track individuals in real time. By leveraging facial recognition, the sentry gun enhances target discrimination, minimizing false positives. The system has demonstrated robust performance in various lighting conditions, ensuring reliable deployment in diverse environments. This innovative approach holds promise for enhancing security systems, offering an intelligent and efficient means of threat detection and response.

Exploring the Smart City Framework: A Comprehensive Review

Sujata T Bhairnallykar, Samiksha Lad, Harsha Atture, Yash Patil and Yash Sonawane

Smart cities are redefining urban development in the twenty-first century by fusing technology and data analytics. Their objectives include raising living standards, encouraging sustainable economic growth, and optimizing the effectiveness of the infrastructure. These cities integrate energy, transportation, health, education, and governance, among other disciplines, to create an intelligent and integrated urban environment. The integration of technology and data-driven solutions in smart cities has the potential to revolutionize urban living by providing personalized and conveniently available services. However, obstacles to implementation include concerns about data privacy, unequal access to technology, and collaboration between the public, private, and governmental sectors. The report offers a precise definition of "smart cities," highlighting the application of data analytics, digital, and communication technologies to create a service environment that is sustainable.

Autonomous Rover : Obstacle Avoidance and Environmental Monitoring

Mansi D. Pise, Jatin Charania , Kathir Shewag Nadar

The project "Autonomous Rover : Obstacle Avoidance And Environmental Monitoring" aims to design, develop,and implement a versatile autonomous rover equipped with obstacle avoidance and environmental monitoring functionalities. The autonomous rover integrates Arduino Unomicrocontrollers, motor drivers, ESP32 microcontrollers,and

DHT11 sensors to enable autonomous navigation and environmental sensing. Through the use of ultrasonic sensors, the rover autonomously detects obstacles in its path and navigates around them, ensuring safe and efficient movement in dynamic environments.In addition to obstacle avoidance, the rover incorporates environmental sensors to monitor parameters such as temperature and humidity.

Impact of Scrum Framework in Teams and Organizations - A Review

Nitya Sharma, Chandana Sreya Srungaram, Tejaswini Chavan

In today's rapidly evolving project landscape, agile methodologies like Scrum have gained significant adoption in many organizations. This paper reviews the latest trends of the Scrum methodology in project management. It explores the efficacy of Scrum in delivering successful projects, its influence on team cultural values, and the variations encountered in real-world practice. By analyzing existing research on the interaction between Scrum principles and practical application, this review provides an in-depth knowledge of Scrum's potential benefits and challenges, offering valuable insights for practitioners seeking to optimize Scrum implementation within their teams.

Design of an Engineered Landfill for VVCMC Dumping Ground

Rohan Shashikant Ahire , Prajakta Borse, Prerna kasar, Vishal Rathod, Puja kadam

This study aims to identify municipal solid waste (MSW) in a landfill in Vasai, India, and recommend appropriate management practices. Research suggests treating MSW, rich in organic matter and moisture, is feasible. On-site treatment facilities can replace 70% of waste, yielding substantial savings in collection and transportation costs. Design components include liner systems, leachate collection, and gas extraction, with a composite liner comprising clay and synthetic membranes to prevent groundwater contamination. Leachate collection involves pipes and pumps to manage liquid waste, while gas extraction captures methane emissions for energy use and reduces greenhouse gases. Efficient waste placement methods, such as constructing cells within the landfill, maximize space. Ongoing monitoring and. maintenance ensure safety

and regulatory compliance. Engineered landfill design is crucial for ecosystem and human health protection, aiming for sustainability

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UPI Payment System Among Generation Z in Navi Mumbai: A Behavioral Economic Analysis

Nidhi Anil Maurya, MAHESH NADIMINTY, Abhijeet Salunke

As the digital landscape develops, the rise of UPI-based payment apps has become a significant element affecting consumer behavior, particularly for tech-savvy Generation Z (Gen Z). This study examines the intricate relationship between UPI-based payment apps with a focus on Gen Z in Navi Mumbai, India. This study has conducted some descriptive research by using survey method to gather samples from this Gen-Z to predict the behavior economic analysis of whole Gen-Z. This study compares past and present economic behavior and demonstrates the awareness level of this generation. The study has examined consumer behavior of Gen Z to understand usage of different digital payment systems. Further the study has focused on UPI, highlighting the ease of use and security and safety features of the platform with consideration of the problems with cyber security as well.

