Conference Details: 2024-2025

S. No	Conference (National/ International)	Name of the Coordinator/Convener	Name of the Conference	Dates of the conference	Venue	Sponsored By
1	National	Dr. C. Sasikala Dr. P. Dileep Kumar Reddy	National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)	11th and 12th November 2024	Narasimha Reddy Engineering College, Secundarabad, Telangana	JAKKULA EDUCATIONAL SOCIETY

Dean-R&D **Principal- NRCM**

NATIONAL CONFERENCE ON RECENT TRENDS IN ENGINEERING AND TECHNOLOGY, MANAGEMENT AND SCIENCES (NCRTEMS-2024)

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11th & 12th November 2024

Editors

Dr. C. Sasikala, Professor, EEE HOD

Dr. P. Dileep Kumar Reddy, Professor, CSE

Prof. Pavithra Neelam, ECE HoD

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NATIONAL CONFERENCE
ON
RECENT TRENDS IN ENGINEERING AND TECHNOLOGY, MANAGEMENT AND SCIENCES
(NCRTEMS-2024)

11th & 12th November 2024

Organized by

NARSIMHA REDDY ENGINEERING COLLEGE

Editors

Dr. C. Sasikala, Professor, EEE HOD
Dr. P. Dileep Kumar Reddy, Professor, CSE
Prof. Pavithra Neelam, ECE HoD

your roots to success...

NARSIMHA REDDY ENGINEERING COLLEGE
(UGC - AUTONOMOUS INSTITUTION)

Accredited by NBA & NAAC with 'A' Grade, Approved by AICTE & Permanently Affiliated to JNTUH
Maisammaguda (V), Kompally, Secundrabad-500100, Telangana State, India

ABOUT THE COLLEGE

Narsimha Reddy Engineering College (NRCM) is an **Autonomous** Technical institute which is promoted & managed under the inspiring & dynamic Chairmanship of **Sri. J. Narsimha Reddy** and a fleet of dedicated members. This is the first institution belonging to **JAKKULA EDUCATIONAL SOCIETY** and was established in 2007 to serve the people in backward region. This institution is developed strictly in accordance with the provisions of governing rules & regulations of the approving bodies.

NRCM is permanently affiliated to Jawaharlal Nehru Technological University, Hyderabad and is approved by All India Council for Technical Education (AICTE), New Delhi. Currently, the Institute is Offering B.Tech Programs in Computer Science and Engineering, CSE (Artificial Intelligence & Machine Learning), CSE (Cyber Security), CSE (Data Science), Information Technology, Electronics and Communication Engineering, Electrical and Electronics Engineering, Mechanical Engineering, Civil Engineering and Master of Business Administration. The college is one among the reputed institutes with well qualified and highly experienced faculty. The institution started with baby steps, on the path heading towards excellence in offering technical education, crossing all the challenges and accomplishing the required criteria .NRCM has successfully accredited by NAAC with 'A' Grade and all the UG programme are accredited by NBA. The NRCM recognized by UGC Under 12B and 2(f) and got the Autonomous status in the year 2020.

NRCM is equipped with excellent infrastructure to provide the strong foundation and enable the students to fulfil their aspirations and to become competent Engineering Professionals. The institute boasts state-of-the-art infrastructure and is spread across a sprawling campus. The beautiful building comprises of four blocks, with new-fangled laboratories, class rooms, seminar halls, and play ground. The campus is ornamented with lush greenery, which enhances environmental cognition among the students.

ABOUT THE CONFERENCE

The primary objective of the **National Conference on Recent Trends in Engineering, Technology, Management and Sciences (NCRTEMS-2024)** is to provide a fascinating platform and intensive learning experience from industry delegates, researchers and academia from various universities and institutions for shaping the future technology and engineering professions in order to improve the social upliftment. Additionally, it intends to increase research efforts and raise awareness of different problems in and around the society with public wellness solutions. The conference aims to promote quality research by focusing attention on the recent outstanding achievements, future trends and requirements. It will bring together researchers and engineers from academic and research institutions to exchange insights, experiences and explore new opportunities in the interconnected field of Engineering and Technology, Management and Sciences.

The purpose of NCRTEMS-2024 is to bring together the top academic scientists, researchers, industrialists and research scholars from all over the world under one roof in order to exchange insights and research findings during brainstorming sessions on current trends in Engineering and Technology, Management and Sciences.. Additionally, participants have the scope to learn about many viewpoints on the topic, which promotes learning new technologies. It will offer a forum for discussing ideas and perceptions of a certain issue and potential solutions. Additionally, it provides a novel perspective on how to approach the issues. It will offer a route for developing a networking and paying attention to others can be effective methods for advancing participant's career.

NCRTEMS-2024 is the perfect way to stay up-to-date with industry developments. It provides great way to not only get new ideas, but to recognize paths that other processes or approaches can be created with your own. One of the primary objectives of NCRTEMS-2024 is providing information and becoming expertise on the latest and most recent advancements that have taken place across the world. NCRTEMS-2024 also provides possibly the best way for a researcher, engineer, academic or scholar to go about getting their research work, findings, and outcomes known to the world. It creates opportunities that allow them to collaborate of the most promising research ventures and scientific experimentation pursuits in their fields that are being undertaken by influential members of the global academic community, prominent professionals globally recognized as masterminds and experts in their respective domains. NCRTEMS-2024 will create a platform to meet people with similar interests and who, most likely, have a similar outlook. It is forming close-knit connections and bonds with one's peers as well as relevant domain authorities is key to both their professional success as well as to the advancement of their work projects and ventures.

Message from Chairman

Sri. J. Narsimha Reddy,
Chief Patron,
Founder and Chairman, NRCM.

Hearty congratulations, **to organizing committee** on successful planning and conduction of Two Days "**National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)"** on **11th and 12th November 2024.**

I appreciate all the efforts put in by the Director, Principal, Conference Chair, Convenor, Co-Convenor, Organizing Chair and Organising committee for conducting this event and bringing together the leading researchers, practitioners and policy makers working in various important fields of Science, Technology and Engineering. I would like to acknowledge all the authors for their participation and excellent contributions.

I am confident that the deliberations and exchange of ideas during the conference would contribute towards enhanced use of advanced technologies in improving the quality of services to the society at large.

Sri. J. Narsimha Reddy

Founder and Chairman,NRCM

Message from Secretary

Sri. J. Trishul Reddy,
Chief Patron,
Secretary, NRCM.

I am excellent to know that Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" on 11th and 12th November 2024.

I strongly believe that, quality education is the fundamental requirement for the steady growth of economy and improvement of living standards. High quality technical education, supported by novel engineering skills in the form of conducting conferences and seminars should be the order of the day. Narsimha Reddy Engineering College is exactly practicing the same in improving the quality education which serves to the society at large.

I extended my best wishes to all participants, invited delegates and organizing committee for a grand success of the **NCRTEMS-2024.**

Sri. J. Trishul Reddy

Secretary,NRCM

Message from Treasurer

Sri. J. Thrilok Reddy,
Chief Patron,
Treasurer, NRCM.

I am very happy to know that Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" on 11th and 12th November 2024.

I firmly believe that quality education is essential for the consistent economic growth and the advancement of living standards. Emphasizing high-quality technical education, complemented by the development of innovative engineering skills through conferences and seminars, should be a top priority. Narsimha Reddy Engineering College exemplifies this commitment to enhancing the quality of education and benefiting the wider society

I want to extend my sincerest wishes to all participants, invited delegates, and organizers for a highly successful **NCRTEMS-2024**.

Sri. J. Thrilok Reddy

Treasurer, NRCM

Message from Director

Dr.A.Mohan,
Patron,
Director, NRCM.

It gives me immense pleasure to note that Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" on 11th and 12th November 2024, in Narsimha Reddy Engineering College (NRCM), Hyderabad, Telangana, India. Many authors are participating in this conference from various reputed universities, institutions and I am thankful to them for exchanging their ideas through this platform.

I convey special thanks to NRCM Management, Faculty, Staff and Students for their wonderful support and also I am very much thankful to each and every person from NRCM who are involved in organizing this conference successfully.

Best of luck and wish you a great success in your research field.

Dr. A. Mohan

Director,NRCM

Message from Principal

Dr. R Lokanadham,
Patron,
Principal, NRCM.

It is my pleasure to note that our institution is organizing a Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" on 11th and 12th November 2024,

Technical institutions should give important to the innovation and research in parallel with academics, engineering and researchers should strive for the problems of modern society.

I wish this national conference will provide a right platform to academicians, research scientists and professionals of various fields to present their development experiences.

I extend warm welcome to all the dignitaries and delegates attending this National Conference and wish the NCRTEMS-2024 a grand success.

Dr.R Lokanadham

Principal, NRCM

Message from Vice Principal

Dr. Purushothamprasad Kalisetti,
Co-Patron
NRCM.

It gives me immense pleasure that the NRCM is organizing a Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" on 11th and 12th November 2024.The conference is targeted towards researchers, practitioners, professionals, educators and students to share their experience, innovative ideas, issues, recent trends and future directions in Engineering and Technology, Management and Sciences.

I extend my best wishes to all the organizers, committee member for the excellent efforts made by them in the making the event to reach the expectations. I congratulate all the participants for their enthusiastic participation and I extend my thanks for the support in conference.

Dr. Purushothamprasad Kalisetti

Vice Principal

Message from Convener

Dr. C. Sasikala,
Convener

I believe in promoting events to be organized will opens research and innovation avenues for students and researchers. This Conference is one such step towards motivating students and researchers. The conference greatly encourages graduate and postgraduate students, research scholars and faculty to present innovative ideas and latest discoveries in the field of Engineering, Management and Sciences.

I take this opportunity to extend my best wishes to all the participants of this conference for their future endeavours.

Dr. C. Sasikala

Convener

Message from Organizing Secretary

Prof. Pavithra Neelam
Organizing Secretary

Research is a never ending process; the main inputs to the research are contributed by thorough knowledge in the particular field through immense learning. Immense learning can be brought by attending various forums related to the subject. Hence it becomes essential to conduct conferences of this sort to contribute to the field of research and technology. To keep the knowledge shared and updated its essential to bring the students, faculty members and researchers from various institutes, national wide into a common forum.

I hope this conference brings this to reality by uniting participants from different places to present their research works and exchange their ideas. I wish all the participants to have a good learning experience throughout the conference.

It is my privilege to convey my sincere thanks to the management and director for encouraging and supporting in the conduction of this conference.

Pavithra Neelam

Organizing Secretary

Message from Co-Convenor

Dr. P. Dileep Kumar Reddy,
Co-Convenor & Professor,
NRCM

I am glad to mention that the **Prestigious Two** Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)"is being organized on 11th and 12th November 2024, at Narsimha Reddy Engineering College (NRCM), Hyderabad, Telangana, India. As the Co-Convener, it is my pleasure to extend sincere thanks to participants form reputed institutions industry who are presenting their work in the conference.

I convey special thanks to Session chairs, Principal of the various institution for their wonderful support in this success and also, I am very much thankful to each and every person from NRCM faculty, who are involved in this great success.

Best of luck and wish you a great success in your research field.

Dr. P. Dileep Kumar Reddy
Co-Convenor & Professor

Message from Prof. R B V Subrahmanyam

Prof. R B V Subrahmanyam
Professor
Department of Computer Science and Engineering
NIT Warangal

I would like to congratulate Narsimha Reddy Engineering College (NRCM), Hyderabad, on hosting the much awaited Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)"is being organized on 11th and 12th November 2024.

This conference play a crucial role in advancing the field by bringing together experts, professionals, and enthusiasts to share knowledge, discuss emerging threats, and showcase cutting-edge technologies. They provide invaluable opportunities for networking, fostering collaborations that can lead to innovative solutions and best practices.

I hope this conference brings this to reality by uniting participants from different places to present their research works and exchange their ideas. I wish all the participants to have a good learning experience throughout the conference.

Prof. R B V Subrahmanyam
Professor
NIT Warangal

Message from Prof. C. Shoba Bindu

Dr.C.Shoba Bindu

Professor

Department of Computer Science and Engineering, JNTUA University

I Congratulations to Narsimha Reddy Engineering College (NRCM), Hyderabad, on hosting the highly anticipated Two-Days National Conference:“National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)” Scheduled for November 11-12, 2024."

I deeply appreciate the immense efforts invested in conducting this significant event and bringing together the leading researchers, practitioners, and policymakers from various critical fields of Engineering, Management and Sciences. I would like to acknowledge and commend all the authors for their participation and excellent contributions.

I am confident that the deliberations and exchange of ideas during the conference will significantly enhance the use of advanced technologies, thereby improving the quality of services to society at large.

Dr. C. Shoba Bindu
Professor
JNTUA University

Message from Prof. C. V. NARASIMHULU

Prof. C. V. NARASIMHULU

Principal,

Chaitanya Bharathi Institute of Technology (CBIT), Hyderabad

I extend my heartfelt congratulations to the Narsimha Reddy Engineering College (NRCM), Hyderabad; Two Days "National Conference on Recent Trends in Engineering and Technology, Management and Sciences (NCRTEMS-2024)" is being organized on 11th and 12th November 2024.

I deeply appreciate the efforts invested in organizing this event, which brings together leading researchers, practitioners, and policymakers from various vital fields of Engineering, Management and Sciences. I would also like to acknowledge and thank all the authors for their participation and outstanding contributions.

I am confident that the deliberations and exchange of ideas during the conference will significantly enhance the use of advanced technologies, thereby improving the quality of services for society at large.

Prof. C. V. NARASIMHULU

Principal, CBIT, Hyderabad

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AN EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH FLY ASH AND RICE HUSK ASH

D. Sai Shashank[1] G. Bharath Goud[2] Md. Abdul Kalam[3] Abdul Omer[4]
[1,2,3,4] Department of Civil Engineering,
[1,2,3,4] Narsimha Reddy Engineering College, Hyderabad, India

Abstract:

Low-cost construction materials like fly ash and rice husk ash, play a crucial role in addressing affordability and sustainability challenges in the construction industry. This abstract explores various types of low-cost materials that have gained prominence due to their economic and environmental benefits. Materials such as stabilized earth blocks, bamboo, recycled materials, and alternative industrial by-products are examined for their suitability in construction. This study explores the use of low-cost construction materials in the development of affordable housing, aiming to address the graving need for building that meet cost-effective and sustainable Solutions. They are not only evaluating theoretical economical but also essential structural, thermal, and aesthetic requirements. The investigation includes review of an extensive alternative materials such as fly ash, rice husk ash. Each material properties, including strength, durability, thermal insulation, and environmental impact, are analyzed through laboratory testing and field case studies. Low cost construction materials can significantly contribute to affordable housing initiatives without compromising quality or sustainability. In this paper, the detailed exploratory examination must be finished to concentrate on the impact of halfway substitution of concrete by Fly Ash and Rice Husk Ash in extent beginning from 30% Fly Ash and 0% Rice Husk Ash combining as one in concrete by supplanting of concrete with the continuous increment of Rice Husk Ash by 5% and all the while gradual decrease of Fly Ash by 5%. Last proportions are taken 15% Fly Ash and 15% Rice Husk Ash. The work presented in this paper reports is the effects on the behavior of concrete produced from cement by combining of Fly Ash and Rice Husk Ash and of Coarse Aggregate with Steel slag at different proportions on the mechanical properties of concrete such as compressive strength and split tensile strength.

Keyword: -Low-cost construction materials, Fly ash, Rice husk ash, Affordable housing, Sustainable construction, Stabilized earth blocks, Bamboo, Recycled materials.

DESIGN AND ANALYSIS OF G+9 RESIDENTIAL BUILDING USING STAAD PRO

Adepu Ramcharan[1], GedalaVenkat Ramana[2], PeddagollaBhanu Prakash[3], Mohammed Riyaz[4]
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Abstract:

This project focuses on the design and analysis of a G+9 (Ground plus nine floors) residential building using STAAD Pro, a structural analysis and design software widely used in the civil engineering industry. The primary objective of the project is to ensure that the structure complies with safety standards and meets the requirements for load-bearing capacity, stability, and durability, considering the various loads like dead loads, live loads, wind loads, and seismic forces. By leveraging STAAD Pro, the building will be modeled and simulated to check its performance under different conditions. In the process, the design will follow IS codes, particularly IS 456:2000 for reinforced concrete structures, and IS 875 for load considerations. The structural elements, including beams, columns, slabs, and foundations, will be analyzed to assess their behavior under applied loads. The analysis will include determining shear forces, bending moments, and deflections, and verifying if the sections selected are adequate for the structure's overall stability. Additionally, the project will explore the most economical design, optimizing material use while maintaining safety. In the final stage of the project, we will carry out a detailed design of all structural elements using STAAD Pro, ensuring the building can withstand all applicable loads and environmental factors. The outcomes will be validated through manual calculations for critical sections to cross-check the software results. Finally, a detailed report will be prepared, documenting the design approach, analysis, and results, and offering recommendations for practical implementation.

Keywords: STAAD Pro, structural analysis, load-bearing capacity, stability, durability, structural elements, environmental factors, practical implementation.

A CASE STUDY ON HIGH RAISED BUILDING - SHANKARPALLY, RANGA REDDY

Adunurivihaan Sai[1], Mesala jyosna[2], Kasthuri ramavath[3], Penta yasthwanth[4]
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[1,2,3,4] Narsimha Reddy Engineering College, Hyderabad, India

Abstract:

Recent trend of growth in population and scarcity of land has evolved an era of modern urbanization which indeed has led to the vertical growth of buildings and gave us the new trend setting structures named as High-Rise Structures or Multi-Storeyed Structures. These structures are need of time due to scarceness of land, greater demand for business and residential space, economical emergence, technical advancements, innovations in structural systems and desire for aesthetics in urban area. Lateral load effects on high rise buildings are quite significant and increase rapidly with increase in height. In high rise structures, the behaviour of the structure is greatly influenced by the type of lateral system provided and selection of appropriate. The selection is dependent on many aspects such as structural behaviour of the system economic feasibility and availability of materials. Few of the lateral structural systems are Shear wall system, Braced fraune system. Framed tube system.Tube in tube system, Bundled tube system. The lateral structural systems give the structure the stiffness, which would considerably decrease the Internal displacements. In the present Work Shear-wall system, framed tube system and tube-in-tube systems are considered for 21, 41 and 61 story structures. The analysis has been carried out using software Etabs Earthquake Load is given in form of Spectrum load referring to IS 1893-2002 and Wind load is given as per norms of IS 875-Part III 1987.

Keyword:-High rise building, Multi-Storeyed Structures, Earthquake Load.

A STUDY ON BEHAVIOUR OF NANO SILICA ON MECHANICAL PROPERTIES OF TERNARY BLENDED CONCRETE

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[1,2,3,4] Department of Civil Engineering,
[1,2,3,4] Narsimha Reddy Engineering College, Hyderabad, India.

Abstract:

The incorporation of supplementary cementitious materials (SCMs) and alternative fine aggregates in concrete production has gained significant attention in recent years. This study investigates the mechanical properties of ternary blended concrete incorporating nano silica, M sand, and fly ash as partial replacements for cement and fine aggregate. The experimental program involves the preparation of various concrete mixtures with varying proportions of nano silica, M sand, and fly ash. The control mixture consists of ordinary Portland cement (OPC) as the sole binder and natural river sand as the fine aggregate. The test specimens are subjected to compressive strength, flexural strength, and Split tensile strength tests to evaluate the mechanical performance. The findings of this study demonstrate the potential of nano silica in enhancing the mechanical properties of ternary blended concrete. The combination of nanosilica with SCMs offers a promising avenue for developing sustainable and high-performance concrete. Further research is warranted to explore the optimal proportions, curing conditions, and long-term performance of ternary blended concrete incorporating nano silica. Preliminary results indicate that the addition of nano silica enhances the early age strength development of concrete due to its pozzolanic reactivity and nucleation effect on cement hydration. The utilization of M sand as a replacement for natural river sand shows promising results in terms of workability and strength properties.

Keywords: Ternary blended concrete, nano silica, M sand, fly ash, supplementary cementitious materials, fine aggregate, mechanical properties.

EXPERIMENTAL INVESTIGATION ON SELF CURING CONCRETE USING CALCIUM CHLORIDE FOR M_{30} GRADE CONCRETE

Yerrabelly Shiva Krishna[1], Amgothu Rambau[2], Arabati Shivakumar[3], M.R.T.Manikanta[4], Kamalshetty Goutham[5]
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Abstract:

This experiment investigates the feasibility and effectiveness of using calcium chloride as a self-curing agent in M30 grade concrete. Self-curing concrete aims to maintain adequate moisture within the concrete matrix during hydration, thereby enhancing strength development, reducing shrinkage, and improving durability without relying on traditional external curing methods. The experimental investigation involved preparing M30 grade concrete mixes with varying concentrations of calcium chloride as the self-curing agent. Control mixes were subjected to conventional water curing for comparative analysis. Concrete specimens were cast and cured under controlled laboratory conditions. Workability tests, including slump and flow measurements, were conducted to assess fresh concrete properties. Compressive strength tests were performed on specimens at different curing ages (e.g., 7 days, 28 days) to analyze strength development. Durability assessments included water absorption tests and permeability tests to examine the influence of calcium chloride on these properties.

Keywords: Self-curing concrete, Calcium chloride, M30 grade concrete, Compressive strength, Durability

AN EXPERIMENTAL INVESTIGATION ON PARTIAL REPLACEMENT OF COARSE AGGREGATE WITH COCONUT SHELL IN CONCRETE

R.Srividhya[1], S.K.Raheem[2], P.Asif[3], T.Pranaykumar[4]
[1,2,3,4] Department of Civil Engineering,
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Abstract:

The increasing cost of conventional aggregates affects the economy of our country. Due to this, excessive exploitation of aggregates occurs. It creates environmental issues and as a result, certain restrictions were put forward by the government, in order to stop the see exploitations. Now, itis essential to find out a new source of aggregates. In the present work, coconut shellis selected as a partial replacement of coarse aggregate in concrete. Coconut shell is a waste material and the amount of these wastes is increasing day by day. Usage of these as aggregates will reduce its presence as a waste material from earth. Coconut shellisa light weight material thus producing light weight concrete. In this project, coarse aggregate is replaced by 5% and 10% of coconut shell. Design mix used is M20 grade and the testing of specimens was conducted after 7 and 28 days of curing. Its usage is cost effective. The cost of traditional materials used in the concrete is the major factor which is increasing cost of constructions, so it is necessary to research for alternative construction materials. In this experimental investigation, the coconut shell used as a light weight aggregate in concrete, the properties of coconut shell concrete examined, Control concrete with normal aggregate and CS concrete with 10-30% coarse aggregate replacement with CS were made, and Constant water to cementations ratio of 0.5was maintained for all the concretes. Properties like compressive strength, consistency, workability were investigated in the laboratory.

Keywords:- Coarse aggregate, Coconut Shell, Compressive Strength, Splitting Tensile strength, Concrete Cubes, Concrete Cylinders.

AN EXPERIMENTAL STUDY ON MIVAN FORMWORK TECHNOLOGY USING ALUMINIUM PLATES

Tene Pravallika[1], Aera Mahipal[2], Gaddam Ramakanth[3], Thimmakapally Anitha[4],ThotaVamshiKrishna[5],
[1,2,3,4,5]Department of civil engineering (CVL)
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Abstract:

This study aims to identify feasibility of MIVAN formwork technology over conventional formwork technology. As considering the growth India, India is well developing and having large population country which requires huge housing and infrastructures papers to gives shelters to the rapidly increasing populations of India. Basically coming to the method or techniques of construction the traditional or conventional method which mostly used in India like timber formwork, steel formwork to give the desire shape to the concrete structures. But its require more time to form structures, more labours, and do not provide proper quality of work. Conventional formwork is proved economical in small housing papers but in large housing papers in which its final cost is became high. So it is necessary to identify new advanced technology which provides ideal requirement of formwork and also giver better results in terms of cost, quality, speed. Among this conditions MIVAN form works become trend in world wide. MIVAN technology is provide one time pouring of concrete for beam, column, slab and wall which develop box like structure with 7 days working cycle per floor. It is made up of aluminium sheet with light weight and available as per sizes. It is easy to operate and handle, also required less no of labours. Due to lesser no of joints in construction structure has highly seismic resistance against the earthquake waves. MIVAN technology reduces the cost of plastering because it already provides finish surface. It is more used in European countries rather than India but from recent few years, In India most of Infrastructure Company used in their papers. And most important point the government scheme "Housing for All" by 2022 Which is announced in 2015 by PMAY-U to provide 5lakh houses to people MIVAN form work is being used to construct the houses due 250 repetitive use of MIVAN it become highly cost-effective construction technique. Our study relates the use of MIVAN Formwork over the conventional form work. This experimental study examines the structural performance, efficiency, and cost-effectiveness of Mivan formwork system utilizing aluminium plates. The research aims to evaluate the potential benefits of replacing traditional steel plates with aluminium plates in Mivan formwork.

Keywords: MIVAN Formwork, Advanced Constructions Process, Conventional Formwork, Box Construction Etc.

A DETAILED STUDY ON JEEDIMETLA EFFLUENT TREATMENT

M.Ganesh[1], Y. Dileep Reddy[2], N.Sukendar[3], O. Sai Tharun[4]
[1,2,3,4] Department of civil Engineering,
[1,2,3,4] Narasimha Reddy Engineering College, Hyderabad, India

Abstract:

The study of wastewater management system in Jeedimetla effluent treatment plant limited, Hyderabad. Industrial have become common feature of global landscape. Industrialization and pollution are like two side of the same coin. The goods and services are the result of Industrialization, which leads to the pollution of water, air and other natural resources. So, the need for treatment of wastewater is utmost important in the environment perspective. Industrial waste contains toxic compounds have their own adverse effects which in turn effects groundwater, which stimulates the growth of aquatic flora and fauna. So, the Effluent released from the industries cannot be directly disposed onto the land, they need some treatment before disposal to avoid contamination of soil, groundwater etc.., that contain unacceptable amounts of suspended solids, dissolved solids, minerals etc.., which are dangerous when disposed without treatment. In the present study different Physical, Chemical parameters were analyzed like Ph, Temperature Chemical oxygen demand, Ammonia, Fluoride. The report emphasizes on the biological treatment process of combined waste water, design their operation and maintenance and also the safety measures that are to be taken.

Keywords: Wastewater Management, Industrialization, Pollution, Effluent Treatment Plant, Toxic Compounds.

A STUDY ON ADVANCE WELDING AND NON DISTRUSTIVE TEST

T. Durga Prasad [1], CH.Kotesh [2], K.Srikanth [3], V.Rajashekar Reddy [4]
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Abstract:

Advanced welding techniques and non-destructive testing (NDT) methods are critical for ensuring the quality, durability, and safety of welded structures across a variety of industries, including aerospace, automotive, and construction. This paper explores the latest developments in welding technology, including laser welding, friction stir welding, and electron beam welding, which offer increased precision, strength, and efficiency compared to traditional methods. Alongside these techniques, advanced NDT methods—such as ultrasonic testing, radiographic testing, and eddy current testing—are examined for their ability to detect internal defects and evaluate weld integrity without causing damage to the material. The integration of these reliable components while minimizing downtime and material wastage. This paper also discusses the role of automation, robotics, and digital technologies, such as machine learning and data analytics, in enhancing both welding and NDT processes, paving the way for smarter, safer, and more efficient manufacturing systems. The advancements in welding and NDT are essential for meeting modern industry demands for precision, quality assurance, and cost-effectiveness.

Key words: - Welding, NDT Methods.

DESIGN AND FABRICATION OF BEVEL GEAR

Bommena Devaraj[1], Bhujankar Deepika[2], Daravath Swathi[3], Madaraboina Karthik[4]
Katravath Kishor[5]
[1, 2,3,4,5] Department of Mechanical Engineering,
[1, 2,3,4,5] Narsimha Reddy Engineering College, Hyderabad, India

Abstract:

The invention relates to the manufacture of gear wheels, namely to the manufacture of bevel gears by stamping. The process for bevel gear manufacturing includes stamping in two phases with final and preliminary calibers, wherein, according to the preliminary caliber the base area and width in the cross-section of the teeth are equal correspondingly to the base area and width in the cross-section of the final tooth. In the final and preliminary caliber the bevel gear teeth are formed in the shape of trapezium, in the preliminary caliber the teeth thickness round the basic circle is taken greater than the thickness of the final teeth, the value of the angle between the lateral areas of the trapezium and of the axis of symmetry of the tooth is approximately equal to the slope of the channel. In the final caliber the punch is communicated at the axial displacement a partial rotary motion by a kinematical connection between the punch and the ejector.

Finally, experimental validation through performance testing is presented, demonstrating the effectiveness of the design and fabrication methods employed. The findings underscore the significance of integrating modern engineering practices in the development of efficient and reliable bevel gears for various industrial applications.

Keyword:-

Pinion, Gear, Pitch, Pitch diameter, Diametral pitch, Pitch angle, Pitch surface, Pressure angle, Shaft angle,Addendum, Dedendum, Total depth, Addendum angle, Dedendum angle, Depth of taper, Space width taper, Thickness taper,Working depth, Clearance, Backlash, Circular, Normal, Angular,Radial, Axial**.**

CNC LATHE MACHINE FABRICATION

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Abstract:

CNC (Computer Numerical Control) lathe machines have become a cornerstone of modern manufacturing due to their precision, efficiency, and versatility. This paper provides a comprehensive overview of CNC lathe machines, emphasizing their fabrication processes and significance across various industries. Beginning with an introduction to CNC lathe machines and their importance in fabrication, the fundamentals, including principles, components, and types, are explored to provide a foundational understanding.

The CNC lathe machine fabrication process is discussed, detailing critical stages such as design, CAD modeling, CAM programming, material selection, and tooling. Various machining techniques, such as turning, facing, boring, drilling, tapping, and knurling, are examined to illustrate the machine's capabilities. Additionally, CNC programming—both G-code and M-code—is covered alongside operational safety and troubleshooting methods.

The paper also addresses the advantages of CNC lathe machines, such as high precision and production speed, while acknowledging limitations like cost and material restrictions. Through case studies from industries such as aerospace, automotive, medical devices, and consumer products, the practical applications of CNC lathe machines are highlighted.

Keyword:- CNC lathe, Lathe machining, Precision turning, CNC fabrication, Metal turning

Design of Cylinder Engine Piston

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Abstract

Piston is the 'heart' of the automobile engine. It's one of the key components of the engine and it's working the hard condition which accelerated the piston wear and broken. A good design of the piston in this thesis is compared with existing piston to extend the Mean Time Between Maintenance. In order to achieve the deformation, thermal and stress distribution of the piston, new piston design done with the help of Autocad design software.

A piston is a component of reciprocating engines. Its purpose is to transfer force from expanding gas in the cylinder to the crankshaft via a connecting rod. It is one of the most complex components of an automobile. This paper describes the structural analysis of three different piston materials, by using finite element method (FEM). The three different materials are, Al-GHS 1300 aluminum alloy, sic reinforced ZrB_2 composite material and NASA 398 T5 aluminum alloy. The used for designing the piston belongs to four stroke single cylinder engine of hero splendor plus 100cc. Modeling of various piston materials are done by using SOLIDWORKS software and finite element analysis is performed with using software ANSYS. Static structural and steady state thermal analysis is performed by using ANSYS WORKBENCH R15.0.

Keywords: Modeling, Mean Time Maintenance, FEM

DESIGNING OF BAG FILTER

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Abstract:

Bag filters are used for the clarification/filtration of fluids that have a relatively small loading of particles to be removed. The particle suspension passes through and the particles settle in the bag. Bag filter is mostly used in Power plants, steel mills, pharmaceutical producers, food manufacturers, chemical producers and other industrial companies. Bag Filters came into widespread use in the late 1970s after the invention of high-temperature fabrics (for use in the filter media) capable of withstanding temperatures over 177°C.In a bag filter, the size separation of fines (or dust) from the milled powder is achieved in two steps. In the first step, the milled powder is passed through a bag filter (cloth) by applying the suction on the opposite side of the feed entry. This facilitates the separation. In the next step, pressure is applied in order to shake the bags so that powder adhering to the bag falls off, which is collected from the conical base. Most bag Filters are use long, cylindrical bags (or tubes) made of woven or felted fabric as a filter medium. For applications where there is relatively low dust loading and gas temperatures are 121 °C (or) less, pleated, nonwoven cartridges are sometimes used as filtering media instead of bags. Bag Filters are very efficient particulate collectors because of the dust cake formed on the surface of the bags.

The design of Bag Filter is also invovles in storage bag Hopper design, Flange design, Fasteners design, Hopper heater design, Nuts And Bolts design, Inlet And Outlet flanges design and etc.

Keywords: - Filtration, Efficiency, Dust proof, Permeability, Fabrication, Aerodynamics, Cyclonic.

INJECTION MOULDING

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Abstract:

Injection moulding is a widely utilized manufacturing process known for its efficiency in producing complex and high-precision parts across various industries. This process involves injecting molten material into a precisely shaped mould cavity, where it cools and solidifies to form the final product. The efficiency of injection moulding is attributed to its ability to produce large volumes of parts with consistent quality and intricate detail. This abstract provides an overview of the fundamental principles of injection moulding, including material selection, mould design, and process parameters. Additionally, it discusses recent advancements in technology, such as improved thermoplastic materials and enhanced mould design techniques, which have expanded the range of applications and improved the overall performance and sustainability of the process. The paper aims to provide insights into the operational mechanics, challenges, and future directions of injection moulding, highlighting its significance in modern manufacturing.

The process involves melting raw plastic material, typically thermoplastics, and then injecting it into a pre-shaped mould cavity. Once the material cools and solidifies, the mould is opened, and the finished part is ejected. This technique allows for the mass production of complex shapes with high precision and repeatability.

Keyword:-Plastic manufacturing, Mould design, High-pressure injection, Thermoplastics.

Mechanical System &CAD and Design

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Abstract:

A mechanical system is a combination of interconnected components that work together to perform a specific function through the transfer and control of forces and motion. The system typically includes elements like levers, gears, pulleys, belts, shafts, and bearings, all designed to transmit power or motion from one part to another.

In a CAD (Computer-Aided Design) abstract, the mechanical system is represented through 3D models and precise geometric dimensions. These models serve as a digital prototype, enabling engineers to visualize, simulate, and refine the system's behavior before physical construction. CAD allows for intricate detailing, including material properties, tolerances, and assembly procedures. By using CAD software, designers can ensure that the components interact seamlessly, avoiding collisions and optimizing space usage. Additionally, CAD tools can simulate the system's operation under various loads, stresses, and environmental conditions to predict failure points and improve the design.

Mechanical systems modeled in CAD play a crucial role in industries ranging from automotive and aerospace to manufacturing, where precision, efficiency, and durability are critical to performance.

Keyword: - Mechanical CAD (MCAD), Finite element analysis, Computer fluid dynamics, Rapid prototyping

MILLING MACHINE AND ITS PROCESS

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Abstract:

Establishment of efficient machining parameters has been a problem that has confronted manufacturing industries for nearly a century, and is still the subject of many studies. Optimum machining parameters are of great concern in manufacturing environments, where economy of machining operation plays a key role in competitiveness in the market. Determination of the optimal cutting parameters (cutting conditions) like the number of passes, depth of cut for each pass, speed, and feed is considered as a crucial stage of multi-pass machining as in the case of all chip removal processes and especially in milling operation. The effective optimization of these parameters affects dramatically the cost and production time of machined components as well as the quality of the final products. This paper outlines the development of an optimization strategy to determine the optimum cutting parameters for milling operations like plain milling and face milling. This paper also underlies the importance of using optimization strategies rather than handbook recommendations as well as pointing out the superiority of the multi-pass over the single-pass optimization approach. Owing to the significant role that machining parameters play in performing successful and efficient machining operations, determination of the best or optimum machining parameters is still the subject of many studies. The need to use optimum machining parameters to improve machining efficiency is of greater importance when NC machines with high capital cost are employed. This paper describes the various optimization techniques which determine optimum machining parameters for milling operations. These parameters are intended for use by NC machines; however, they can also be used by conventional machines. The paper discusses both single-tool and multi-tool milling operations where emphasis has been placed on the latter. Although many efforts have been made to optimize machining parameters, from the review of the published literature it can be concluded that most of the work done is restricted to turning operations, and other machining operations, including milling, have gained little attention. Owing to the significant role that milling operations play in today's manufacturing world, there is a vital need to optimize machining parameters for this operation, particularly when NC machines are employed.

Keyword:-. Cutting parameters, milling, optimization

DIESEL ENGINE OVERHAUL AND INSPECTION

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Abstract:

During an overhaul, the entire engine is taken apart, and each component undergoes meticulous scrutiny for any indications of wear, damage, or decay. Common parts that are examined or substituted during this overhaul process comprise: Pistons: Inspected for wear, damage, or scoring. Replaced if necessary.

The overhaul process involves taking the engine apart and diligently identifying faulty components. Once everything is replaced and cleaned, a professional will rebuild the engine. An overhaul can help improve the performance and power of a diesel machine

Overhaul refers to an examination of machinery and the repairs or changes that are made in response to the condition of the system. Interchangeable with Maintenance Repair and Overhaul (MRO) and Tear Down, Overhauling machinery can be unavoidable, and the only process that can restore machinery to working condition.

Keyword:-1.Cylinder Liners 2.Bearings 3.Pistons 4.Connecting Rod 5.Gaskets 6.Timing Belt/Chain and Tensioners.

Processing and Manufacturing of Cement

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Abstract:

This miniproject work titled Processing and Manufacturing of Cement. The Kesoram Cement Factory located in Basanthnagar, Telangana, is a key facility within the Indian cement industry. Established as a vital component of Kesoram Industries Ltd., It specializes in manufacturing a range of cement products, including Ordinary Portland Cement (OPC) and Portland Pozzolana Cement (PPC), designed to meet diverse construction needs. The factory is equipped with modern technology to ensure high-quality output and efficient production processes. Its strategic location in Basanthnagar enables effective distribution across various markets, supporting regional infrastructure development and contributing to the economic advancement of the area.

Cement processing and manufacturing is a complex industrial process that transforms raw materials into cement, a crucial construction material. The process begins with the extraction and preparation of raw materials, primarily limestone, clay, and other additives. These materials are crushed and finely ground to form a raw meal, which is then blended to achieve a consistent composition. The raw mill is fed into a rotary kiln, where it undergoes a high-temperature chemical reaction called calcination, converting it into clinker a nodular material. From that it is sent into the cement mill. In cement mill clinker and gypsum are added together. The clinker is then cooled and ground with gypsum to produce cement. The resulting cement is packaged and distributed for use in various construction projects.

Keyword:- Safety, Crusher, Rawmill, Coal mill and Coal handling, Blending Silos, Kiln, Cement mill, Packing Plant.