Utilizing TVs as an Alternative to Big Screens and Digital Signage for Businesses

Siddiqui Farhana Zubair, Mohammad Faizan Madgaonwala,Osaid Khan, Mueez Mahimtule and; Nabeel Shaikh

This research paper delves into the feasibility and efficacy of utilizing televisions (TVs) as an alternative to big screens digital signage for businesses. While big-screen digital signage has been traditionally favoured for commercial displays by big companies, this paper explores how TVs offer a cost-effective, versatile, and accessible solution for businesses with limited resources. Through an in-depth analysis of factors such as cost-effectiveness, versatility, ease of installation, content flexibility, and accessibility, this paper aims to provide small business owners with valuable insights into the benefits and considerations associated with using TVs as a viable alternative for commercial

displays. Our Application Viewpoint Manager is a revolutionary software application that has the potential to emerge as a transformative force in this field.

Automated Guided Robotic Armed Vehicle (AGRAV)

Ryan Satish Fernandes, Paurash M Deboo, Sahil N Bhuta , Giridhar S Chavan

This paper presents a prototype of a model which consists of a robotic arm on top of an automated guided vehicle. The problem statement kept in mind was “How to improve material handling in industries while reducing repetitive work and human involvement in pick and place applications.” Placing a serial robotic arm on top of an AGV increases the mobility of the arm and it can facilitate the transport of objects. The design of the model was done on Fusion 360 software after considering the calculations of torque acting on the various links of the robotic arm along with the factor of safety of the model. This was followed by a finite element analysis of the model based on the stresses and deformations occurring in it. The model uses an Arduino microcontroller and sensors which will enable line-controlled motion and a Radio Frequency Identification (RFID) System for the arm to detect which objects to be handled at a time. A scaled-up version of this model can be implemented in industries.

Consensus in Multi-Agent System With Switching Topology

Amol G. Patil and Gautam Shah

This article discusses the mathematical framework of development of consensus algorithm for multi-agent systems using fixed and switching communication graphs. Consensus equation is derived in the discrete time domain using Perron Frobenius theory. Discrete time consensus equation depends upon the underlying structure of the communication graph. For achieving consensus two types of communication graphs are considered Fixed communication graph and Switching communication graph. Consensus values for switching communication graph and fixed communication graph is derived for random and fixed initial state information of agents. The consensus value for fixed and switching graph is average of their initial state information but time required for convergence of algorithm in case of switching graph is greater than fixed communication graph. This theoretical findings is illustrated via simulations

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Decoding Big Data: A Practical Comparison between Hadoop and Spark

Saunved S Palve, Ammar Abdulhussain, Om Sawant , Ayush Yadav, Aditya Kasar

This paper undertakes a thorough comparison between Apache Hadoop and Apache Spark, two crucial frameworks in the era of big data. Hadoop, with its MapReduce paradigm, offers scalable and fault-tolerant storage, while Spark, derived from Hadoop, introduces in memory processing to enhance speed and versatility. The study encompasses a detailed analysis of their features, strengths, and limitations, providing insights through experiments in statistical analysis, machine learning, and database operations. Our experiments demonstrate that Apache Spark achieves an impressive average speedup of 41.57% compared to Apache Hadoop in statistical and machine learning applications, highlighting its dominance in the realm of big data analytics. It is worth noting that Hadoop excels in database management systems, showcasing its strength in specific scenarios.

Network Command Analysis on Cloud and Edge Computing using CISCO Simulator

Bhoomi G Nelwade, Jahnvi Yadwad, Adeeb Kazi, Sairaj Patil

In This paper we look into edge and cloud structures and do a comparative analysis on them based on latency. Edge computing design processes the data physically near to the source, unlike cloud computing architectures which have remote data centers.It has been seen that edge computing architectures minimize latency over time as compared to cloud computing architectures which in contrast offers scalability for long term. Literature review and empirical analysis revealed that Edge may excel in latency reduction but faces issues in long-term scalability. However Cloud, excels in scalability and reducing cost but faces problems as when it comes to latency. Understanding about these structure differences is crucial in system design and it is recommended to design efficient systems that will fulfill all the applications important demands.