PRODUCTION AND MANUFACTURING OF AGRICULTURAL EQUIPMENTS

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Abstract:

Mechanical Engineering without production and manufacturing is meaningless. The production and manufacturing process deals with converting raw materials inputs to finished products as per required dimensions, and specifications, and efficiently using recent technology. The new developments and requirements inspired us to think of new improvements in the manufacturing field. In our project Agricultural machinery involves use of equipment and machines that are required to perform various crop production activities. The use of agricultural machinery leads to better utilization of inputs and improvement in agricultural operations, particularly in large scale crop production. Most of the earlier innovations in India in this sector were on tractors and drillers. There has been an increase in the innovations in machinery in the pre-harvest as well as post-harvest operations. The present study attempts to analyse patenting activity to identify current innovations on agricultural machinery in India. Analysis of published applications revealed that the area of irrigation and postharvest processing had the maximum filing. In the case of granted patents, majority of the patents belong to the area of plant growth and post-harvest operations. The analysis reveals the specific patent portfolios and the scope of future innovations in the agriculture engineering sector.

Keywords:-Agricultural equipment, manufacturing, welding, machining.

Working on the Assembling Process of an IC Engine

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Abstract:

As an aspiring intern at TVS Motors , I aim to leverage my academic knowledge and passion for the automotive industry to contribute to innovative projects and enhance my practical skills. My background in engineering equips me with a solid foundation in mechanical principles and design processes, while my eagerness to learn and adapt will enable me to thrive in a dynamic work environment. I am particularly interested in the areas of product development and quality assurance, where I hope to gain hands-on experience and insights into the latest technologies and manufacturing practices. Through this internship, I seek to understand the operational intricacies of a leading automotive manufacturer and contribute to the company's commitment to excellence and sustainability**.**

Keyword:- Automotive Engineering, Compression stroke, Intake stroke, Torque, Performance of an engine, Piston speed, BDC, TDC

Bevel Gear Design and Fabrication

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Abstract:

The invention relates to the manufacture of gear wheels, namely to the manufacture of bevel gears by stamping. The process for bevel gear manufacturing includes stamping in two phases with final and preliminary calibers, wherein, according to the preliminary caliber the base area and width in the cross-section of the teeth are equal correspondingly to the base area and width in the cross-section of the final tooth. In the final and preliminary caliber the bevel gear teeth are formed in the shape of trapezium, in the preliminary caliber the teeth thickness round the basic circle is taken greater than the thickness of the final teeth, the value of the angle between the lateral areas of the trapezium and of the axis of symmetry of the tooth is approximately equal to the slope of the channel. In the final caliber the punch is communicated at the axial displacement a partial rotary motion by a kinematical connection between the punch and the ejector.

Finally, experimental validation through performance testing is presented, demonstrating the effectiveness of the design and fabrication methods employed. The findings underscore the significance of integrating modern engineering practices in the development of efficient and reliable bevel gears for various industrial applications.

Keywords:-

Pinion, Gear, Pitch, Pitch diameter, Diametral pitch, Pitch angle, Pitch surface, Pressure angle, Shaft angle, Addendum, Dedendum, Total depth, Addendum angle, Dedendum angle, Depth of taper, Space width taper, Thickness taper, Working depth, Clearance, Backlash, Circular, Normal, Angular, Radial, Axial**.**

Design Optimization of CNC Milling Machine for Improved Accuracy

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Abstract:

The introduction of CNC machines has radically changed the manufacturing industry. Curves are as easy to cut as straight lines, complex 3-D structures are relatively easy to produce, and the number of machining steps that required human action has dramatically reduced. With the increased automation of manufacturing processes with CNC machining, considerable improvements in consistency and quality can be achieved. CNC automation reduced the frequency of errors and provided CNC operators with time to perform additional tasks. CNC automation also allows for more flexibility in the way parts are held in the manufacturing process and the time required changing the machine to produce different components. In a production environment, a series of CNC machines may be combined into one station commonly called a "cell", to progressively machine a part requiring several operations.

Initially we got trained about the CNC programming and operations for the period of one month during the training decided to carry our project on CNC , we designed a profile to be manufactured which would be tough to achieve it by conventional machining process and we designed to make use of aluminium material as a work piece of dimension, after the basic selections and decisions the preparation of an program (based on labels) was done and we went for simulation and verified it thoroughly weather the profile achieved by simulation is matching to the designed after lots of observation we went for manufacturing the profile in CNC machine available at the source place and the results we got was smooth finished surface with high rate of accuracy with less machining time which directly increases the productivity and the process would be economical when compared to the normal conventional machining process.

Keywords:-Milling, CNC Controller, CNC Machining, stepper motors, ISO, Calliper.

ONLINE MONITORING OF PATIENTS AT ICU BY DOCTORAND FAMILY MEMBERS

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Abstract:

Critical illness is a stressful time for patients and their support networks. Although patient- directed educational material to improve the understanding of critical illness exists, both patients and staff members are often unaware of these resources or how to find them.

We aimed to evaluate the impact of the implementation of the American Thoracic Society's (ATS) "Managing the Intensive Care Unity (ICU) Experience: A Proactive Guide for Patients and Families", an ICU orientation pamphlet, on nurses' perceptions of the availability and effectiveness of patient and family educational resources.

In a safety-net urban institution, we surveyed medical ICU (MICU) nurses in February 2021 regarding their perceptions of the availability of patient and family educational materials and the time and quality of communication with families of critically ill patients. We then introduced the MICU nurses to the ATS ICU orientation pamphlet to complement patient and family education. Quick response (QR) codes were created, linking to the online versions of the ICU pamphlet, and made available in waiting rooms. Printed copies of the pamphlet were provided to families in the ICU introductory packet upon patient MICU admission.

KEY WORDS: ICU, ATS, QR.

SMART PARKING USING IOT AND MACHINE LEARNING

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Abstract:

Smart parking systems are innovative solutions designed to address the challenges of urban parking through the integration of Internet of Things (IOT) technology and machine learning (ML). These systems utilize a network of sensors, cameras, and cloud computing to provide real-time information about parking space availability, thereby enhancing user convenience and optimizing resource management. The architecture of smart parking systems typically includes several key components: sensors to detect vehicle presence, gateway devices for data processing, a cloud platform for data storage and analytics, and user applications that facilitate interaction between the system and drivers. The sensors can employ various technologies such as ultrasonic, magnetic, or camera-based detection methods to accurately monitor parking space occupancy

Smart parking systems that leverage IOT and machine learning technologies provide a comprehensive solution to urban parking challenges. They not only improve the efficiency of parking operations but also enhance the user experience by reducing search times and facilitating seamless payment processes. As cities continue to grow, these systems will be pivotal in promoting sustainable urban mobility and improving overall quality of life for residents.

Keyword:-Real-time availability updates, Mobile application, Machine Learning& IOT, slots availability data.

EARLY FLOOD DETECTION BASED ON IoT

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Abstract:

Hence we are designing this project to inform the people about the upcoming flood by making use of the concept of Internet of Things. For that purpose we are going to use an android Application to intimate the users. This Project focuses on providing early detection of flooding and the measures to minimise and avoid floods. The system involves the deployment of sensor nodes at specific flood vulnerable locations for real-time flood monitoring and detection. Flood events relating to flash flooding and run-off water or overflow are successfully monitored in real time which saves individuals plenty of time to prepare against predicted flood occurrence, saving them from the aftermath of flood disaster.

Flooding is a natural phenomenon which has attracted global attention as a result of its negative impact on the society. Developing nations such as India have been predicted to experience increased flood occurrences in the coming decade. The events of flooding are unlikely to change, however, its impact on our society can be very well reduced. There are some places that are more prone to flooding than other places, the implementation of flood alert systems near any major water area or body of water provides critical information that can protect property and save lives.

KEY WORDS: Flooding, IoT**.**

WEEDER MACHINE OPERATED BY SOLAR POWER

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Abstract:

The increasing demand for sustainable agricultural practices has led to the development of innovative solutions that minimize reliance on fossil fuels. This paper presents a solar-powered weeder machine designed to enhance weed management while reducing environmental impact. The machine utilizes photovoltaic panels to harness solar energy, powering a series of mechanical components that effectively remove weeds from crops without disturbing the soil.

The weeder machine is equipped with sensors to detect weed presence and differentiate between crops and unwanted vegetation. Its automated design ensures precision and efficiency, significantly reducing labor costs and manual effort. By operating on renewable energy, the machine contributes to lower greenhouse gas emissions and promotes sustainable farming practices.

Field tests demonstrate that the solar-powered weeder machine can operate for extended periods, achieving high weed removal rates while preserving crop health. This innovation not only addresses the challenges of weed management but also aligns with global efforts to promote eco-friendly agricultural technologies. Future developments will focus on improving the machine's efficiency and adaptability to various crop types and environments, further enhancing its utility in modern farming.

Keyword:-Solar Power, Weeder Machine, Precision Farming, Environmental Impact,Eco-Friendly Technology

ROAD DAMAGE DETECTION AND SPEED REDUCTION

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Abstract:

The transportation efficiency and driving safety of road networks, which play an essential role in economic prosperity, are impacted significantly by damage and defects on the road surface. In current practice, it can take weeks or even months before related government departments repair such road conditions, mainly due to lack of awareness of any damage.

This paper reviews the current status and limitation of a framework for sensors devices and assessment of road surface conditions. The review also incorporates the most relevant machine learning-based methods, challenges, and future trends to underpin large-scale deployment of road defects automation identification

It is expected that the technology can provide both qualitative and quantitative information about the road surface condition and thus enable timely maintenance to improve transportation efficiency and driving safety.

Keyword:-Arduino,Interface with IOT, Historical accident data.

EARTH LEAKAGE DETECTION AT THE TOWER AND ALERTING THROUGH A GSM MODULE

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Abstract:

Protection system's main function is to clear faults from the power system at high speed to ensure safety.Minimize equipment damage and maintain power system stability. If any current leaks from any electrical installation, there mustbe any insulation failure in the electrical circuit, it must be properly detected and prevented otherwise there may be a high chance of electrical shock if-anyone touches the installation.

An earth leakage detector does it efficiently. Means it detects the earth leakage current and makes the power supply off by opening the associated circuit breaker One terminal of the relay coil is connected to the metal body of the equipment to be protected against earth leakage and other terminal is connected to the earth directly.

If any insulation failure occurs or live phase wire touches the metal body, of the equipment, there must be a voltage difference appears across the terminal of the coil connected to the equipment body and earth. This voltage difference produces a current to flow the relay coil. If the fault occur it will display on the LCD and give information through wireless communication.

KEY WORDS: GSM, LCD

Multi-Purpose Agriculture Robot

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Abstract:

Agriculture is the major sector in the world that plays a vital role in developing the economy of a nation. Agrotechnology is the process of implementing the recent technologies to develop the crops that are being produced. The use of Agrotechnology not only helps in improving the efficiency of the crop that are being produced but also helps in developing devices that are suitable for doing mechanical works in the fields. This results in minimization of the total cost of production, saving of time and reduction in the effort involved in the process.

The new technology should also be economically feasible and hence the behaviour of the technology and its role in the society is an important consideration before developing a new product or process. In this work a Multipurpose Agricultural machine has been developed that helps the farmers in harvesting the best crop with least efforts. A mechanical device that helps in ploughing, sowing, fertilizer spreading, water sprinkling, forward and backword operations.

Keyword:- Aurdino, smart farming, agriculture robot.

Coal Quality Monitoring with Enhancing Thermal Power Plant Efficiency and Advanced Drying Techniques.

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Abstract:

Coal is one of the most commonly used fuels, especially in developing nations. Itis mandatory to maintain efficiency as it has Economic Impact as well as Environmental Impact. Quality of Coal should be maintained as it refers to the physical and chemical properties that determine its performance as fuel. Factors effecting Quality of Coal are Moisture Content, Ash Content, Calorific Value.

There is a large impact on Efficiency due to Coal Quality as it has Efficiency Relationship, Increased Fuel Consumption and Higher operational Costas well as environmental Hazards with greater emission of CO2, SO2, and NOx leading to regulatory challenge. For Coal Quality Monitoring we are using sensors for data analytics to assess coal quality continuously for Real me Monitoring and also the Technologies used are Near-Infrared spectroscopy with compose on analysis, and Automated sampling systems with consistent quality checks.

The benefits we get are immediate adjustments to combustion on processes and also enhanced decision-making helps optimize operations.

KEY WORDS: Efficiency, CO2, SO2, NOx.

WSN Based Elder People Fall Detection Using GSM and GPS

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Abstract:

In recent years, the increasing elderly population has necessitated the development of effective monitoring systems to ensure their safety and well-being. This paper presents an innovative fall detection system that integrates Wireless Sensor Networks (WSNs) with Global System for Mobile Communications (GSM) and Global Positioning System (GPS) technologies. The system employs accelerometers and heart rate sensors to continuously monitor the physical status of elderly individuals. Upon detecting a fall, the microcontroller activates the GPS module to ascertain the precise geolocation of the incident, while simultaneously utilizing GSM technology to send an emergency message containing critical information, including the patient's identity, heart rate status, and geographical coordinates, to a designated medical center.

The design prioritizes energy efficiency by employing a sleep mode for sensors when not in use, significantly extending battery life. The GPS module is activated only during fall events, ensuring minimal power consumption. Experimental results demonstrate that the system effectively detects falls in outdoor environments, achieving reliable geolocation acquisition without signal loss. This research highlights the potential of WSNs combined with GSM and GPS technologies in enhancing elderly care through timely intervention in emergency situations. This abstract encapsulates the key components and findings of the proposed system while adhering to academic standards.

KEY WORDS: GSM, GPS.

SMART WATER DISTRIBUTION ANDLEAKAGE DETECTION SYSTEM

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Abstract:

Leak in resource transmission pipelines is a growing concern for the water transmission industry. This creates a need to prevent the threat of leaks and minimize their damages through extensive research in leak detection technology. This research work provides a thorough investigation into the history of leak detection in pipelines by surveying the web of knowledge database and visualizing the outputs using visualization software VOS viewer and Cite Net Explorer. The analysis of the web of knowledge output presents a set of the ten most used keywords in the field of leak detection in pipelines that are further described and analyzed.

Additionally, in-depth analysis of a randomly selected sample of papers was conducted to draw a sense of the progress in the industry over the past four decades. This article also defines a novel approach to define the leak detection phases, i.e., the identify-localize-pinpoint approach. Furthermore, two classes of leak detection systems are identified, static leak detection systems and dynamic leak detection systems. The two systems are defined as well as their differentiative capabilities. Finally, this article provides a summary of popular leak detection technologies to provide a broad sense of understanding for the leak detection field of research.

KEY WORDS: VOS, Detection.

WOMEN SAFETY NIGHT PATROLLING ROBOT

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Abstract:

This Project is all about controlling a robot which is mounted with camera via wirelessly, camera is mounted with the robot using Node MCU ESP32. Robot is controlled through our smart phone & PC. We will create a web interface to control the Robot through smart phone & PC we will give left, right, forward, backward and stop. A wireless camera will be mounted on robot and web interface will be generated.

Thus, the robot will send the live streaming to PC and smart phone through this camera using Node MCU ESP32-cam module. A wide variety of applications in present age need the use of robots as opposed of human. Robots can perform task which are hazardous for human or inaccessible to them. The basic idea of this system is based on the problem that are related to the above fact.

Designing a wirelessly controlled unmanned that can be controlled via remote devices (smart phone and PC) and move in places where humans might not be able to reach shall solve many problems of applications such as surveillance, spying in defence system, used in hospitals and also in the field of science and research. By making use of rapid growing technology in robotics and automation a robot which can be controlled via smart phone with Wi-Fi network, which acts as a wireless communication link between the robot and the smart phone has been designed.

KEY WORDS: Patrolling, Robot, MCU ESP32.

Optimization of Buck Converter Design Using Machine Learning for Enhanced Efficiency and Minimization of Switching Losses

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Abstract:

The buck converter is a fundamental topology used for voltage regulation in various electrical systems. Performance, efficiency, and power output depend on parameters like input voltage, duty cycle, inductance, capacitance, and switching frequency. Switching frequency significantly impacts power losses and efficiency; higher frequencies reduce component size but increase switching losses.

This study applies machine learning (ML) algorithms to optimize component values in buck converters, focusing on the influence of switching frequency. Trained with experimental data, the ML model predicts optimal inductance, capacitance, and switching frequency values for achieving maximum efficiency and minimal power losses. Key performance metrics such as input/output voltages, current, and switching characteristics are used to forecast the ideal values under different conditions.

ML-based optimization automates parameter tuning, allowing for quicker design iterations and improved converter performance. The approach demonstrates the ability to reduce switching losses and enhance efficiency, offering a data-driven solution for optimizing power converter design and control in power electronics applications.

Keywords:-Buck converter, machine learning, switching frequency, power efficiency, switching losses, component value optimization.

DAMPING OF POWER SYSTEM OSCILLATIONS BY SSSC EQUIPPED WITH A HYBRID DAMPING CONTROLLER

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Abstract:

The main aim of this paper is damping power system oscillations, which has been accepted as one of the major concerns in power system operation. In the recent past Power System Stabilizer (PSS) was used to damp Low frequency Oscillations. At present FACTs devices, such as static synchronous series compensator (SSSC) is well-designed to enhance the transient stability of the power system and to damp LFO. In this research a modified model of a single machine infinite bus (SMIB) system installed with SSSC is used. In order to evaluate the performance of the proposed hybrid Fuzzy damping controller in damping LFO, the SMIB power system is subjected to a disturbance such as changes in mechanical power. The complete digital simulations are performed in the MATLAB/Simulink environment to provide comprehensive understanding of the issue. Simulation results demonstrate that the developed Hybrid Fuzzy damping Controller would be more effective in damping electromechanical oscillations in comparison with the conventional fuzzy logic controller and conventional proportional-integral (PI) controller .

Keywords:LowFrequencyOscillations(LFO),staticsynchronousSeriesController (SSSC), Single Machine-Infinite Bus (SMIB) power system, HybridFuzzydamping controller,Fuzzylogic controller(FLC),PIcontroller.

POWER QUALITY: AN IMPORTANTASPECT

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Abstract:

The growth in power electronics has impacted many loads that traditionally were considered linear in nature. As a result, the number of nonlinear loads has increased and is expected to increase dramatically in the years ahead. Which in turn polluting the power quality and creating problems. This paper discusses about harmonics, power quality problems, their analysis and terms defining their limits. The presentation Is done with giving a detailed mathematical analysis of harmonics, power quality indices, parameters effecting electric power etc.

The increase in electricity generation capacity has not been keeping up with the growing steady state and escalating peak demand in many parts of the world. The threatened limitations of traditional electrical power sources have focused a great deal of attention on power, its Application, monitoring and correction. With the high cost of power generation, transmission, and distribution, it is of paramount concern to effectively monitor and control power quality.

Keywords: Power quality, THD,TDD.

Present and Future trends of renewable energy sources

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ABSTRACT: The different types of Renewable energy sources are used in solar, wind, and biomass will not diminish their availability. Sunlight being a constant source of energy is used to meet the ever-increasing energy need. This review discusses the world's energy needs, enewable energy technologies for domestic use, and highlights public opinions on renewable energy. A systematic review of the literature was conducted from 2009 to 2018. During this process, more than 300 articles were classified and 42 papers were filtered for critical review.

The literature analysis showed that despite serious efforts at all levels to reduce reliance on fossil fuels by promoting renewable energy as its alternative, fossil fuels continue to contribute 73.5% to the worldwide electricity production in 2017. Conversely, renewable sources contributed only 26.5%. Furthermore, this study highlights that the lack of public awareness is a major barrier to the acceptance of renewable energy technologies.

The results of this study show that worldwide energy crises can be managed by integrating renewable energy sources in the power generation. Moreover, in order to facilitate the development of renewable energy technologies, this systematic review has highlighted the importance of public opinion and performed a real-time analysis of public tweets. This example of tweet analysis is a relatively novel initiative in a review study that will seek to direct the attention of future researchers and policymakers toward public opinion and recommend the implications to both academia and industries.

Key words: Solar panel, Wind turbine.