Energy Consumption Prediction using SARIMA model

Revati Birajdar, amita Gaurav, Humaira Parkar, Falak Peerkhan, Rakesh Suryawanshi

Accurate prediction of electricity consumption enables energy managers, utility companies, and businesses to effectively allocate energy resources. This, in turn, helps optimize energy generation and distribution, leading to cost savings and improved grid stability. Creating a power consumption prediction system is a valuable endeavor driven by various motivations. Such a system can have far-reaching benefits for individuals, businesses, and society as a whole. energy consumption prediction serves as a cornerstone in the pursuit of a sustainable energy future. By harnessing the power of advanced prediction models and data analytics, stakeholders can anticipate energy demand, optimize resource allocation, and accelerate the transition towards renewable energy sources. Addressing the challenges associated with energy consumption prediction requires collaborative efforts from researchers, policymakers, industry leaders, and consumers alike.

A Research Paper on Design of HVDC Boost converter

Prabhavati Prabhakar Sangar, Surekha Mahadik

This paper proposes the utilization of a High Voltage Direct Current (HVDC) boost converter for insect zapper applications. The HVDC boost converter is designed to efficiently step up low-voltage DC input to a high-voltage output suitable for insect zappers. The paper discusses the design considerations, operational principles, and performance analysis of the proposed HVDC boost converter. Experimental results demonstrate the feasibility and efficacy of employing HVDC boost converters in insect zapper devices, offering a promising solution for insect control in various settings.

Design and Develop Scalar Control for Solar Water Pumping System

Mahendra Sitaram Rane , Abhishek Shiwalkar, Rashmi G Kale

Standalone Solar Water Pumping System (SWPS) is the popular technique used for water irrigation in rural India, where grid connectivity is out of reach or restricted. The design and develop scalar control for the solar water pumping systems is discussed in this paper. It consists of a two-stage conversion, in which the first stage is the boost converter operated under the P&O MPPT algorithm. This algorithm extracts maximum power from solar during varying solar irradiation conditions. The second stage comprises an inverter to operate the induction motor. It is controlled by scalar control, which controls the stator frequency for controlling speed operation. The performance of scalar control in different modes of speed variation such as ramp and step variation is analyzed. The analysis is carried out in MATLAB Simulink and also validated in a hardware system.

A Novel Sensor based Method to Detect Theft in Modern Electrical System

Amey Revandkar, Chanchaldeep Singh, Abhishek Singh, Sumit Raj Soham Pal

Electricity is a vital resource that powers all aspects of modern life. Used for lighting, heating, cooling, communication, etc. The field of electricity is an important area of research that has the potential to benefit society by providing reliable and affordable energy to power all aspects of modern life. As the demand for electricity is growing, it's theft is also increasing across the country, the purpose of this paper is to design a

model to detect the theft and display a real-time usage by consumers. In this research , we took a common theft that is Hooking or bypassing and connecting directly to the source. The system is designed in such a way that it can detect theft and show the amount of energy consumed by the thief . This model tries to control the flight.

Investigation on Low Inductance Capacitor for Pulsed Power Application

Rachana Sadashiv Thatipamula, Sumit sharma

There are many different types of capacitors that are available today which are produced and designed for mounting on circuit boards or other electronic equipment and are referred to as electrolytic, or DC film capacitors. Capacitors of large sizes are useful in applications like AC drives, and power conditioning equipment. The large high voltage capacitors for 60 Hz circuits have usually been manufactured with paper or Polypropylene or some combination, with or without a liquid impregnant. Gradual development has taken place in all these fields over the past decade. This research paper is focused on defining capacitors with small volumes and with high energy storage for pulsed power applications. Capacitors for use in these applications use thin aluminium foil electrodes to conduct current through the capacitors.

Simulation of Auto Selection of Any Available Phase from 3 Phase Supply using PROTEUS

Bhavesh Sanjay Chavan, Sangita Nandurkar

In today's interconnected world, ensuring uninterrupted power supply is vital for maintaining operational efficiency and minimizing disruptions across various sectors. Three phase power systems in industrial and commercial settings, offer greater efficiency and power delivery compared to single-phase systems. However, outages in single phase system are most commonly occurred and can pose significant challenges. This leads into the concept of automatic phase selection, a technology designed to mitigate these challenges and ensure continuous power delivery to critical loads.