TEXT AND IMAGE PLAGIARISM DETECTION

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Abstract:

Plagiarism is when someone takes another author's works, thoughts, ideas, etc. without proper referencing and claim it as his/her own works.Plagiarism detection is the process to find the plagiarism within a work ordocuments.With the advance of modern technology, it makes it easier for people to search for information and plagiarize the work of others.

Although the effort and ideas for an image-based plagiarism detection has been increasing over the years, flaws are still presence in the current systems.This paper proposes a new system that can cover those flaws. It consists threestages: the pre-processing, feature extraction and comparison stage.The results showed in an ascending order of similarity index and true and false.

KEYWORDS: Plagiarism detection, Image-based plagiarism, Feature extraction,Similarity index

AI Powered Job Search Platform

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Abstract:

The Job selection process in today's global economy can be a daunting task for prospective employees no matter their experience level. It involves a detailed search of newspapers, job websites, human agents, etc, to identify an employment opportunity that is perceived compatible to abilities, anticipated remuneration and social needs.

However most do very little to profile employers against employees or even attempt to confirm the validity of the data submitted by prospective employees. Also no information exist on feedback of the employer too on various criteria submitted by employees.

Taking all these into consideration we here have proposed an intelligent agent (instead of the human agent) to perform the same search operations by interacting with the employer and job search coordinator agents.

The proposed solution would involve the creation of an applicant, job search and employer agents that would use fuzzy preference rules to make a proper decision in getting a list of jobs based on the user's search criteria and also feed the rating of the employer based on feedback submitted by the past & current employees which is unique and first of its kind

Keywords: Job matching algorithms, recommendation engine, machine learning, natural language processing

TEXT AND IMAGE PLAGIARISM DETECTION

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Abstract:

Plagiarism is when someone takes another author works, thoughts, ideas, etc. without proper referencing and claim it as his/her own works. Plagiarism detection is the process to find the plagiarism within a work or documents.

With the advance of modern technology, it makes it easier for people to search for information and plagiarize the work of others. Although the effort and ideas for an image-based plagiarism detection has been increasing over the years, flaws are still presence in the current systems.
This paper proposes a new system that can cover those flaws. It consists three stages: the pre-processing, feature extraction and comparison stage.
The results showed in an ascending order of similarity index and true and false.

Traditional plagiarism detection systems focus primarily on text, leaving significant gaps in the detection of copied or altered images. Subtle changes such as resizing, cropping, colour alterations, or adding filters can make an image appear different while still being plagiarized.
This calls for the development of more sophisticated systems that can detect image-based plagiarism with higher accuracy.

This paper proposes an improved image-based plagiarism detection system that addresses existing limitations. By employing three key stages—pre-processing, feature extraction, and comparison—this system aims to enhance the reliability and accuracy of detecting plagiarized images, providing results based on a similarity index.

Key words: - Plagiarism, Plagiarism detection, Image-based plagiarism, Modern technology, Pre-processing**,** Plagiarism detection system

QR CODE BASED ATTENDENCE SYSTEM

Godepally Pooja[1], Gajagattla Praveen[2], Kottada Elizabeth Rani[3], Baddam Shiva Nandu Reddy[4], Oraganti Ganesh[5]
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Abstract:

The QR Code Based Attendance System revolutionizes attendance tracking by utilizing unique QR codes, scanned via smart phones and webcams.Traditional methods of attendance involve time-consuming manual processes, such as calling out names or using paper-based sign-in sheets, leading to inefficiencies and delays.By generating unique QR codes for individuals and enabling scanning through smart phones or webcams, the project aims to eliminate manual attendance registers, reducing errors and time consumption.By seamlessly integrating QR code technology, it eliminates manual processes, reduces errors, and enhances efficiency.

Keywords:- QR Code, Attendance System, Automation, Student Engagement, Real-time Tracking, Efficiency, Digital Solutions, Data Management, User-Friendly Interface, Mobile Application, Security, Scalability, Time-Saving, Classroom Management, Technology Integration.

AI-Based Conversational System with Special Features

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Abstract:

Chatbots are pieces of computer software that use Natural Language Processing (NLP) to reach out to humans. The development of conversation is a crucial component of any chatbot.

The implementation of a good chatbot model remains a significant challenge, despite recent advances in NLP and Artificial Intelligence (AI). It can be used for a variety of tasks. Generally, it should understand what the user is trying to accomplish and respond accordingly.

Until now, a plethora of features have been introduced that have significantly improved the conversational capabilities of chatbots. It proposes a method for developing a chatbot based on deep neural network.

The data is learned and processed using a neural network layered with multiple layers. The novelty of the proposed model is that, the bot can be trained on any input data based on the user's needs and requirements, meaning that it was a generalized one.

Key words:-AI, Conversational Models, Natural Language Processing (NLP), Human-Computer Interactions

TEXT AND IMAGE PLAGIARISM DETECTION

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Janagama Vamshi Krishna[4],Jada Naveen[5]

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Abstract:

Plagiarism is when someone takes another author's works, thoughts, ideas, etc. without proper referencing and claim it as his/her own works.

Plagiarism detection is the process to find the plagiarism within a work or documents with the advance of modern technology, it makes it easier for people to search for information and plagiarize the work of others.Although the effort and ideas for an image-based plagiarism detection has been increasing over the years, flaws are still presence in the current systems.

This paper proposes a new system that can cover those flaws. It consists three stages: the pre-processing, feature extraction and comparison stage. The results showed in an ascending order of similarity index and true and false.

Key words:-Paraphrasing, plagiarism score, Image metadata, Pixel comparision, Image tracing

QR-BASED FOOD ORDERING SYSTEM

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Abstract:

This project presents the development of a QR-based food ordering system designed to streamline and simplify the ordering process in restaurants, cafes, and other dining establishments. The system leverages QR codes that are placed on tables or counters, which customers can scan with their smartphones. Upon scanning, users are directed to a digital menu tailored for the specific table, allowing them to view items, select orders, and customize preferences. The QR-based approach minimizes physical interactions, enhancing both convenience and safety.

Customers can place orders directly through the platform, and the system sends real-time order details to the kitchen and staff for prompt service. This system also provides functionalities such as estimated preparation time, tracking order status, and secure online payments, enhancing the dining experience. Restaurant management benefits from the automation of order tracking ,reduced dependency on manual labor, and improved accuracy in orders, thus enhancing operational efficiency.

The QR-based food ordering system, therefore, aims to offer an efficient, contactless, and user-friendly solution that caters to the evolving demands of modern consumers and optimizes restaurant management processes.

Key words:- QR Code Generation, Digital Menu, Payment Gateway, User Authentication, Database Integration.

QR CODE BASED ATTENDANCE SYSTEM

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Abstract:

The QR Code Based Attendance System revolutionizes attendance tracking by utilizing unique QR codes, scanned via smart phones and webcams. Traditional methods of attendance involve time-consuming manual processes, such as calling out names or using paper-based sign-in sheets, leading to inefficiencies and delays.By generating unique QR codes for individuals and enabling scanning through smart phones or webcams, the project aims to eliminate manual attendance registers, reducing errors and time consumption.

The system operates by generating unique QR codes for each session, which can be scanned by participants using their smartphones. This eliminates the need for traditional roll calls and manual attendance logs, reducing errors and saving time. The application automatically records the time and date of the scan, providing real-time attendance data to administrators.

Key features of the system include user authentication, data security, and the ability to generate comprehensive attendance reports. The integration of this technology promotes accuracy, minimizes fraud, and enhances the overall efficiency of attendance management. Additionally, the user-friendly interface ensures easy adoption by both students and staff.

In conclusion, the QR Code Based Attendance System represents a significant advancement in attendance management, offering a reliable, fast, and cost-effective solution that meets the demands of modern educational and organizational environments..

Key words:-Attendance System, Automation, Workplace Attendance, Real-time Tracking

REMOVING OF MULTIPLE VOTES BY USINGDE-DUPLICATION ANALYSIS

Kamalapuram Meghana[1], Sangu Kranthi[2], Yeddandi Manisha[3],S R M R T Rathnakumar[4] ,Mattaparthi Venkata Surya[5.]
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Abstract:

De-duplication analysis is a process used to identify and remove duplicate or multiple votes froma dataset, often in the context of elections, surveys or other data collection activities.

It is important that a voter register should only include one current record for each eligible voter,to ensure the register facilitates the democratic principle of one person, one vote.

The "Removing of Multiple Votes by using De-Duplication Analysis" project aims to improve voting system accuracy and reliability by utilizing advanced data analysis techniques and the 'DataVoter.xlsx' database.

"Removing of Multiple Votes by using De-Duplication Analysis" project successfully addresses the imperative need for accuracy and transparency within voting systems.

Key words:- Keywords assist with retrieval of results and provide a means to discovering other relevant content.

SMART HEALTH PREDICTION SYSTEM WITH DATA MINING

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Abstract:

The digital technology era demands the world to provide an excellent health system, to ensure the citizen and community to be alive and healthy. Purpose: This study proposes the application of data mining algorithm for health prediction that can eventually shape a suitable health prediction system for patients. Although health care is available to everyone in the world, there is still no healthcare system that is completely reliable and accurate to carefully diagnose a patient on their current health issues. Even though some hospitals are well equipped to provide the best healthcare services to its citizens, some of the hospitals are still lacking in certain qualities. Consequently, patients are doubtful and uncertain when it comes to picking which hospital suits them. Problem: Numerous issues are faced by patients pertinent to hospitals such as being unable to provide medical services, insufficient number of qualified medical staffs, poor communication between doctors and patients, and unorganized health records and data. Eventually, these issues impede the opportunity for hospitals to handle both their management and their duties steadily to maintain the health of every citizen and community.

• **Key words:-**Health Analytics, Predictive Modeling, Data Mining Techniques, Machine Learning, Health Data Integration

Music Recommendation Based on Facial Emotions

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Abstract:

A person's mood is mainly affected by the surrounding atmosphere and the type of company they keep around them. Its repercussions are seen in the person's day-to-day life, socially and career-wise, leading to a positive or negative mindset. Our proposed system recommends appropriate songs to the customers of their liking based on their current dominant mood to emphasize this idea. Here, the customer's face is detected using the OpenCV library, and different expressions are analyzed using CNN (Convolutional Neural Network) classifier and FER (Facial Expression Recognizer). In the end, appropriate songs get recommended to the customer based on their dominant mood detected.

To make sure the songs recommended are of the customer's liking, the customer selects their playlists at the starting. The system's overall idea is to ensure that the customer gets to listen to their preferred songs to help them relate to their current feelings and help them reduce them to some extent by relaxing and stabilizing their emotions. We propose a new approach for playing music automatically using facial emotion. Most of the existing approaches involve playing music manually, using wearable computing devices, or classifying based on audio features. Instead, we propose to change the manual sorting and playing. We have used a Convolutional Neural Network for emotion detection. For music recommendations, Pygame & Tkinter are used.

Keywords: Music Recommendation, Facial Emotion Recognition, Emotion Analysis, Machine Learning, User Personalization, Affective Computing

DOCTOR PATIENT PORTAL

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Abstract:

Efficient Doctor patient portal is a managing system that helps doctors as well as the patients by providing options of booking appointments as per the convenience of both doctor and patients. Through this system, doctors can easily manage the appointment slots online itself. System will make all the empty slots visibly available to the patients, which are booked by the name of any particular patient. The system makes it easy to manage various doctors and their availability on various dates and timings based on requirement. Doctor and patient can easily access their complete medical history. It helps the doctor to refer their patient's medical history for any further prescriptions and treatment. The system also contains an organ donor module. This module has an option for the registration of organ donation and blood donation along with an organ search option andblood search option. The module design helps to fulfill the urgent organ and blood requirements through easy/instant searches.

Key words:-Doctor-Patient Portal, Telehealth,Patient Engagement, Medical Records.

PATIENT HEALTH INFORMATION PORTAL

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Abstract:

The Patient Health Information Portal (PHIP) is a digital platform designed to empower patients by providing easy access to their medical records, treatment histories, and health-related resources. This portal enhances patient engagement, fosters communication between patients and healthcare providers, and facilitates better management of personal health information. Key features include secure messaging, appointment scheduling, medication tracking, and educational materials tailored to individual health needs. By streamlining access to health data, the PHIP aimsto improve patient outcomes, encourage proactive health management, and promote a collaborative approach to healthcare. Future developments may focus on integrating advanced analytics and personalized health recommendations to further enhance user experience and support informed decision-making.

Keywords: Patient Health Information Portal, digital health, patient engagement, medical records, secure messaging, health management, healthcare communication, personalized health, patient outcomes, digital accessibility.

Sentiment Analysis on Social Media

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Abstract:

This system uses opinion mining methodology in order to achieve desired functionality. Opinion Mining for Social Networking Site is a web application. Here the user will post his views related to some subject other users will view this post and will comment on this post. The System takes comments of various users, based on the opinion, system will specify whether the posted topic is good, bad, or worst. User can change his own profile picture and can update his status. These changes can be viewed by various users. We use a database of sentiment based keywords along with positivity or negativity weight in database and then based on these sentiment keywords mined in user comment is ranked. Once the user logins to the system, user can view his own status as well as he can view the topics posted by other users. When the user clicks on a particular topic user can give his own comment about the topic. System will use database and will match the comment with the keywords in database and will rank the topic. User can edit his own profile and can change his profile picture.

Keywords: Positive Sentiment, Negative Sentiment, Neutral Sentiment,AI and Machine Learning, Weather, Accident .

NETWORK SECURITY MODEL FOR BUSINESS ENTERPRISES

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Abstract:

Enterprise Network Information System is not only the platform for information sharing and information exchanging, but also the platform for Enterprise Production Automation System and Enterprise Management System working together.As a result, the security defense of Enterprise Network Information System does not only include information system network security and data security, but also include the security of network business running on information system network, which is the confidentiality, integrity, continuity and real-time of network business.

According to the security defense of Enterprise Network Information System, the project proposes the "network business security" concept.In this project, the object of information security is defined in three parts that are data security, network system security and network business security, and the network business security model is described.The proposal of the concept "network business security" provides theoretical basis for security defense of enterprise automatic production system and enterprise management information system.

Key words: Enterprise Network Information System (ENIS), Network Business Security,Data Security, Integrity and Continuity, Enterprise Automation and Management.

WEB APPLICATION SECURITY AGAINST SQL INJECTION ATTACKS

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Abstract:

Web Application are used for providing information and function on World Wide web for various e- commerce organization, medical-care, business and Government sectors which further requires security and vulnerabilities.It describes the type of SQL Injection Attacks and discusses the technique, to avoid them.The type of SQL Injection Attack, procedure for preventing from SQL Injection Attacks and related work which was done for this has been considered.An effective and efficient scheme is proposed to prevent SQL Injection Attack which is locating between web application and database. In such a way to use SQM and Sanitization Application are necessary to extend security or keep from attacker to abusing the database.Through two way evaluations, it is proved that our proposed scheme is more secure and can forcefully cover all bases of our web-based application.

Key words: Web Application Security, SQL Injection Attacks, Sanitization Techniques, Database Protection, E-commerce Security

ONLINE ROOM SCHEDULER APP

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Patnam Vamshi[4], Challa Naga Lakshmi[5]
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Abstract:

The project aims to create a “Online Room Scheduler App” which can be used by the customers or users to reserve the rooms, add the rooms and also can view the bookings. The current system lacks seamless integration with users' preferred calendars. This results in disjointed scheduling experiences, making it challenging for users to manage their overall schedules cohesively.The app aims to streamline the process of adding available rooms, booking desired spaces and view the rooms.The project creates a user-friendly interface that caters users, ensuring a seamless experience from room addition to the final booking confirmation. The real-time availability feature eliminates scheduling conflicts, providing users with the confidence to secure their preferred spaces effortlessly.

Keywords: Room Reservation, User-Friendly Interface, Booking Management, UserExperience, Availability Management, Efficient Scheduling

CYBER SECURITY AND ARTIFICIAL INTELLIGENCE FOR CLOUD- BASED INTERNET OF TRANSPORTATION SYSTEMS

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Abstract:

The Internet of Things (IoT) has major implications in the transportation industry. Autonomous Vehicles (AVs) aim at improving day-to-day activities such as delivering packages, improving traffic, and the transportations of goods. AVs are not limited to ground vehicles but also include aerial and sea vehicles with a wide range of applications. The IoT systems consisting of a collection of AVs have come to be known as the Internet of Transportation systems. While such IoT systems manage large quantities of sensor data, much of the data is also sent to a cloud for offline analysis. While there is great potential in AVs and the improvements it can make to the transportation industry, security and privacy concerns pose new challenges that need to be addressed as we move forward. In addition, Artificial Intelligence techniques are also becoming crucial for such IoT systems to be able to intelligently manage the AVs. This paper discusses AI and security for cloud-based Internet of Transportation Systems.

Keywords: Internet of Things (IoT), Transportation industry, Autonomous Vehicles (AVs), Sensor data, Cloud analysis, Artificial Intelligence (AI), Cloud-based systems

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DESIGNING SECEURE AND EFFICIENT BIOMETRIC

Bhukya Jasvanth[1], Gogula LaxmiPrasanna[2], Kommula Maruthi[3],Yemula Sricharan[4],Sampangi Vilakar[5]
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Abstract:

The objective is to design a robust and secure biometric application that leverages face and fingerprint recognition technologies for user authentication. We are using Face and Finger print authentication to validate all users and if user validate then he will be allowed to upload his files to cloud or he can download.The existing system for file uploads to the cloud is facing significant challenges and limitations, highlighting the need for a modernized and more secure solution. The current system exhibits several shortcomings that impact both security and user experience.The primary objective of designing a secure and efficient biometric face and fingerprint application for uploading files to the cloud is to establish a cutting-edge solution that seamlessly integrates advanced biometric authentication with robust file transfer mechanisms. The design of a secure and efficient biometric face and fingerprint application for uploading files to the cloud represents a significant stride towards enhancing user authentication and data transfer security.

Key words: Biometric Authentication, Security, Data Privacy, Encryption , Machine Learning.

VIRTUAL BANKING ASSISTANT

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Abstract:

Chatbots are pieces of computer software that use Natural Language Processing (NLP) to reach out to humans. The development of conversation is a crucial component of any Chatbot. The implementation of a good Chatbot model remains a significant challenge, despite recent advances in NLP and Artificial Intelligence (AI). It can be used for a variety of tasks. Generally, it should understand what the user is trying to accomplish and respond accordingly. Until now, a plethora of features have been introduced that have significantly improved the conversational capabilities of chatbots. It proposes a method for developing a chatbot based on deep neural network. The data is learned and processed using a neural network layered with multiple layers. The novelty of the proposed model is that, the bot can be trained on any input data based on the user's needs and requirements, meaning that it was a generalized one. . It becomes difficult to extract information for a person who is not a student or employee there. The solution to these comes up with a college inquiry chat bot, a fast, standard and informative widget to enhance college website's user experience and provide effective information to the user. Chat bots are an intelligent system being developed using artificial intelligence (AI) and natural language processing (NLP) algorithms. It has an effective user interface and answers the queries related to examination cell, admission, academics, users' attendance and grade point average, placement cell and other miscellaneous activities.

Key words: Chatbots, Natural Language Processing (NLP),Conversation development Artificial Intelligence (AI).

A MODIFIED SCHEME FOR PREVENTING WEB APPLICATION AGAINST SQL INJECTION ATTACK

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Abstract:

Web Application are used for providing information and function on World Wide web for various e-commerce organization, medical-care, business and Government sectors which further requires security and vulnerabilities. It describes the type of SQL Injection Attacks and discusses the technique, to avoid them. The type of SQL Injection Attack, procedure for preventing from SQL Injection Attacks and related work which was done for this has been considered. An effective and efficient scheme is proposed to prevent SQL Injection Attack which is locating between web application and database. In such a way to use SQM and Sanitization Application are necessary to extend security or keep from attacker to abusing the database. Through twoway evaluations, it is proved that our proposed scheme is more secure and can forcefully cover all bases of our web-based application.