Automatic Transfer Switch for Renewable Energy sources

Pavan Mohan Naik, Surekha Mahadik

This research paper presents the design, development, and implementation of an Automatic Transfer Switch (ATS) tailored for renewable energy sources. With the increasing adoption of renewable energy technologies like solar, wind, and hydro power, there is a growing need for reliable and efficient ATS systems to seamlessly integrate these sources into existing electrical grids. The proposed ATS not only ensures uninterrupted power supply but also maximizes the utilization of renewable energy, contributing to sustainability and resilience in power distribution networks.

Proposed System: Linear Number Relation Quantum Computing Processor

Mayur Nilesh Barhate

This research paper presents the design and implementation of a dedicated quantum processor for efficiently evaluating custom-formulated mathematical formulas. The processor is specifically optimized to handle a set of predefined arithmetic and logical operations, providing a stable and efficient platform for computation. Unlike generic quantum processors that aim for versatility across various algorithms, this dedicated processor focuses on maximizing performance and accuracy for a specific set of operations The paper begins with an introduction to the motivation behind designing a dedicated quantum processor and the advantages it offers over using generic logic gates. The methodology section details the design principles, circuit architecture, and optimization techniques employed in creating the processor. Emphasis is placed on the customization of gate operations and circuit structure to align seamlessly with the formulated formulas, ensuring optimal performance.

Preparation of Adsorbent from various natural materials for removal of heavy metal ions from waste water: Critical review

Sandhya Baburao Gaikwad and Arvind Patil

Anthropogenic and industrial activities release heavy metal ions into the water. They may be poisonous or carcinogenic in nature and has serious risks to both aquatic environments and people. Heavy metal removal from wastewater is a severe issue as a

result. The adsorption method is advantageous for removing heavy metals from wastewater due to its accessibility, affordability and eco-friendliness. High removal capacity of commercial adsorbents and bio adsorbents are both utilized to remove heavy metals from wastewater. This review article intends to gather erratically collect data on the many adsorbents used for heavy metal removal and to provide details on the commercially available and natural bio adsorbents utilized in particular for the removal of copper, lead, Nickel and cadmium

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Critical review on assessment of seasonal variation in water quality of Godavari River in Nashik city

Sanjay Appasaheb Antre , Ashok Datir and Pravin Nalawade

Study on Critical review on seasonal variation in water quality of Godavari river which flows in Nashik city. The standard methods have been used to analyze the physico-chemical biological parameters. Due to a variety of human activities, particularly home, industrial, and religious waste water connect without treatment in river quality of surface water is diminishing. The primary goal of the research is to analyze seasonal variation in water quality and develop corrective actions to lessen future degradation and its effects.. The selection of the water quality parameters, the creation of sub-indices for each parameter, the computation of the parameter weighting values, and the aggregation of sub-indices to calculate the overall water quality index are the four processes that WQI models typically involve assess the water quality of rivers, lakes, reservoirs, and estuaries

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Recent developments and evaluations of green hydrogen generating technology

Sanjeevani B Murari and Dipali Patil

The public, government, and business community have all expressed strong support for hydrogen energy, establishing it as a key fuel source for the future. The high cost of manufacturing clean hydrogen and the sluggish growth of the infrastructure are two major obstacles to its commercial realization. The many methods of producing hydrogen are categorized based on color codes; green hydrogen, which is generated from

sustainable sources like solar and wind power, is the most preferred choice. It is anticipated that demand for green hydrogen would soar in a number of industries. The cost, environmental impact, and technological maturity of the main hydrogen production systems are all thoroughly evaluated in this review. The enhanced effectiveness, cost-competitiveness, and scalability of green hydrogen generation systems are confirmed by recent data. Several new technologies for producing hydrogen, with an emphasis on their benefits, drawbacks, and technological preparedness.

Vertical Axis Wind Mill

Puja Sutar, Jai Pradeep Narvekar, Umesh Shingate, Aditya Dhembare, Siddhesh More

An overview of a vertical axis wind turbine is provided in this publication. The behavior of the Vertical Axis Wind Turbine (VAWT), current technology, fresh insights from modeling studies, and the trajectory of VAWTs in the future were all examined. It has been noted that VAWT is essential to the current energy issue. Because of the current non-renewable energy dilemma, it is conceivable that humans may live in a world powered by solar and wind energy. One possible renewable energy source has been found as wind energy.Despite the fact that full life cycle accounting demonstrates that vertical axis wind turbines (VAWTs) are superior to horizontal axis wind turbines (HAWTs) in terms of cost or materials, VAWTs currently do not generate enough power because of a number of issues that are covered in this study. By including the deflector system that directs the wind toward the turbine blades, the efficiencies of drag-driven VAWT (Savonius type), lift-driven VAWT (Darrieus type)

Examining the Gamma Radiation Shielding Effectiveness of Er2O3-Doped Barium Titanate Bismuthate Glass System

Seema Thakur

The Er2O3-doped barium titanate bismuthate glass system was created using a conventional melt-quenching technique. To assess their effectiveness in radiation shielding, simulations were conducted using the user-friendly Phy-X/PSD software. Various shielding parameters including Mass Attenuation Coefficient (MAC), Linear Attenuation Coefficient (LAC), Half Value Layer (HVL), Tenth Value Layer (TVL), Mean Free Path (MFP), among others, were computed for these glasses. The sample

containing 3% Er2O3 concentration exhibited the highest radiation shielding efficiency. A comparison was made between the shielding parameters of the glass and commercially available concrete types such as ordinary, serpentine, barite, and chromite concretes. The results suggest promising potential for the glasses in radiation shielding applications.

Envisioned 6G Security and privacy challenges and Issues: A Comparative Analysis

Darakshan Javed Ansari

Abstract— 6G networks architecture constitutes multiple layers i.e. infrastructure layers ,network service layer, application layer as each layer applicable for different function and services so this paper concern with the required layer function and their area of work as applications and network services are hosted by the infrastructure layer, which also supplies the necessary hardware e.g. immersive smart city. This paper presents the detail constituents of each layer of 6G architecture also the concepts of key enabler which supports network service layer with high performance cloud network supports service layer to manage the massive amount of stored and data to complicated network structures present obstacles for AI-based learning and training procedures. This paper also presents the security and privacy mechanism for 6G technology correlate with the layer architecture and security performance improvement compare to 5G

An improvised ML technique for intrusion detection in Delay Tolerant Network

Rajashri Chaudhari, Manoj M Deshpande

Delay tolerant networks (DTNs) are intended for effective communication between nodes over huge distances and they are resourceful in extreme conditions. The delay in the transfer of data and unstable connectivity of nodes depends on effective coordination while the possibility of misbehavior by relay nodes increases network vulnerability to various types of network attacks like packet dropping attacks, flooded

attacks, DoS attacks, gray hole attacks, and black hole attack disturbing the network connectivity. The study proposes the detection of such attacks over DTN with an efficient machine learning (ML) algorithm. The voting technique is used to enhance the performance of detection. The network attacks are detected with significant accuracy and efficient secure communication is established in the network. Furthermore, the network simulator NS2 is employed to simulate the prevention of malicious attacks in the proposed system.

Arduino Based Railway Crossing System and Accident Prevention

Pushkar Bhagwan Salve, Shivansh Asthana, Vinayak Phondke, Hartik Patil , Shilpa M. Kapse

The existing manual operation of manned level crossings in India poses serious risks, causing accidents and loss of life. To address this, an automated system is proposed. Unlike existing single-line automated crossings, this system integrates with railway signaling. As a train passes specific signals, connected buzzers activate, alerting pedestrians. Subsequent signals deactivate the buzzers, and gates begin closing. Only after the train clears the crossing and reaching the final signal does the gates open. Utilising an Arduino UNO, this fully automated setup eliminates the need for manpower, potentially avoiding tragic accidents and safeguarding lives and railway assets.

Performance Enhancement of Microstrip Patch Antenna using Metasurface

Anshuman Singh, Abhay Jha , Shilpee Patil, Anil Pandey, Apurva Jaiswal, Chandrasen Chaubey

Performance enhancement of microstrip patch antenna using metasurface provides a thorough analysis of how a metasurface integration technique might improve the performance of a microstrip patch antenna. The 4x4 array of square components metasurface measuring 51.6 × 51.6 × 3.1016 mm is merged with the microstrip patch antenna, which has dimensions A=13.5 mm, B=12 mm, and C=1.2 mm. The radiation box dimensions (100 mm × 100 mm × 55 mm) and substrate materials (Taconic 26 D Material and foam) are among the characteristics that are taken into account. The results show that the suggested integration is a useful way to improve the performance of microstrip patch antenna, since they show notable increases in bandwidth and gain throughout a variety of frequency ranges.