Key words: World Wide web, SQL Injection Attacks, Sanitization Application,e-commerce organization

EMPLOYEE PAYROLL MANAGEMENT SYSTEM

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Abstract:

Payroll is very simple, flexible and user-friendly Management software. That takes care of all your requirements relating to accounting and management of employees Payroll. Payroll stores complete records of the employees, generates pay-slips and attendance, computes all allowances and detections and generates all statutory reports. Pay roll is only salary processing software with good and wide industry range of clients. It offers very high flexibility in defining various allowances, deductions: leave rules etc. for the employees and are definable and changeable at User's end. Payroll Application has been designed for the purpose of maintaining details of various allowances and deductions that need to be given to the employees of the organization. Also, it generates salary sheets of the employees of the organization that assists the accounts department in many ways.

Key words:- Payroll Management, Salary Processing, Attendance Tracking, Employee Records

TOLL SYSTEM USING AUTOMATIC NUMBER PLATE DETECTION

Bheemanathi Harini [1], Islavath Abhishek Nayak [2], Vadla Laxmi Narsimha[3], Chirra Bala Krishna Reddy[4], Mathya Hepsiba[5]
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Abstract:

The project employs advanced technology to effortlessly recognize vehicles via their number plates, revolutionizing toll collection. Manual toll collection means a process for collecting tolls using cash, credit card, or debit card to provide payment directly to the operator of the toll facility or his agents at the time a vehicle passes through the toll facility. This initiative aims to enhance efficiency, eliminate manual operations, and reduce congestion. By integrating vehicle recognition and wallet-based payments, this project streamlines travel experiences. It eliminates manual transactions, reducing delays and errors at toll booths.

Keywords: Vehicle Recognition, Number Plate Recognition, Toll Collection, Manual Toll Collection, Cashless Payment, Efficiency, Congestion Reduction, Automated Operations.

AGRI-INFO CLOUD BASED AUTONOMIC SYSTEM FOR DELIVERING AGRICULTURE AS A SERVICE

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Abstract:

The Internet of Things (IoT) and cloud computing paradigms offer enhanced services for agricultural applications to manage the data efficiently. To provide an effective and reliable agriculture as a service, there is a need to manage Quality of Service (QoS) parameters to efficiently monitor and measure the delivered services dynamically. The project presents a QoSaware cloud based autonomic information system called Agri-Info for delivering agriculture related information as a service through the use of latest Internet-based technologies such as cloud computing and IoT which manage various types of agriculture related data based on different domains of agricultural industry. Proposed system gathers information from various users through preconfigured IoT devices (mobiles, laptops or iPads). It further manages and delivers the required information to users and diagnoses the agriculture status automatically. We have developed the web and mobile-based application and evaluated the performance of the proposed system in cloud environment using Cloud Sim toolkit based small scale environment.Results demonstrate our system yields in a reduction on 12.46% cost, on 15.52% network bandwidth, on 10.18% execution time and 13.32% in latency. Furthermore, a case study of an Indian village is presented to identify the customer satisfaction of farmers.

Key words: Cloud computing, Agriculture as a service, Farm Management software.

RESUME AND SKILL MATCHING WITH NLP-BASED AUTOMATION

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India

Abstract:

As the job market continues to grow in complexity, the need for efficient resume analysis tools becomes increasingly vital. This paper proposes a cutting-edge Resume Knowledge Extraction Framework designed to streamline the process of extracting pertinent information from resumes using advanced text classification techniques. The system encompasses a multi-faceted approach, integrating data preprocessing, feature extraction, and a sophisticated classification model to identify and categorize key elements such as skills, education, and experience.The framework's development involves a comprehensive training pipeline, leveraging a diverse dataset of annotated resumes to optimize model performance. The user interface ensures a seamless experience, allowing users to upload resumes and review extracted information.The proposed Resume Knowledge Extraction Framework offers a promising solution for automating and improving the resume analysis process, ultimately contributing to more effective and equitable hiring practices in a dynamic job market.

Key words: - Natural Language Processing (NLP), Resume Analysis, Skill Suggestion, Automated Career Guidance.

AUTOMATED RESUME SCORING & CANDIDATE SELECTION SYSTEM

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Abstract:

The Resume Shortlist feature employs AI to identify candidates with matching skills and scores. The current system for screening resumes employs a manual process in which recruiters or human resource managers evaluate job applications based on their qualifications, experience, and other factors.Its objective is to provide companies with a user-friendly platform for efficient resume evaluation, enabling skill-based short listing and reducing bias. With this innovative tool, companies can embrace a bias-free and streamlined selection process, ultimately securing top-tier talent that perfectly aligns with their organizational needs.

Key words: - Automated Resume Screening, AI in Recruitment, Skill-Based Shortlisting, Bias-Free Selection, Resume Scoring.

NLP- BASED AUTOMATED RESUME ANALYSIS AND SKILL MATCHING WEBSITE

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Abstract:

As the job market continues to grow in complexity, the need for efficient resume analysis tools becomes increasingly vital. This paper proposes a cutting-edge Resume Knowledge Extraction Framework designed to streamline the process of extracting pertinent information from resumes using advanced text classification techniques. The system encompasses a multi-faceted approach, integrating data preprocessing, feature extraction, and a sophisticated classification model to identify and categorize key elements such as skills, education, and experience. The framework's development involves a comprehensive training pipeline, leveraging a diverse dataset of annotated resumes to optimize model performance. The user interface ensures a seamless experience, allowing users to upload resumes and review extracted information. The proposed Resume Knowledge Extraction Framework offers a promising solution for automating and improving the resume analysis process, ultimately contributing to more effective and equitable hiring practices in a dynamic job market.

Key words: Natural Language Processing (NLP), Automated Resume Analysis, Job Matching, Role-Based Skill Recommendations

AI-DRIVEN JOB SEARCHAND RECRUITMENT PLATFORM

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Mohammed Naushad[4]
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Abstract:

The Job selection process in today's global economy can be a daunting task for prospective employees no matter their experience level. It involves a detailed search of newspapers, job websites, human agents, etc, to identify an employment opportunity that is perceived compatible to abilities, anticipated remuneration and social needs.However most do very little to profile employers against employees or even attempt to confirm the validity of the data submitted by prospective employees. Also no information exist on feedback ofthe employer too on various criteria submitted by employees.Taking all these into consideration we here have proposed an intelligent agent (instead of the human agent) to perform the same search operations by interacting with the employer and job search coordinator agents.The proposed solution would involve the creation of an applicant, job search and employer agents that would use fuzzy preference rules to make a proper decision in getting a list of jobs based on the user's search criteria and also feed the rating of the employer based on feedback submitted by the past & current employees which is unique and first of its kind.

Keywords:- Job Selection, Intelligent agent, Compatibility, Fuzzy preferences rules, Feedback.

University Administrative Management System

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Abstract:

University management systems automate day-to-day academic and administrative functions, reducing staff' manual effort and increasing efficiency. It Tracks student enrollment in various courses and programs. Maintains information about faculty members, including qualifications, courses taught, and schedules. Facilitates project submissions, grading, and feedback. So, In this work, we have design a web application for university management which aims to streamline administrative processes and enhance user experience for three primary roles such Admins, Instructors, and Students. Admins have the privilege to log in and manage the records, including students, courses, projects, instructors, grades, sports, exams, attendance, and transport details. They can add, update, and delete records, ensuring a dynamic and comprehensive database. Admins can also view specific student information, such as enrolled courses, projects, and sports activities. Students can access the system using their unique student IDs and view their attendance records, grades, enrolled courses, and project details, providing them with a centralized platform for academic information. Instructors, identified by instructor IDs, can log in to view details about their enrolled students and student assistants, improving communication and coordination within the academic community. This user-centric design facilitates efficient record management for Admins while empowering Students and Instructors with easy access to relevant academic data. The system serves as a robust tool for university management, enhancing overall efficiency.

Key words:- University Management System, Admin Dashboard, Student Portal

Payroll Automation and Management System for Employees

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Abstract:

Payroll is very simple, flexible and user-friendly Management software. That takes care of all you requirements relating to accounting and management of employees Payroll. Payroll stores complete records of the employees, generates pay-slips and attendance, computes all allowances and detections and generates all statutory reports.

Pay roll is only salary processing software with good and wide-industry range of clients. It offers very high flexibility in defining various allowances, deductions; leave rules etc. for the employees and are definable and changeable at User's end.

Payroll Application has been designed for the purpose of maintaining details of various allowances and deductions that need to be given to the employees of the organization. Also, it generates salary sheet of the employees of the organization that assists the accounts department in many ways.

Key words:- Payroll Software, Employee Management, Accounting, Machine Learning.

Frame work for developing online web applications

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Abstract:

Developing online web applications involves a structured framework encompassing several critical stages to ensure the project's success. Initially, planning is essential, entailing thorough requirement gathering, defining project scope, establishing timelines, and resource allocation to create a clear project roadmap. The design phase follows, where wireframes, mockups, and prototypes are developed, focusing on both user interface (UI) and user experience (UX) to create a user-friendly and visually appealing application. During the development phase, developers work on coding the frontend and backend, integrating databases, APIs, and necessary services, while adhering to best practices in coding standards, version control, and documentation to maintain a clean and efficient codebase. Testing is a pivotal stage, involving unit testing, integration testing, and user acceptance testing (UAT) to identify and rectify any bugs or issues, ensuring the application is secure, performs optimally, and functions as intended. Automated testing tools enhance this process. Following successful testing, the deployment phase involves setting up servers, configuring environments, and managing dependencies to launch the application in a live environment.

Key words:- Payroll Software, Employee Management, Accounting, Machine Learning.

Agri-Info Cloud Based Autonomic System For Delivering Agriculture As A Service

Korpathi Hemalatha[1], Kagnale Nandini[2], Siddiqua Tabassum[3],Puppala Rishikesh[4],B.Srikar[5]
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Abstract:

The Internet of Things (IoT) and cloud computing paradigms offer enhanced services for agricultural applications to manage the data efficiently. To provide an effective and reliable agriculture as a service, there is a need to manage Quality of Service (QoS) parameters to efficiently monitor and measure the delivered services dynamically. The project presents a QoS-aware cloud based autonomic information system called *Agri-Info* for delivering agriculture related information as a service through the use of latest Internet-based technologies such as cloud computing and IoT which manage various types of agriculture related data based ondifferent domains of agricultural industry. Proposed system gathers information from various users through preconfigured IoT devices (mobiles, laptops or iPads). It further manages and delivers the required information to users and diagnoses the agriculture status automatically. We have developed the web and mobile-based application and evaluated the performance of the proposed system in cloud environment using Cloud Sim toolkit based small scale environment.

Results demonstrate our system yields in a reduction on 12.46% cost, on 15.52% network bandwidth, on 10.18% execution time and 13.32% in latency. Furthermore, a case study of an Indian village is presented to identify the customer satisfaction of farmers.

Key Words:-Inventory Management , Order Processing , Payment Tracking , Pipe Industry Solutions.

ONLINE GROCERY RECOMMENDATION USING COLLABORATIVE FILTERING

K.Ramya[1],M.SeethaRathnam[2],J.Adithya[3],M.RaviSankar[4],KGopichad[5]
[1,2,3,4,5]Computer Science and Engineering,
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Abstract:

We are recommending groceries using collaborative filtering which will find similarities between users and their purchased items and then recommend item to new users based on similar users and their preferences with max similarity.One of the biggest challenges for supermarkets is keeping track of inventory levels. This can result in overstocking or understocking of products, which can affect profits. A product recommendation is basically a filtering system that seeks to predict and show the items that a user would like to purchase. It may not be entirely accurate, but if it shows you what you like then it is doing its job right.We are designing and developing a website for Online Grocery Shopping, and our main aspect is recommending the right product to the user and take their shopping experience next level, as well as we are also focusing to save their precious time. A product recommendation is basically a filtering system that seeks to predict and show the items that a user would like to purchase. It may not be entirely accurate, but if it shows you what you like then it is doing its job right. Collaboration means collaborating with different users. We find similarity among users to help recommending products to them.

Key words:- Payroll Software, Employee Management, Accounting, Machine Learning.

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ONLINE BUS TICKET RESERVATION SYSTEM

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Abstract:

The Online Bus Ticketing Application is a comprehensive mobile and web platform that delivers a smooth and intuitive experience for bus ticket booking, catering to both travelers and bus operators. Available 24/7 and globally accessible, it allows customers to search routes, check real- time seat availability, and book seats with transparent fare displays and secure payment options. The application stores and manages user data, including travel history, frequent routes, and preferred drop points, to personalize each booking. Designed with a simplified and functional interface, the system makes it easy for users to view schedules, select seating classes, and receive instant digital tickets, either in-app, via email, or as downloadable PDFs. For bus operators, the platform includes a management dashboard to oversee schedules, routes, pricing, and seat occupancy, thus enhancing operational efficiency. By providing a safe, digitized booking process,the Online Bus Ticketing Application transforms traditional travel planning into a modern, user- centered experience, making it ideal for both frequent and occasional travelers.

Key Words:-Inventory Management , Order Processing , Payment Tracking , Pipe Industry Solutions.

Chatbot

Chede Ruchitha[1], Mudavathi Santhosh[2],Thupakula Vamshi Yadav[3],Turkani Lalappa[4], KotagiriPranay Kumar[5]
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Abstract:

Chatbots are pieces of computer software that use Natural Language Processing (NLP) to reach out to humans. The development of conversation is a crucial component of any Chatbot. The implementation of a good Chatbot model remains a significant challenge, despite recent advances in NLP and Artificial Intelligence (AI). It can be used for a variety of tasks. Generally, it should understand what the user is trying to accomplish and respond accordingly. Until now, a plethora of features have been introduced that have significantly improved the conversational capabilities of chatbots. It proposes a method for developing a chatbot based on deep neural network. The data is learned and processed using a neural network layered with multiple layers. The novelty of the proposed model is that.

Key words:- Artificial. Intelligence (AI), Natural Language Processing (NLP), Machine Learning (ML), Conversational Interface, User Experience (UX), Integration, Automation, Customer Support, Personalization

MULTI-AGENT SYSTEM FOR PERSONALIZED SHOPPING RECOMMENDATION

G.Madhu Chandana[1],P.Nava Bharath Kumar[2], S.Manjunadha[3],N.Manoj[4],S.Vigneshwar[5]
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Abstract:

Current e-shopping systems use the Internet as its primary medium for transactions. e-shopping has grown in popularity over the years, mainly because people find it convenient and easy to buy various items comfortably from their office or home.The project has proposed a personalized e-shopping system, which makes use of agent technology to enhance the automation and efficiency of shopping process in Internet commerce.The agent technology is used to enhance the customer's needs which include availability, speedy response time, and efficiency.Agent for e-Shopping creates connectivity on an anytime-anywhere any-device-basis to provide the specific goods required by the consumers based on transactioncost optimization and scalability.Finally the system performs efficiently and can help customers to save enormous time for Internet shopping. Security agents encountered vulnerabilities or weaknesses in the system, raising concerns about the confidentiality and integrity of user data and financial transactions.The system exhibited limited adaptability to dynamic market trends and user behavior, resulting in missed opportunities to capitalize on emerging product preferences or shifts in demand.

Key words:- Secure Communications, Real-Time Data Transfer, Encryption Protocol

MANAGEMENT SYSTEM FOR BHAVANI MILL STORES

Dyagari Priya[1] , Moulik Patel[2] , Guntakulam Sai Nikitha[3] , Nirudi Dinesh[4] , Siripuram Vinay Kumar[5]
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Abstract:

In this project, we have designed an inventory management system for CRV Pipes that records all incoming product quantities, outgoing (sold) products, and payment details. As a pipes manufacturer entering the business, it is essential to determine which types of pipes are most suitable for various specialized applications. With adequate research, manufacturers can discover that a diverse array of pipes exists to cater to specific conditions.

The project aims to simplify inventory tracking, order processing, and payment management, thereby providing a streamlined experience for both administrators and users involved in product supply and distribution. The Bhavani Mill Stores project offers a comprehensive solution for inventory and order management, ensuring smooth transactions and streamlined operations.

The proposed system focuses on activities such as movement tracking, calculating average orders, relocation, and identifying the average rate of stock exchange to gain insights into inventory stock. It includes detailed information regarding dealers or suppliers, purchases, incoming shipments, orders, exchanges, item registrations, sales, and credit balances, effectively addressing significant drawbacks of traditional paper-based systems.

Key Words:-Inventory Management , Order Processing , Payment Tracking , Pipe Industry Solutions.

MILITARY COMMUNICATIONS APPLICATIONS

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Abstract:

Military communication systems play a pivotal role in ensuring effective command, control, and coordination among military forces. These systems facilitate secure and real-time data exchange, allowing military personnel to make swift and informed decisions on the battlefield.Information sharing is the key concept of network-centric military operations. As the complexity of operational environments increases, military communications networks must be agile to meet strict and evolving mission requirements in the midst of challenges presented by dynamic operational environments. The project presents an approach to enhance the security of military messages through the integration of classical cryptographic techniques. We used the encryption techniques the Vigenère and Polybius ciphers. A key is generated in these 2 techniques using thatkey we can encrypt and decrypt the messages which are exchanged between the users.

Key words:- Secure Communications, Real-Time Data Transfer, Encryption Protocol

PERINATAL MENTAL HEALTHCARE SYSTEM USING MACHINE LEARNING SYSTEM

A. Mounika[1], K. Hemanth[2], M. Nikshitha[3], G. Rakesh[4], B.Vignesh[5]

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Abstract:

This review explores advances in the utilization of technology to address perinatal mood and anxiety disorders (PMADs). In this project, we trained SVM and KNN algorithms using your information, then we collected user input to predict whether or not the patient is depressed. We identified a variety of technologies with promising capacity for direct intervention, prevention, and augmentation of clinical care for PMADs. These included wearable technology, electronic consultation, virtual and augmented reality, internet-based cognitive behavioral therapy, and predictive analytics using machine learning. Available evidence for these technologies in PMADs was almost uniformly positive. However, evidence for use in PMADs was limited compared to that in general mental health populations. Proper attention to PMADs has been severely limited by issues of accessibility, affordability, and patient acceptance. Increased use of technology has the potential to address all three of these barriers by facilitating modes of communication, data collection, and patient experience.

Key words:- Secure Communications, Real-Time Data Transfer, Encryption Protocol

ONLINE TICKET RESERVATION FOR BUSES

Anedla Akshitha[1], B. Durga Bhavani[2], N. Vaishnavi[3], Chukka Rajendra[4], Perupogu Sandeep[5]
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Abstract:

This project presents an innovative online bus ticket reservation system, leveraging AI-driven predictive analytics to optimize ticket booking experiences. Integrating real-time data on bus schedules, passenger demand, and route preferences, our system predicts seat availability and recommends optimal travel options. Machine learning algorithms improve booking accuracy, reduce cancellations, and enhance customer satisfaction.

This project presents a comprehensive ticket reservation system designed to streamline the process of booking bus tickets for passengers. The system allows users to search for available buses, view schedules, and make secure online reservations. Key features include real-time seat availability, multiple payment options, and user account management for easy tracking of bookings. The system aims to enhance the travel experience by reducing wait times and simplifying the ticketing process, while also providing bus operators with a platform to manage their schedules and inventory effectively. The proposed solution leverages modern web technologies to ensure accessibility, reliability, and user-friendly navigation.

The Intelligent Bus Ticket Reservation System revolutionizes ticket booking experiences using AI-driven predictive analytics. Integrating real-time data on bus schedules, passenger demand, and route preferences, the system predicts seat availability and recommends optimal travel options. Machine learning algorithms improve booking accuracy, reduce cancellations, and enhance customer satisfaction.

Key words:- AI, Predictive Analytics, Machine Learning, Online Reservation System, Bus Ticketing.

RIDE SHARING AND CARPOOLING SOLUTION

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Abstract:

Car Pooling, or ride-sharing, is a sustainable commuting approach where multiple people share a single vehicle for travel, significantly reducing traffic and environmental impact.As we live in a modern day world where people tend to prefer their own vehicle on road for eachand every small work. In recent years the no of vehicles on the road has increased tremendously which has created the problem of traffic on the roads.

The project aims to develop an efficient Car Pooling application that fosters shared transportation.

By providing a user-friendly platform for shared rides, we empower individuals to collectively contribute to reduced traffic congestion and carbon emissions.

Keywords:- Ride sharing and carpooling solution

EMOTION-BASED MUSIC SUGGESTION PLATFORM

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Abstract:

Emotion-Based Music Recommendation System that integrates facial emotion recognition to enhance user experience in music selection. The introduction highlights the significant relationship between music, human emotions, and the potential for using facial expressions to detect user moods, which can then be utilized to recommend appropriate playlists based on these emotional states. It emphasizes the need for a system that can adapt to users' changing moods in real-time, thus improving mood regulation through music.

The problem statement addresses the limitations of traditional music players and streaming apps, which often require users to manually navigate through playlists to find music that suits their moods.

The objectives of the system include creating a recommendation algorithm that responds dynamically to users' facial emotions while engaging with the music player. By analyzing facial expressions, the system aims to predict emotions and suggest music aligned with those feelings.

The literature survey reviews existing music recommendation systems and highlights their shortcomings, such as lack of context awareness regarding users' real-time emotional states. It discusses various machine learning approaches used in current systems and identifies the necessity for improvements, particularly in incorporating emotional recognition capabilities.

Keywords: Emotion, Music Recommendation, Facial Expressions, Playlist, Mood.

ROAD POTHOLE DETECTION BASED ON CROWD SOURCED DATA AND EXTENDED MASK R-CNN

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Abstract:

Pothole detection and road maintenance have become significant challenges for urban infrastructure, impacting transportation safety and efficiency. This research introduces a novel approach to pothole detection using crowd-sourced data and the Extended Mask R-CNN (Region-based Convolutional Neural Network). By leveraging data from users, including images and reports from various locations, this method provides a scalable and real-time solution for identifying potholes across large geographic areas. The system aims to bridge the gap between road users and local authorities, enabling timely repairs and improving road safety.The proposed framework integrates crowd-sourced data with a deep learning architecture, Extended Mask R-CNN, to accurately identify and segment potholes from road images. This network is trained on a diverse dataset of labeled road images, allowing it to generalize well across different environments and lighting conditions. In addition, enhancements to the original Mask R-CNN architecture improve segmentation accuracy by introducing new layers and techniques, such as feature fusion and context-awareness, making it more robust for real-world applications.

The system's ability to process real-time data from users enables municipalities to prioritize and address road issues more efficiently. By crowdsourcing data, the platform not only fosters community participation but also reduces the dependence on costly, dedicated monitoring equipment. This innovative approach offers a cost-effective, scalable solution for cities aiming to maintain road infrastructure while ensuring safety and convenience for drivers.

Key words:-Pothole Detection, Crowd-sourced Data, Extended Mask R-CNN, Deep Learning, Road Maintenance, Image Segmentation, Transportation Safety, Infrastructure Management, Feature Fusion, Context-aware Detection.

YOLO-ESCA: A HIGH-PERFORMANCE SAFETY HELMET STANDARDWEARING BEHAVIOR DETECTION MODEL BASED ON IMPROVED YOLOV5

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Abstract:

In various industrial environments, ensuring worker safety is paramount, with the proper use of personal protective equipment (PPE) like safety helmets playing a crucial role. However, non-compliance with helmet-wearing regulations often leads to increased risks of workplace injuries. To address this issue, automated detection of helmet-wearing compliance has emerged as a vital safety solution. This paper presents YOLO-ESCA, a high-performance safety helmet standard wearing behavior detection model based on an improved YOLOv5 framework. Our model aims to provide fast and accurate identification of workers who are either not wearing helmets or wearing them improperly, ensuring timely intervention to prevent potential accidents.YOLO-ESCA leverages enhancements to the YOLOv5 object detection model, making it more suitable for real-time monitoring in dynamic industrial settings. Although YOLOv5 is known for its speed and accuracy, our improvements target the specific challenges related to detecting helmet-wearing behavior. These challenges include variations in helmet colors, diverse lighting conditions, occlusions, and the differentiation between proper and improper helmet usage. Key improvements in YOLO-ESCA include the integration of a more refined anchor box mechanism, which optimizes the detection of small objects such as helmets in large industrial environments. Additionally, we introduced an advanced feature extraction technique through a more robust backbone network to enhance the detection of fine-grained details that are critical for distinguishing between standard and non-standard helmet usage. We also applied transfer learning from a pre-trained YOLOv5 model, reducing the need for extensive training while still improving the detection accuracy in industrial environments with limited data.

Key words:-YOLOv5, safety helmet detection, personal protective equipment (PPE), workplace safety, real-time object detection, behavior recognition, industrial safety, deep learning, computer vision, helmet-wearing compliance.

AI-DRIVEN DDOS PROTECTION ARCHITECUTRE AND TOOLS

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Abstract:

Distributed network attacks are referred to, usually, as Distributed Denial of Service (DDoS) attacks. These attacks take advantage of specific limitations that apply to any arrangement asset, such as the framework of the authorized organization's site. In the existing research study, the author worked on an old KDD dataset. It is necessary to work with the latest dataset to identify the current state of DDoS attacks. This paper, used a machine learning approach for DDoS attack types classification and prediction. For this purpose, used Random Forest and XGBoost classication algorithms. To access the research proposed a complete framework for DDoS attacks prediction. For the proposed work, the UNWS-np-15 dataset was extracted from the GitHub repository and Python was used as a simulator. After applying the machine learning models, we generated a confusion matrix for identification of the model performance. In the first classification, the results showed that both Precision (PR) and Recall (RE) are 89% for the Random Forest algorithm. The average Accuracy (AC) of our proposed model is 89% which is superb and enough good. In the second classification, the results showed that both Precision (PR) and Recall (RE) are approximately 90% for the XGBoost algorithm. The average Accuracy (AC) of our suggested model is 90%. By comparing our work to the existing research works, the accuracy of the defect determination was significantly improved which is approximately 85% and 79%, respectively.

Key words:-Distributed Denial of Service, Machine Learning, Precision, Recall, Classification, DDoS Attack Types , Accuracy, KDD Dataset .

CNN-LSTM-DRIVING STYLE CLASSIFICATION MODEL BASED ON DRIVER OPERATION TIME SERIES DATA

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Abstract:

Now modern world enter into the world of self driving vehicles where tiny sensors will sense environment (road condition) or driving behaviour data and then input those data to Artificial Intelligence model which will predict vehicles next motion or will predict driver behaviour.In past many existing algorithm was introduced such as Question Based Driver behaviour identification where software will ask question to driver for behaviour recognition, image based behaviour identification which will heavily dependent on image lighting and many more but those techniques were not accurate enough.Later machine learning models was introduced which will take input from sensors and then predict driver behaviour but those techniques prediction accuracy is good but can be further enhance. So author of this paper employing combination of deep learning algorithms called CNN and LSTM where CNN will be used to extract features from dataset and then this extracted features will be input to LSTM to train time series based temporal data and this trained model can be used to classify driving style of the driver.In propose work author defining two layers of CNN for features extraction and one layer of LSTM for temporal based driver style classification. In propose work author has trained another algorithm called CNN + LSTM + I by inducing sensor signals (where I represents inducing of signals) but we don't have such signal so we cannot implement this model but we have implemented existing CNN and propose CNN + LSTM.To train above models author has used simulated and real world driving dataset but not publish this dataset so we have used Driver Style Classification dataset from KAGGLE and below are the dataset details

Key words:-AI, Real-time weather conditions, Historical accident data, Machine Learning.

INVESTIGATING EVASIVE TECHNIQUES INSMS SPAM FILTERING: A COMPARATIVE ANALYSIS OF MACHINE LEARNING MODELS

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The persistence of SMS spam remains a significant challenge, highlighting the need for research aimed at developing systems capable of effectively handling the evasive strategies used by spammers. Such research efforts are important for safeguarding the general public from the detrimental impact of SMS spam. In this study, we aim to highlight the challenges encountered in the current landscape of SMS spam detection and filtering. To address these challenges, we present a new SMS dataset comprising more than 68K SMS messages with 61% legitimate (ham) SMS and 39% spam messages. Notably, this dataset, we release for further research, represents the largest publicly available SMS spam dataset to date. To characterize the dataset, we perform a longitudinal analysis of spam evolution. We then extract semantic and syntactic features to evaluate and compare the performance of well-known machine learning based SMS spam detection methods, ranging from shallow machine learning approaches to advanced deep neural networks. We investigate the robustness of existing SMS spam detection models and popular anti-spam services against spammers' evasion techniques. Our findings reveal that the majority of shallow machine learning based techniques and anti-spam services exhibit inadequate performance when it comes to accurately classifying SMS spam messages. We observe that all of the machine learning approaches and anti-spam services are susceptible to various evasive strategies employed by spammers. To address the identified limitations, our study advocates for researchers to delve into these areas to advance the field of SMS spam detection and anti-spam services.

Key words:- Spam Evasion Techniques, Machine Learning in Spam Filtering, Deep Neural Networks, Robustness of Spam Detection Models, Evasive Strategies by Spammers.

AUTOMATEDSTROKEPREDICTIONUSINGMACHINELEARNING:ANEXPLAINABLEAND EXPLORATORY STUDY WITH A WEB APPLICATION FOR EARLY INTERVENTION

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Abstract:

Stroke often causes due to blood flow stop to brain and this is one of the deadly diseases. Patientlife can be saved and stroke can be avoided by timely and accurate detection. Existing detection technique requires heavy resources and they make time for prediction. To overcome from this problem many machine learning algorithms were introduced as they are very accurate in medical diseases prediction but existing techniques were suffering from data leakage such as improper handling or missing values, improper categorical data calculation etc. No existing techniques were employing any Explainable model (XAI) which can show which features are helping most in detecting stroke so doctor can give priority on such features for faster recovery. These explainable features can be Smoking, Age, BMI and may be other features.SoauthorofthispaperemployingdifferentprocessingtechniquessuchasRemovingmissingvalues, Imbalance data handling using SMOTE and relevant features selection using CHI2 algorithm. All this processed features will get trained on 6 different algorithms such as Random Forest, KNN, SVM, Logistic Regression, XGBOOST and Naive Bayes. In all algorithm Random Forest is giving high accuracy and each algorithm performance is evaluated in terms of accuracy, precision, recall and FSCORE.For easy understanding of features author employing various graph on Strokes patient data.

Key words:-Stroke detection, Machine learning, Explainable AI (XAI), SHAP,

HYBRID MACHINE LEARNING MODEL FOR EFFICIENT BOTNET ATTACK DETECTION IN IOT ENVIRONMENT

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Abstract:

Cyber-attacks are growing with the rapid development and wide use of internet technology. Botnet attack emerged as one of the most harmful attacks. Botnet identification is becoming challenging due to the numerous attack vectors and the ongoing evolution of viruses. As the Internet of Things (IoT) technology is developing rapidly, many network devices have been subject to botnet attacks leading to substantial losses in different sectors. Botnets pose serious risks to network security and deep learning models have shown potential for efficiently identifying botnet activity from network traffic data. In this research, a botnet identification system is proposed based on the stacking of artificial neural network (ANN), convolutional neural network (CNN), Machine Learning Models, and recurrent neural network (RNN) (ACLR). The experiments are conducted by employing both the individual models, as well as, the proposed ACLR model for performance comparison. The UNSW-NB15 dataset is used for botnet attacks and contains nine different attack types including 'Normal', 'Generic', 'Exploits', 'Fuzzers', 'DoS', 'Reconnaissance', 'Analysis', 'Backdoor', 'Shell code' and 'Worms'. Experimental results indicate the proposed ACLR model gains 0.9698 testing accuracy showing that it is successful in capturing the intricate patterns and characteristics of botnet attacks. The proposed ACLR model's k values (3, 5, 7, and 10) for a K-fold cross-validation accuracy score is 0.9749 indicating that the model's robustness and generalizability are demonstrated by k = 5. In addition, the proposed model detects botnets with a high receiver operating characteristic area under the curve (ROC-AUC) of 0.9934 and a precision-recall area under the curve (PR-AUC) of 0.9950. Performance comparison with existing state-of-the-art models further corroborates the superior performance of the proposed approach. The results of this research can be helpful against evolving threats and enhance cyber security procedures.

Key words:-Cyber attacks,Botnet attack,Internet of Things (IoT),Network security.

DETECTION OF DEEPFAKE VIDEOS USING LONG DISTANCE ATTENTION

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Abstract:

Deepfake videos have emerged as a significant challenge in digital media, posing risks to privacy, security, and public trust. Traditional detection methods rely heavily on local features, which may fail to capture the nuanced manipulations often present in deep fakes. This paper proposes a novel approach for detecting deepfake videos using long-distance attention mechanisms. By leveraging the power of transformers and other attention-based models, the proposed method effectively captures long-range dependencies and subtle inconsistencies across frames. This enhances the ability to detect manipulated content that traditional methods might miss. Experimental results demonstrate that the long-distance attention framework significantly improves detection accuracy, robustness, and generalization across various deepfake datasets. This work presents a promising step toward more reliable deepfake detection systems that can be applied in real-world scenarios.This paper introduces a novel approach for detecting deepfake videos by leveraging long-distance attention mechanisms, which capture relationships across distant frames in a video.By using a combination of long-distance attention with convolutional neural networks (CNNs), our method achieves superior accuracy by identifying subtle temporal anomalies and inconsistencies unique to deepfake videos. We evaluate our model on several benchmark datasets, demonstrating its effectiveness in both accuracy and robustness compared to existing techniques. This research contributes to advancing deepfake detection, aiding in the prevention of misinformation and enhancing video integrity verification.

Key words:- Deepfake Detection, Long Distance Attention, Machine Learning,Video Analysis , Deepfake Identification , Deep learning ,Fake Media Analysis.

AN ENHANCED WEAPON DETECTION SYSTEM USING DEEP LEARNING

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Abstract:

Security is always a main concern in every domain, due to a rise in crime rate in a crowded event or suspicious lonely areas. Abnormal detection and monitoring have major applications of computer vision to tackle various problems. Due to growing demand in the protection of safety, security and personal properties, needs and deployment of video surveillance systems can recognize and interpret the scene and anomaly events play a vital role in intelligence monitoring. This paper implements automatic gun (or) weapon detection using a convolution neural network (CNN) based SS D and Faster RCNN algorithms. Proposed implementation uses two types of datasets. One dataset, which had pre-labelled images and the other one is a set of images, which were labelled manually. Results are tabulated, both algorithms achieve good accuracy, but their application in real situations can be based on the trade-off between speed and accuracy.Weapon or Anamoly detection is the identification of irregular, unexpected, unpredictable, unusual events or items, which is not considered as a normally occurring event or a regular item in a pattern or items present in a dataset and thus different from existing patterns. An anomaly is a pattern that occurs differently from a set of standard patterns. Therefore, anomalies depend on the phenomenon of interest [3] [4]. Object detection uses feature extraction and learning algorithms or models to recognize instances of various category of objects.Proposed implementation focuses on accurate gun detection and classification. Also concerned with accuracy, since a false alarm could result in adverse responses [11] [12]. Choosing the right approach required to make a proper trade-off between accuracy and speed. Figure 1 shows the methodology of weapons detection using deep learning. Frames are extracted from the input video. Frame differencing algorithm is applied and bounding box created before the detection of object.

Key words:-Computer vision, weapon detection, Faster RCNN, SSD, CCTV, Artificial Intelligence (AI)

A HYBRID NETWORK ANALYSIS AND MACHINE LEARNING MODEL FOR ENHANCED FINANCIAL DISTRESS PREDICTION

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Abstract:

Financial distress prediction is crucial to financial planning, particularly amid emerging uncertainties. This study introduces a novel methodology for predicting financial distress by amalgamating network analysis and machine learning techniques. The approach involves establishing two company networks based on their similarity and correlation in crucial financial indicators. The first network reflects similarity across five features, while the second captures correlation in the most critical feature. Subsequently, seven network-centric features are extracted and integrated into the dataset as new variables. Community detection algorithms are also applied to cluster companies, with the resulting labels added as categorical variables. This process yields a modified dataset comprising both initial and network-basedvariables. Five classification algorithms are employed to forecast financial distress across three scenarios. Initially, models are trained using only the initial features. In subsequent scenarios, network-centric features from similarity and correlation networks are incorporated, enhancing the predictive accuracy of machine learning models. Notably, features from the similarity network play a pivotal role in this improvement. The proposed model showcases superior predictive capabilities and offers a holistic understanding of the dynamic interactions among financial entities. The results underscore the efficacy of network-based strategies in refining financial distress prediction models, providing valuable insights for decision-makers.

Key words:-Financial Distress Prediction, Novel Methodology, Correlation Network, Machine Learning Techniques, Clustering Companies.

ANALYZING EMPLOYEE RETENTION FACTORS USING MACHINE LEARNING

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Abstract:

Employee retention is a critical issue for organizations, as high turnover rates can lead to increased recruitment costs, loss of productivity, and disruption in workflow. This study aims to analyze the factors influencing employee retention using machine learning techniques. By leveraging employee data, such as demographic information, job satisfaction, performance ratings, and work environment characteristics, we apply various machine learning models to predict employee turnover and identify key factors that contribute to employee retention.The study explores classification algorithms such as Logistic Regression, Decision Trees, Random Forest, and Support Vector Machines (SVM) to predict whether an employee is likely to leave or stay. Feature importance analysis is performed to uncover which factors have the most significant impact on employee retention, such as salary, career development opportunities, work-life balance, job engagement, and managerial support.The results of the analysis provide actionable insights for organizations to enhance their retention strategies by focusing on the most influential factors. By proactively addressing these areas, companies can reduce turnover, improve employee satisfaction, and increase organizational stability. The research concludes with a discussion of the effectiveness of different machine learning models in predicting employee retention and provides recommendations for their implementation in real-world scenarios.

Key words:-Employee attrition, machine learning, data preprocessing, employee retention, sentiment analysis, attrition prediction, HR analytics, workforce stability, feature engineering, predictive modeling, data visualization.

AN ADAPTIVE CYBERBULLYING-RELATED HATE SPEECH DETECTION APPROACH BASED ON NEURAL NETWORKSWITH UNCERTAINTY

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Abstract:

The rise in cyberbullying and hate speech online has created an urgent need for advanced detection systems capable of accurately identifying harmful content. This paper proposes an adaptive approach that leverages neural networks with uncertainty estimation to detect cyberbullying-related hate speech. Unlike traditional methods, this model integrates uncertainty measures to address the ambiguous nature of language, where similar phrasing can often carry different intentions. By using transfer learning and ensemble techniques, the model adapts to various datasets, making it effective across diverse social media platforms. Experiments reveal that the proposed approach improves detection accuracy and robustness, especially in cases where linguistic subtleties often lead to misclassification. This adaptive model has potential applications in real-time moderation systems, contributing to safer and more inclusive online spaces.The model further uses transfer learning to continuously improve its performance by transferring insights learned from one dataset to another, facilitating real-time adaptation to emerging language patterns and new forms of cyberbullying. Experimentation on real-world data demonstrates that this approach not only boosts detection accuracy but also reduces false positives, which are common in systems that lack adaptive uncertainty handling. Results indicate that this neural network-based approach achieves higher precision and robustness in distinguishing hate speech embedded in subtle language, while maintaining adaptability across different languages and regions. This research contributes to the development of intelligent moderation tools that offer practical solutions for social media platforms, fostering a safer and more supportive digital space for all users.