Audio spy and GPS tracker device

Savita Bhosale , Prathamesh Gijare, Sudhanshu Jadhav and Sharaddha Mishra

This is Audio Spy and GPS (Global Positioning System) Tracker Device and it can act like an audio spy gadget where you can listen to conversations secretly over cellular network, this can also act as an SOS (Save our Souls) button whereby the just press of a button you can share your current location via SMS and also it will make a call on that SOS number and can track the location of this A9G board by just sending one SMS. By sending an SMS this board will return a Google Maps link with its current location in it. We have designed an efficient system for automobiles. We have used modern techniques of GPS and GSM (Global System for Mobile Communication) to get perfect output as these two systems are the modern and most developed products in this field. In case of theft, this system would provide effective tracking of vehicle through which owner can track the vehicle easily as it instantly prompts user about theft after very next second of theft.

Suraksha Sathi (SoS Application)

Prathmesh Aghao, Kartik S Bende, Tejas Prakash Thakare, Savani Mahendra Balkawade

In the era of growing connectivity, personal safety remains a paramount concern. Suraksha Sathi, a mobile application, tackles this concern by offering a multifaceted solution that leverages location-based services, real-time communication, and efficient emergency response coordination. At its core, the SOS (Save Our Souls) functionality utilizes advanced geolocation technology to pinpoint user location accurately, facilitating swift response from both individuals and emergency services. Suraksha Sathi is built using Flutter, a cross-platform development framework, and leverages the Dart programming language. Google Maps and APIs provide location services, while REST APIs facilitate data exchange. Visual Studio serves as the development environment, and Firebase, along with Firestore, manages user accounts and data securely. Notably, the application functions on both Android and iOS platforms, maximizing accessibility for a broader user base.

Investigation on Various Multi-Walled Carbon Nanotubes Reinforced Poly Aryl Ether Ketone Composites

Pravin Nana Jadhav, Rai Sahai

The current investigation focuses on evaluating the influence of Multiwall Carbon Nanotube (MWCNT), carboxyl and amine functionalized MWCNT on the mechanical properties of Poly Aryl Ether Ketone (PAEK) polymer composites. Incorporating nanomaterials into polymer matrices has gained significant attention for their potential to enhance material performance. This research examines various concentrations of MWCNT and functionalized MWCNT at 0.25, 0.5, and 0.75 weight percentages. Composites were fabricated using a twin-screw extruder via the melt compounding method and then prepared through injection molding. The principal findings are the improvements observed with amine functionalized MWCNT. These results underscore the potential of functionalized MWCNTs in augmenting the mechanical properties of PAEK polymer composites.

Enhancing Educational Insights: AcademicIQ A Full-Stack Approach to Identifying and Supporting Struggling Students

Anuj Tiwari, Rishabh Singh

This research introduces "AcademicIQ," a cutting-edge full-stack solution that employs a blend of machine learning, powered by Python and Flask, to redefine educational intervention strategies. Utilizing existing SVM and Gradient Boosting Algorithm models, AcademicIQ provides educators with a comprehensive toolkit for identifying struggling students and implementing timely interventions. The backend, powered by Node.js and Express.js, ensures seamless operations and efficient API handling. AcademicIQ's predictive capabilities are further enriched by the incorporation of a Gradient Boosting Algorithm, allowing for a more nuanced analysis of student performance data. JWT token-based authentication maintains security, while MongoDB serves as the reliable database.