Key words:-Deep Learning in NLP,Digital Safety Solutions, Ensemble Learning, Social Media Moderation

PREDICTING ENERGY DEMAND USING MACHINE LEARNING: EXPLORING TEMPORAL AND WEATHER-RELATED PATTERNS,VARIATIONS, AND IMPACTS

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Abstract:

Predicting Energy Demand Using Machine Learning: Exploring Temporal and Weather-Related Patterns, Variations, and Impacts, aims to create a machine learning model that can accurately predict energy demand by analyzing temporal and weather-driven factors. Predicting energy demand is essential for efficient resource management, cost control, and sustainable practices in the energy sector. This project will focus on incorporating key variables such as temperature, humidity, seasonality, and time-of-day trends, all of which are known to influence energy consumption. By building a comprehensive dataset from historical energy usage and weather data, the model will be able to capture significant demand patterns, ultimately allowing for improved forecasting and decision-making. The methodology includes data collection, preprocessing, and exploratory data analysis (EDA) to uncover relevant trends and relationships between energy use and environmental factors. Using this insight, we will create specific features, such as seasonality indicators and peak usage markers, which will improve the model's accuracy. Various machine learning algorithms will be tested, including linear regression, random forests, and Long Short-Term Memory (LSTM) networks, to identify the approach that offers the best predictive performance. Evaluation metrics such as Mean Absolute Error (MAE) and Root Mean Squared Error (RMSE) will guide the model selection and optimization process. The final result is expected to be an optimized, reliable model that captures the intricate impact of temporal and weather-related variations on energy demand, providing energy providers with actionable insights for more efficient, sustainable resource distribution..

Key words:-Predicting energy demand, machine learning, temporal patterns, weather impacts, energy consumption, data-driven forecasting, temperature, humidity, seasonality, LSTM, random forests, feature engineering, energy efficiency, sustainability, resource management.

AUTONOMOUS LANDING SCENE RECOGNITION BASED ON TRANSFER LEARNING FOR DRONES

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Abstract:

In this ,we study autonomous landing scene recognition with knowledge transfer for drones. Considering the difficulties in aerial remote sensing, especially that some scenes are extremely similar, or the same scene has different representations in different altitudes, we employ a deep convolutional neural network (CNN) based on knowledge transfer and fine-tuning to solve the problem. Then, LandingScenes-7 dataset is established and divided into seven classes. Moreover, there is still a novelty detection problem in the classifier, and we address this by excluding other landing scenes using the approach of thresholding in the prediction stage. We employ the transfer learning method based on ResNeXt-50 backbone with the adaptive momentum (ADAM) optimization algorithm. We also compare ResNet-50 backbone and the momentum stochastic gradient descent (SGD) optimizer. Experiment results show that ResNeXt-50 based on the ADAM optimization algorithm has better performance. With a pre-trained model and fine-tuning, it can achieve 97.8450% top-1 accuracy on the LandingScenes-7 dataset, paving the way for drones to autonomously learn landing scenes..

Key words:-Convolutional neural network, ResNeXt-50, Adaptive Momentum (ADAM) optimization algorithm.

MONKEYPOX DIAGNOSIS WITH INTERPRETABLE DEEP LEARNING

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Abstract:

As the world gradually recovers from the impacts of COVID-19, the recent global spread of Monkeypox disease has raised concerns about another potential pandemic, highlighting the urgency of early detection and intervention to curb its transmission. Deep Learning (DL)-based disease prediction presents a promising solution, offering affordable and accessible diagnostic services. In this study, we harnessed Transfer Learning (TL) techniques to tweak and assess the performance of an array of six different DL models, encompassing VGG16, InceptionResNetV2, ResNet50, ResNet101, MobileNetV2, VGG19, and Vision Transformer (ViT). Among this diverse collection, it was the modified versions of the VGG19 and MobileNetV2 models that outshone the others, boasting striking accuracy rates ranging from an impressive 93% to an astounding 99%. Our results echo the findings of recent research endeavors that similarly showcase enhanced performance when developing disease diagnostic models armed with the power of TL. To add to this, we used Local Interpretable Model Agnostic Explanations (LIME) to lend a sense of transparency to our model's predictions and identify the crucial features correlating with the onset of Monkeypox disease. These findings offer significant implications for disease prevention and control efforts, particularly in remote and resource-limited areas.

Key words:-Deep Learning (DL), Monkeypox Diagnosis, Transfer Learning (TL), Convolutional Neural Networks (CNNs), VGG19, MobileNetV2, Vision Transformer (ViT), Interpretable AI, Local Interpretable Model Agnostic Explanations (LIME), Computer Vision, Disease Detection)

IDENTIFYING ALCOHOL-RELATED INFORMATION FROM UNSTRUCTUREDBILINGUAL CLINICAL NOTES WITH MULTILINGUAL TRANSFORMERS

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Abstract:

As a key modifiable risk factor, alcohol consumption is clinically crucial information that allows medical professionals to further understand their patients' medical conditions and suggest appropriate lifestyle modifying interventions. However, identifying alcohol-related information from unstructured free-text clinical notes is often challenging. Not only are the formats of the notes inconsistent, but they also include a massive amount of non-alcohol-related information. Furthermore, for medical institutions outside of English-speaking countries, these clinical notes contain both a mixture of English and local languages, inducing additional difficulty in the extraction. Thanks to the increasing availability of electronic medical record (EMR), several previous works explored the idea of using natural language processing (NLP) to train machine learning models that automatically identify alcohol-related information from unstructured clinical notes. However, all these previous works are limited to English clinical notes, thereby able to leverage various large-scale external ontologies during the text preprocessing. Furthermore, they rely on simple NLP techniques such as the bag-of-words models that suffer from high dimensionality and out-of-vocabulary issues. Addressing these issues, we adopt fine-tuning multilingual transformers. By leveraging their linguistically rich contextual information learned during their pre-training, we are able to extract alcohol-related information from unstructured clinical notes without preprocessing the clinical notes on any external ontologies. Furthermore, our work is the first to explore the use of transformers in bilingual clinical notes to extract alcohol-related information. Even with minimal text preprocessing, we achieve extraction accuracy of 84.70% in terms of macro F-1 score.

Key words:-Clinical Informatics ,Alcohol information extraction, natural language processing, information extraction from clinical notes, multilingual transformers.

PAIN RECOGNITION WITH PHYSIOLOGICAL SIGNALS USING MULTILEVEL CONTEXT INFORMATION

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Abstract:

Automatic pain recognition is essential in healthcare. In previous studies, automatic pain recognition methods preferentially apply the features extracted from physiological signals for conventional models. These methods provide good performance but mainly rely on medical expertise for feature extraction of physiological signals. This paper presents a deep learning approach based on physiological signals that have the role of both feature extraction and classification, regardless of medical expertise. This paper proposes multilevel context information for each physiological signal discriminating between pain and painlessness. Experimental results prove that multi-level context information performs more significantly than uni-level context information based on Part A of the BioVid Heat Pain database and the Emopain 2021 dataset. For Part A of the BioVid Heat Pain database, our experimental results for pain recognition tasks include Pain 0 and Pain 1, Pain 0 and Pain 2, Pain 0 and Pain 3, and Pain 0 and Pain 4.

Key words:- Deep Learning in Healthcare, BioVid Dataset, Contextual Deep Learning.

WATER QUALITY PREDICTION USING MACHINE LEARNING

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Abstract:

The major goal of this project is to use machine learning techniques to measure water quality. A potability is a numerical phrase that is used to assess the quality of a body of water. The following water quality parameters were utilized to assess the overall water quality in terms of potability in this study.ph, Hardness, Solids, Chloramines, Sulfate, Conductivity, Organic Carbon, Trihalomethanes, Turbidity were the parameters. To depict the water quality, these parameters are used as a feature vector. To estimate the water quality class, the paper used two types of classification algorithms: Decision Tree (DT) and K- Nearest Neighbor (KNN). Experiments were carried out utilizing a real dataset containing information from various locations around Andhra Pradesh, as well as a synthetic dataset generated at random using parameters. Based on the results of two different types of classifiers, it was discovered that the KNN classifier outperforms other classifiers. According to the findings, machine learning approaches are capable of accurately predicting the potability. Potability, Water Quality Parameters, Data Mining, and Classification are all index terms.

Keyword:- Feature Vector, K-Nearest Neighbor (KNN), Synthetic Dataset

PASSWORD MANAGER WITH MULTI-FACTOR AUTHENTICATON

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Abstract:

Data breach is a serious issue as it leaks the personal information of more than billions of users and their privacy is compromised. More than 77% of organizations do not have a Cyber Security Incident Response plan. So, it is necessary to be informed of network security and ways to store and generate secured passwords. Having different and random passwords for ones digital accounts can exponentially increase the security of user's data. The goal of this project is to build a password manager which can securely store and encrypt passwords and other data. The multifactor authentication will provide increased security to validate the user into password management system. Multifactor authentication system includes physical security key and graphical password authentication. A robust strategy for password management is essential, and using unique, complex passwords for each digital account can exponentially enhance the security of user data. This project aims to develop a comprehensive password manager that not only securely stores and encrypts passwords but also offers additional layers of protection through multifactor authentication (MFA).

Key words:-Security, Encryption, Multifactor Authentication, Password Management, User Privacy.

PATIENT'S HEALTH ANALYSIS USING MACHINE LEARNING

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Abstract:

The main aim of this study was to analyze patient health using Machine Learning (ML). To do this, we used the Extreme Gradient Boost (XGBoost) classifier and auto-ML-Pycaret techniques. The sequential procedure we followed for the XGBoost model is data analysis, feature engineering, and model building, which are discussed in this paper. For these tasks, we used data science tools such as the Jupyter notebook and Google Colab (GC). Subsequently, we discuss the auto-ML-Pycaret model, which is an excellent tool for ML tasks. Finally, a performance comparison is performed between the two models based on their accuracy levels. The accuracy rate for the first ML model was 87%, and for the auto ML Pycaret model, One of the key advantages of PyCaret is its ability to handle multiple machine learning models with minimal human intervention, automatically selecting the best algorithm based on various performance metrics. This not only saves time but also simplifies the model selection process, especially when dealing with large datasets or complex problems. Machine learning in patient health analysis has tremendous potential to transform healthcare. By leveraging large datasets, ML algorithms help with early diagnosis, personalized treatments, and predictive analytics, ultimately improving patient outcomes and reducing the burden on healthcare systems.

Key words:- Auto-ML PyCaret, Machine Learning, XGBoost Classifier.

THYROID DISEASE CLASSIFICATION USING MACHINE LEARNING

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Abstract:

Thyroid ailment is a common endocrine disease that affects millions of people around the world. For effective treatment, accurate diagnosis and prediction are essential. The efficiency of various machine learning models for predicting thyroid disease is investigated in this research study. Decision Tree, Logistic Regression, Random Forest, Support Vector Machine (SVM), k-Nearest Neighbour (KNN), Naive Bayes, Kmeans, and an ensemble model were among the models used. The results showed that the Logistic Regression model was 96% accurate, while the Decision Tree and Random Forest models were both 99% accurate. SVM had an 87% accuracy rate, KNN had a 95% accuracy rate, and the ensemble model had a 97% accuracy rate. The accuracy rates of Naive Bayes and K-Means were lower. The outcomes of this study emphasise the potential of machine learning algorithms, notably Logistic Regression, decision tree, random forest, and ensemble models, in accurately diagnosing and predicting thyroid disease. The results showed that the Logistic Regression model was 96% accurate, while the Decision Tree and Random Forest models were both 99% accurate. SVM had an 87% accuracy rate, KNN had a 95% accuracy rate, and the ensemble model had a 97% accuracy rate. The accuracy rates of Naive Bayes and K-Means were lower..

Keywords: Machine Learning, KNN algorithms,Naïve Bayes,Kmeans

RESEARCH ON ARTIFICIAL INTELLIGENCE: DEEP LEARNING TO IDENTIFY PLANT SPECIES

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Abstract:

Quick response (QR) codes can be used for antenna applications, in addition to being used as information-sharing and security devices. QR-Code pixelated antennas present a game- changing solution for wireless communication and security applications. Their ability to facilitate efficient data transfer, compact form factor, compatibility with existing infrastructure, and enhanced security measures make them highly desirable for a wide range of applications, ranging from consumer electronics to industrial systems. The aim of this paper is to demonstrate the feasibility and success of QR code structures as antennas in wireless communication applications. It is designed on a low-cost FR4 substrate board. The suggested antenna configuration contains a modified coaxial-fed patch resonator with a QR pixelated configuration and a full ground plane providing a broad bandwidth of 8 to 9.6 GHz. The critical characteristics have been examined in simulations and sufficient return loss, radiation gain, levels are all achievable with the planned compact QR antenna design.

Keyword:- Pixelated Design,Multi-Factor Authentication,QR-Code Integration.

EARLY DIAGNOSIS FOR DENGUE DISEASE PREDICTION USING EFFICIENT MACHINE LEARNING TECHNIQUES BASED ON CLINICAL DATA

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Abstract:

Dengue fever is a worldwide issue, especially in Yemen. Although early detection is critical to reducing dengue disease deaths, accurate dengue diagnosis requires a long time due to the numerous clinical examinations. Thus, this issue necessitates the development of a new diagnostic schema. The objective of this work is to develop a diagnostic model for the earlier diagnosis of dengue disease using Efficient Machine Learning Techniques (EMLT). This paper proposed prediction models for dengue disease based on EMLT. Five different efficient machine learning models, including K-Nearest Neighbor (KNN), Gradient Boosting Classifier (GBC), Extra Tree Classifier (ETC), eXtreme Gradient Boosting (XGB), and Light Gradient Boosting Machine (LightGBM). All classifiers are trained and tested on the dataset using 10-Fold Cross Validation and Holdout Cross-Validation approaches.

On a test set, all models were evaluated using different metrics: accuracy, F1-sore, Recall, Precision, AUC, and operating time. Based on the findings, the ETC model achieved the highest accuracy in Hold-out and 10-fold cross-validation, with 99.12 % and 99.03 %, respectively. In the Holdout cross-validation approach, we conclude that the best classifier with high accuracy is ETC, which achieved 99.12 %. Finally, the experimental results indicate that classifier performance in holdout cross-validation outperforms 10-fold cross-validation. Accordingly, the proposed dengue prediction system demonstrates its efficacy and effectiveness in assisting doctors in accurately predicting dengue disease

Keyword:- Efficient Machine Learning Techniques (EMLT), Extra Tree Classifier (ETC), Gradient Boosting Classifier (GBC), Cross-Validation.

BLOCKCHAIN-BASED MULTI-FACTOR GROUP AUTHENTICATION IN METAVERSE

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Abstract:

Under the metaverse scenario, users communicate with metaverse platform server through public wireless channels, and the transmitted sensitive information is vulnerable to security threats from potential malicious adversary. In addition, when there is a large number of users perform group authentication simultaneously, it is easy to cause network congestion and overload of the main server. The article presents a blockchain based multi-factor group authentication scheme suitable for metaverse scenario. In particular, in order to avoid the defects of single-factor authentication, our scheme uses multi-factor authentication data including biological information to participate in the generation of anchor key. In our scheme, the user's multi-factor authentication data is uniquely bound to the smart device and formed into a key-value pair and stored in the blockchain. And the tamper-resistance of the blockchain is used to trace malicious adversary. In addition, we design the group authentication mechanism to optimize the signaling process to avoid network congestion. Finally, security analysis demonstrates that our scheme can provide extra security functions such as malicious adversary traceability. Meanwhile, the performance analysis demonstrates that our scheme can improve the efficiency of authentication.

Key words:- Decentralized Identity, Multi-Factor Authentication, Group Authentication.

IMAGE CLASSIFICATION OF RICE LEAF DISEASES USING RANDOM FOREST ALGORITHM

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Abstract:

Rice is a staple food for a significant portion of the world's population, and its cultivation is often threatened by various leaf diseases. Timely and accurate disease identification is crucial for effective crop management and yield optimization. This study presents an image classification approach using the Random Forest algorithm to diagnose rice leaf diseases. We collected a diverse dataset of rice leaf images, representing healthy leaves and various disease symptoms. The Random Forest model was trained on extracted features from these images, including color, texture, and shape descriptors. Our results demonstrate that the model achieves high accuracy in classifying different diseases, such as bacterial blight, leaf blast, and brown spot. Additionally, the model's interpretability provides insights into the key features contributing to disease classification. This approach enhances the speed and accuracy of disease diagnosis and supports sustainable agricultural practices by enabling farmers to make informed decisions based on real-time data.Moreover, the study highlights the scalability and adaptability of the Random Forest algorithm in various agricultural contexts. By integrating this model with mobile applications, farmers can leverage technology to monitor crop health effectively and receive instant feedback on disease status. This research emphasizes the importance of datadriven approaches in promoting resilient farming practices in the face of changing climatic conditions and emerging disease threats.

Key words:-Image classification, Agricultural technology, Disease diagnosis, Machine learning.

CLAP LEARNING AUDIO CONCEPT FROM NATURAL LANGUAGE SUPERVISION

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Abstract:

Mainstream Audio Analytics models are trained to learn under the paradigm of one class label to many recordings focusing on one task. Learning under such restricted supervision limits the flexibility of models because they require labelled audio for training and can only predict the predefined categories. Instead, we propose to learn audio concepts from natural language supervision. We call our approach Contrastive Language-Audio Pre-training (CLAP), which learns to connect language and audio by using two encoders and a contrastive learning to bring audio and text descriptions into a joint multimodal space. We trained CLAP with 128k audio and text pairs and evaluated it on 16 downstream tasks across 8 domains, such as Sound Event Classification, Music tasks, and Speech-related tasks. Although CLAP was trained with significantly less pairs than similar computer vision models, it establishes SoTA for Zero-Shot performance. Additionally, we evaluated CLAP in a supervised learning setup and achieve SoTA in 5 tasks. Hence, CLAP's Zero-Shot capability removes the need of training with class labels, enables flexible class prediction at inference time, and generalizes to multiple downstream tasks.

Keyword:-Natural learning process, Machine Learning,CLAP

HUMAN DISEASE PREDICTION BASED ON SYMPTOMS

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Abstract:

There are new diseases discovered in the 21st century which have identical and additional symptoms to the previous diseases but these new diseases are far more dangerous than the previous ones and have some additional symptoms. S o, In this work the new diseases can be identified by taking the input from the user and identifying the disease and displaying it on the users smart screen display. This work aim is to reduce the deaths of people by identifying the disease and cure it in advance. The Random Forest and Naive Bayes algorithms are used for predicting the disease. This prediction is done by considering and comparing the accuracies of both the algorithms and gives the predicted disease as output which has best accuracy. Its implementation is completed via python programming language and tkinter library.

Key words:-Symptom Analysis, Disease Classification, Machine learning, Predictive Modeling, Health Informatics

ANALYZE AND FORECAST THE CYBER ATTACK DETECTION PROCESS USING MACHINE LEARNING TECHNIQUES

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Abstract:

One of the most crucial global concerns is the issue of cybercrime, which leads to significant financial losses for nations and their citizens every day. The frequency of cyberattacks has steadily increased, emphasizing the need to identify the individuals behind these criminal activities and understand their strategies. Detecting and preventing cyber attacks pose significant challenges, but recent advancements have introduced security models and prediction tools based on artificial intelligence to tackle these issues. Although there is a wealth of literature on crime prediction strategies, they may need to be more effectively suited for awaiting cybercrime and cyber-attack techniques. One potential solution to address this problem involves utilizing real-world data to determine the occurrence of an attack and identify the responsible party. This information encompasses details about the offense, offender demographics, property damage, and attack vectors. Forensic teams can collect information from victims of cyber-attacks through application processes. This research study employs machine learning techniques to analyze cybercrime using two models and predict how the attributes can contribute to identifying the method of cyber-attack and the criminal. This study has compared eight different machine-learning techniques and discovered that they yielded similar results in terms of accuracy.