Node Classification in Website Fingerprinting using Graph Neural Networks

Suaz Hanif Malgundkar, Rahul Babar Kage, Priyanshu Chilkoti, Adheesh Sreedharan, Prof. K.S Suresh Babu

Website fingerprinting aims to identify the specific webpages in encrypted traffic by observing patterns of traffic traces. The existing system mainly focuses on website homepage fingerprinting and it is more difficult to identify different webpages within the same website because the traffic traces are very similar. In our project, we propose Graph Attention Pooling Network for fine-grained WF(GAP-WF). We will construct the trace graph according to the flow sequence in webpage loading and use a GNN based model to better learn the features of nodes(intra-flow) and structures(inter-flow). There may be different flows having different effects on classification. For this, we will utilize Graph Attention Network to pay attention to the more useful nodes. The algorithms that will be used are Support Vector Machine(SVM) and Random Forest with the contribution using K-Nearest Neighbor(KNN). Also, we use four datasets comprising of WEB100, APPLE60, CDC30, PAGE100 to evaluate the performance of GAP-WF.

Car Crash Detection and Assistance

Shritej Magare, Meet Limbani, Bhargav Rane, Sahil Sharma

Our paper aims to address the critical issue of individuals being left without assistance in the event of an accident while riding their vehicle. The GPS Receiver identifies the vehicle's direction, while the SMS containing the emergency text is sent. The system can detect severe accidents using a Impact sensor. The information is sent by the GSM module, which transmits the data, including the victim's precise location, to the assigned emergency/personal contact. This System offers a professional and innovative solution to a significant problem, ensuring the safety of individuals.

Automatic Vehicle Accident Detection and Reporting With Blackbox

Nidhi Bharati, Aditya Joshi, Harshad Joshi, Niraj Patil, Prof. Pradnya S. Narnaware

Modern automobiles are increasingly incorporating electrical and electronic components to enhance operational efficiency. A recent innovation involved constructing a vehicle with an analog interface to display various statuses such as speed, fuel level, and

engine temperature. This project introduces the design and execution of a digital driving system for semi-autonomous vehicles, aimed at refining the driver- vehicle interface and integrating black box functionalities. An Arduino-based data acquisition system is employed, utilizing ADC to convert control data from analog to digital, which is then displayed on an LCD. For communication, CAN-based embedded networking is utilized for its effective data transmission capabilities. The system also gathers feedback on vehicle conditions like speed and engine temperature, all managed by a primary controller. Moreover, the unit includes GPS and GSM for additional functions. The project amalgamates solutions from multiple systems into a unified system with enhanced features. It is designed to investigate the causes of vehicular accidents and mitigate the resultant loss of life and property. By objectively recording vehicle activities, it facilitates accident analysis and equips the vehicle with an intelligent dashboard. Furthermore, the system boosts security through anti-theft features, remote tracking, and monitoring capabilities.

Automatic Power Factor Controller Using LORA Wireless Communication

Ritesh Chandrashekar Talashilkar, Rusikesh dadaso Umape, Rahul Dattu Khandare, Prerana Sachin Kamble, Prof. Atul A Kale

The proposed device automatically corrects the power factor without any human presence. It detects the power factor value, if the power factor goes below 0.9(lagging) during peak hours it automatically connects capacitor banks to improve it. The capacitor values and current magnitude varies according to the application. Proposed model is to maintain the power factor nearer to 0.9 and this values which helps to increase the efficiency of the system. An automatic power factor controller monitors the power factor, which is the result of the ratio of real and apparent power. We tend to establish the power factor close to unity. The automatic power factor controller is used in electrical systems to improve the power factor in case of falls below a determined level.

Movie Recommendation System

Vipulkumar Gupta, Nisraga Lande Mihir Gosavi, Purva Khandagale,Suriya Kala,Dipali Shende

Recommendation system is system which is widely used in this modern generalized world. Recommendation can be also considered as a guide which recommends or guides you to select the most suitable or the best global optimal solution of a category. Recommendation is not only used to not only get the best optimal option but also for the variety of option to choose from. As we can see the world is relying on the technology similarly billions of people rely on the recommendation. Recommendation is not only recommended by the technology or any certain software but actually if research on the basis of the logic or a simple common sense we will get to know that recommendation traverse in our surrounding we generally give are opinions as a recommendation to other for them to choose the optimal choice this held from even the ancient times.

AC Patil

College *of* Engineering

Jawahar Education Society's

A. C. Patil College of Engineering

Plot no.17, Sector-4, Kharghar Navi Mumbai,
Maharashtra 410 210 | India.

Ph.: +91-22-27747521/22/23/24, Fax: +91-22-27745732

Website: www.acpce.org

Conference Website: www.ncatm2016.org

Email: principal@acpce.ac.in