Keyword:- SVM linear model, Cyber-attack detection,

IMAGE BASED BIRD SPECIES IDENTIFICATION USING CONVOLUTIONAL NEURAL NETWORK

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Abstract:

Life's routine tempo appears to be rapid and energetic and includes diverse tasks. Bird-watching is a popular hobby which offers relaxation in everyday life. Innumerable people visit bird sanctuaries to observe the elegance of different species of birds. To provide birdwatchers with a convenient tool for identifying the birds in their natural habitat, we developed a Deep Learning model to help birders recognize 60 bird species. We implemented this model to extract information from bird images using the Convolutional Neural Network (CNN) algorithm. We gathered a dataset of our own using Microsoft's Bing Image Search API v7. We created an 80:20 random split of the data. The classification accuracy rate of CNN on the training set was observed to be 93.19%. The accuracy on testing set was observed to be 84.91%. The entire experimental research was carried out on Windows 10 Operating System in Atom Editor with TensorFlow library.

Key words :- Deep Learning, CNN Model, Classification and Prediction, TensorFlow, Keras.

RESEARCH ON ARTIFICIAL INTELLIGENCE: DEEP LEARNING TO IDENTIFY PLANT SPECIES

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Abstract:

Nowadays, people pay more attention in artificial intelligence (AI) research, and they try to make Al smarter. The machine learning became a popular subject, especially in object recognition area. Aiming at providing a faster and more accurate plant species recognition program, the author introduced the deep learning and convolution neural network (CNN), and decided to build a CNN project with PyCharm, anaconda, Kera to find the best way to improve recognition program accuracy and recognition speed. The new system will implement a state-of-the-art convolutional neural network architecture tailored for plant species recognition. By leveraging transfer learning from a pretrained network, the model can build on learned feature representations transferable to plant images.The author tried to change the learning epoch time and learning data set capacity to found the best solution. After tests were finished, the result of output plots analyse is that both adding learning epochs time and extend training image set are all helpful to improve recognition accuracy and speed. As for the effect of increase learning time, it is more obvious in improving accuracy while extend training set size, which is a better method to reduce recognition time.

Keyword:- AI, machine learning, deep learning, CNN, plant species recognition.

FAKE PROFILE IDENTIFICATION USING MACHINE LEARNING

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Abstract:

Online social networks have changed how we connect and interact with others. They make it easy to meet new friends and stay in touch. However, a major issue is fake profiles, where people impersonate others, causing harm or spreading false information. Many studies have tried to tackle this problem using various methods. In our paper, we propose a machine learning technique to detect fake profiles more effectively. We collected and cleaned a dataset with information like profile names and follower counts. We then built models and tested different algorithms, finding that the Random Forest classifier worked best for identifying fake profiles. This method offers an efficient way to distinguish between fake and genuine accounts. Our results showed that the Random Forest classifier was the most effective at identifying fake profiles. This technique helps to efficiently tell the difference between fake and real accounts, making online spaces safer for everyone.

Keyword:- Machine Learning, Random Forest.

REAL TIME CROWD DETECTION AND MONITORING SYSTEM USING MACHINE LEARNING

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Abstract:

The COVID-19 pandemic has unquestionably warned all of us that, the outbreak of an infection can lead to a pandemic- like situation all over the world. In order to prevent outbreaks and provide better healthcare, appropriate crowd detection and monitoring systems must be deployed in public areas. By effectively implementing social distancing measures, the number of new infections can be greatly decreased. This idea served as the inspiration for the creation of a real-time Crowd Detection and Monitoring System (CDMS) for social distancing. This paper proposes a fully autonomous system for Real-Time Crowd Detection and Monitoring to help the educational institutions to monitor the students inside the premises more effectively. This system is developed using an OpenCV based Histogram of Oriented Gradients (HOG) and Support Vector Machine (SVM) detector to detect and count the number of people gathered at an instance. The system raises an alarm to alert the people and adhere to the rules if the gathering is more than the threshold/permitted number of people in the cluster.

Key words:- Crowd Detection, Real-Time Monitoring, Machine Learning, Computer Vision, Object Detection, Deep Learning, Surveillance Systems, Image Processing, Anomaly Detection, Data Analytics**.**

Classification of Subspecies of Honey Bees using Convolutional Neural Network

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Abstract:

Honey bees are vital for humans and the ecosystem; humans use bee products for various purposes and honey bees play an essential role in pollination. Identifying the subspecies of honey bees is essential for beekeepers, bee breeders, and researchers. Conventional methods of identification are time-consuming and expensive, as such, a more efficient and accurate technique is required. This paper proposes a computer vision-based method to classify subspecies of honey bees, with a dataset consisting of seven honey bee subspecies utilised. Due to the unavailability of a sufficient amount of labelled images to train a model, Transfer Learning (TL) technique has been employed. The Inception v3 model has been utilized as the main Convolutional Neural Network architecture; trained initially using the ImageNet dataset and then fine-tuned using the honey bee dataset. Image augmentation technique has also been used to reduce the impact of an imbalanced and small dataset. The Transfer Learningbased Inception v3 model was trained using the Sigmoid Focal loss function and demonstrated an accuracy of 94% with a weighted average F1 score of 0.94. This demonstrates the applicability of computer vision in the classification of honey bees.

Keywords:A study published in Apidologie in 2022 explored this topic,Researchers used four di fferent CNN models (ResNet 50, MobileNet V2, Inception Net V3, and Inception ResNet V2) to analyze 9887 wing images of honey bees from 7 different subspecies and one hybrid1.

INDIAN CURRENCY CLASSIFICATION USING DEEP LEARNINGTECHNIQUES

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Abstract:

Progression and evolution of technology has super- seeded mechanical human workload in almost every domain with the operation of machines. The currency paper recognition is applicable in various domains of automatic selling goods systems and in banking systems. In the modern transition world for the automatic current recurring systems, the precise identification of paper currency notes is indeed an essential need. Machines often find it difficult in identifying and recognising the currencies in the market when the currency notes have turned bleary and damaged. It is hard for visually disabled people without any technological support or assistance to predict and analyze genuine currency notes. The accuracy of currency notes analysis identification have been refined and boosted throughout with the assistance of these models. Our research methodologies are in line and meeting the desired expectations. This paper presentsan Indian Paper Currency Prediction Analysis, proposes an optimized model to recognise the currencies effectively. The Deep Learning approach of CNN model technique has improved the effective analysis of currency recognition with improved accu- racy, high speed and efficiency along with complete automatic readily procedure with no human intervention and minimal complexity. This paper represents a strategy which is parted into two divisions, Keras trained a DL Model as well as hosted a Flask based web app on Heroku.Our proposed algorithm design and experimental based results are useful for majorly visually impaired people for differentiating all sorts of available denominations.

Keywords: Indian Currency Classification, Deep Learning, Image Classification, Convolutional Neural Networks, Currency regonition TensorFlow/PyTorch.

An Asymmetric Loss with Anomaly Detection LSTM Framework for Power Consumpition Prediction

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Abstract:

Building an accurate load forecasting model with minimal underpredictions is vital to prevent any undesired power outages due to underproduction of electricity. However, the power consumption patterns of the residential sector contain fluctuations and anomalies making them challenging to predict. In this paper, we propose multiple Long Short-Term Memory (LSTM) frameworks with different asymmetric loss functions to impose a higher penalty on underpredictions. We also apply a densitybased spatial clustering of applications with noise (DBSCAN) anomaly detection approach, prior to the load forecasting task, to remove any present outliers. Considering the effect of weather and social factors, seasonality splitting is performed on the three considered datasets from France, Germany, and Hungary containing hourly power consumption, weather, and calendar features. Root-mean-square error (RMSE) results show that removing the anomalies efficiently reduces the underestimation and overestimation errors in all the seasonal datasets. Additionally, asymmetric loss functions and seasonality splitting effectively minimize underestimations despite increasing the overestimation error to some degree. Reducing underpredictions of electricity consumption is essential to prevent power outages that can be damaging to the community.

Key words:- Load forecasting,Underprediction,Power Consumption Patterns,Long Short-Term Memory(LSTM),Density-Based Spatial Clustering of Applications with Noise(DBSCAN)

Fast Lane Detection Based on Attention Mechanism

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Abstract:

As an important subtask in the field of unmanned driving, lane detection has transitioned in recent years from tradi- tional image processing to a deep learning-based neural network approach. However, since the early deep learning methods are based on semantic segmentation at the pixel level, their large network structures cannot meet the real-time requirements. To solve the real-time problem, a new network structure based on predefined rows, represented by UFAST, is proposed. In the architecture of this network model, the network parameters are significantly reduced, allowing the system's real-time perfor- mance to be satisfied. To improve the performance of recognizing lanes in the framework of this model, we introduce attention mechanism into the model by considering the habits of real human driving. Finally, we not only improve the performance of the model framework in non-ideal conditions such as poor lighting and vehicle occlusion by nearly 1.9%, but also increase the number of model parameters by less than 0.2% of the UFAST. We address our codes at https://github.com/APPZ99/Fast-Lane-Detection- Based-on-Attention-Mechanismon

Key words:-Fast Lane Detection,Attention Mechanism, Computer Vision,Deep Learning, Convolutional Neural Networks (CNN), Image Processing.

EDGE ASSISTED CRIME PREDICTION AND EVALUATION FRAMEWORK FOR MACHINE LEARNING ALGORITHMS.

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Abstract:

The growing global populations, particularly in major cities, have created new problems, notably in terms of public safety regulation and optimization. As a result, in this paper, a strategy is provided for predicting crime occurrences in a city based on historical events and demographic observation. In particular, this study proposes a crime prediction and evaluation framework for machine learning algorithms of the network edge. Thus, a complete analysis of four distinct sorts of crimes, such as murder, rapid trial, repression of women and children, and narcotics, validates the efficiency of the proposed framework. The complete study and implementation process have shown a visual representation of crime in various areas of country. The total work is completed by the selection, assessment, and implementation of the Machine Learning (ML) model, and finally, proposed the crime prediction. Criminal risk is predicted using classification models for a particular time interval and place. To anticipate occurrences, ML methods such as Decision Trees, Neural Networks, K-Nearest Neighbors, and Impact Learning are being utilized, and their performance is compared based on the data processing and modification used. A maximum accuracy of 81% is obtained for Decision Tree algorithm during the prediction of crime. The findings demonstrate that employing Machine Learning techniques aids in the prediction of criminal events, which has aided in the enhancement of public security. Index Terms—Machine Learning, Edge Computing, Crime Prediction, Impact Learning, Decision Tree, KNN, MLP.

Keywords:- Machine Learning, Edge Computing, Crime Prediction, Impact Learning, KNN, MLP, Decision Tree.

Sentimental Analysis Study of Human Thoughts Using Machine Learning Techniques

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Abstract:

Sentimental analysis is an emerging field that leverages machine learning techniques to understand and interpret human thoughts and emotions expressed through text. This study explores various machine learning algorithms to analyze sentiments conveyed in diverse datasets, such as social media posts, customer reviews, and survey responses. By employing natural language processing (NLP) methods, the research aims to develop models that accurately classify sentiments as positive, negative, or neutral.

The study highlights the significance of feature extraction methods, including Bag of Words and word embeddings, in enhancing the performance of sentiment analysis models. Additionally, it examines the impact of different machine learning techniques, such as Support Vector Machines, Naive Bayes, and deep learning approaches, on the accuracy of sentiment classification. The findings indicate that while traditional methods provide a solid foundation, advanced techniques like recurrent neural networks (RNNs) and transformers significantly improve sentiment detection, particularly in complex linguistic contexts.

Ultimately, this research contributes to the understanding of human emotional expressions and provides valuable insights for applications in market research, social media monitoring, and customer feedback analysis. By bridging the gap between human thoughts and machine interpretation, this study paves the way for more sophisticated sentiment analysis tools that can better serve various industries.

Key words:-Sentimental Analysis, Machine Learning, Natural Language Processing (NLP),Support Vector Machine(SVM),Naive Bayes, Logistic Regression, Decision Tress, Random Forest, Deep Learning Techniques, Recurrent Neural Networks (RNN), Convolutional Neural Networks (CNN),Long Short-Term Memory (LSTM)

An Air Quality Prediction Based on Machine Learning

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Abstract:

One major basic right is clean air that is integral to the concept of citizenship and it's while not a doubt, the responsibility of every subject to try to do his/her half to stay the air clean. Air quality prognostication has been looked into because the key answer of early warning and management of pollution. During this paper, we tend to propose an Associate in nursing air quality prediction system supported by a machine learning framework known as the sunshine GBM model, to predict air quality. This model, trained victimization lightweight GBM classifier, take meteorology knowledge jointly of sources for predicting the air quality thereby increasing the prediction accuracy by creating full use of obtainable abstraction data. the prevailing air quality observance stations and satellite meteorologic knowledge offer period air quality observance info that is employed to predict the trend of air pollutants within the future. The projected system was found to administer Associate in nursing accuracy of ninety-two.

Key words :- Air Quality Prediction ,Machine Learning ,Air Pollution Forecasting ,Time Series Analysis ,Environmental Monitoring ,Air Quality Index (AQI) ,Pollutants (PM2.5, PM10, NO2, CO, SO2, O3) ,Sensor Data Analysis ,Data Preprocessing, Predictive Modeling ,Regression Models (e.g., Linear Regression, Decision Trees, Random Forest) ,Deep Learning for AQ Prediction ,LSTM (Long Short-Term Memory Networks)

Machine Learning Based Weather Prediction: A ComparativeStudy of Regression and Classification Algorithms

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Abstract:

Accurate weather forecasting is essential in many industries, including agriculture, transportation, and disaster management, making it a prime use case for machine learning algorithms. In this study, we investigate how to forecast several types of weather, including rain, sunshine, clouds, fog, drizzle, and snow, using a variety of fundamental machine learning methods and boosting algorithms. To train and evaluate the various algorithms, we utilized a dataset made up of historical meteorological data, including characteristics like temperature, humidity, wind speed, and pressure. We performed tests on many machine learning methods, some of which you may be familiar with: decision trees, random forests, naive bayes, knearest neighbors, and support vector machines. We also used boosting techniques like XGBoost and AdaBoost to further enhance the precision of our forecasts. Our results indicated that XGBoost and AdaBoost, two popular boosting algorithms, achieved the highest levels of accuracy (87.86% and 87.33%) compared to the other algorithms we tested. The findings were verified using ROC Curve Analysis and Lift Curve Analysis, which demonstrated that the XGBoost and AdaBoost models performed better in terms of true positive rate, false positive rate, and lift.

Keywords:-Weather forecasting, Machine learning algorithms, XGBoost, Boosting algorithms, Meteorological data, Accuracy, ROC Curve Analysis.

Machine Learning Algorithms based Student Performance Prediction based on Previous Records

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Abstract:

Predicting a student's grade has become increasingly important in order to determine whether or not the student will be placed. In order to develop after this and obtain better placements, it is also being attempted to ascertain the student performance. Based on their recent and prior performances, the prediction will be made. The major goal is to improve the student unsatisfactory performances so that they can improve their academic performance. Here, some of the factors are derived from academics and others from placement exams. Therefore, using these factors, the predictor will determine whether or not the student will be hired by the company. The biggest problem in this situation is deciding which algorithm to utilize because there are numerous classification algorithm strategies that can be applied. Based on the dataset, different algorithms produce different degrees of accuracy. The algorithms used in this article are supervised machine learning algorithms called Bayesian classification. It uses a classification method for machine learning. It is a theory that uses probability to identify a fix for the existing issue

.

Key words: - Student Performance Prediction, Academic Placement, Classification Algorithms, Supervised Machine Learning, Bayesian Classification, Performance Improvement, Predictive Analytics, Placement Exams, Probability Theory, Data Analysis.

CANCER DEATH CASES FORECASTING USING SUPERVISED MACHINE LEARNING

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Abstract:

In India, like in the rest of the world, cancer is a major killer. This research objective is to predict cancer mortality in India, using supervised machine learning methods. Cancer mortality rates in India between 1990 and 2017 are provided by age group, gender, and region using data from the Global Burden of Disease Study. We employ three distinct supervised learning algorithms—linear regression, decision tree regression, and random forest regression—after performing data preprocessing, which includes missing value imputation and feature engineering. Using a variety of criteria, we analyze the effectiveness of these models and conclude that the random forest regression model is superior to the other two. The scope of research is provide a long-term prediction of cancer mortality in India using the best model so it will help health department to work on it. Our research has implications for policymakers and healthcare providers in India, where it may inform efforts to reduce cancer rates and improve cancer care.

Keywords:- Cancer mortality prediction, Supervised machine learning, Linear regression, Decision tree regression, Random forest regression, Data preprocessing

Research on The Application of AI In Medical Imaging Diagnosis

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Abstract:

This paper first expounds the research status for artificial intelligence technology in medical imaging diagnosis, and illustrates the importance of computer-aided diagnosis with examples; Secondly, the current bottlenecks in the development of computer-aided diagnosis technologyare analyzed in detail from the aspects of technology, industry and application; Finally, based on the previous analysis, the paper puts forward some suggestions on how to better use artificial intelligence technology in medical imaging diagnosis with reference to the current actual situations. According to the statistics of the World Health Organization (WHO), among the deaths caused by cancer, cardiovascular disease, diabetes, and chronic respiratory diseases in the world, cancer mortality ranks first, and the number of deaths from the disease accounts for 22.32% of the total number of deaths. However, with the increasing number of hospital patients, the contradiction between supply and demand of medical image analysis continues to increase. In view of this, the emergence of computer-aided diagnosis (CAD) can help doctors to complete the diagnosis and treatment of diseases, and help doctors to obtain image information more quickly and make certain qualitative and quantitative analysis. It has shown great positive effects in intelligent medicine

.

Key words:- Deep learning, Artificial Intelligence, convolutional neural networks, Computer-Aided Diagnosis(CAD).

Exploratory Data Analysis of Titanic Survival Prediction UsingMachine Learning Techniques

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Abstract:

It is very important to find out the root causes of human tragedies in the past so that future crises can be avoided. The incident of 15 April 1912 is an example of a human tragedy in which around 1500 passengers and working staff lost their lives. Continuous research in today's time shows that if the proper statistical assessment was done then it would probably be possible that human devastation could be reduced. In today's era, many new and powerful technologies are available, with the help of which accurate statistical calculations can be done. In this research study, Titanic survivals have been studied based on machine learning techniques. In the study, out of the total entities, 891 entities have been used for training and 418 entitie s have been usedfor the test set and the comparative study of different machine learning algorithms gives importance to this research study.

Keywords: Titanic Dataset, Survival Prediction, Exploratory Data Analysis (EDA), Feature Engineering, Data Preprocessing, Data Cleaning, Missing Values Handling, Categorical Encoding

An Adaptive Machine Learning model for Walmart sales prediction

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Abstract:

In today's data-driven world, where the volume of data is growing at an unprecedented rate, the intelligent use of large datasets has become crucial for industries seeking to make more informed decisions and optimize future strategies. One area where Machine Learning (ML) is proving particularly valuable is in predicting the sales of products and commodities, an increasingly important focus for researchers and practitioners. This paper presents a sophisticated XGBoost-based sales prediction model that combines the power of the XGBoost algorithm with advanced feature engineering techniques to tackle Walmart's sales forecasting challenge. By integrating diverse and high-dimensional attributes, the proposed approach can efficiently extract meaningful patterns and trends, resulting in more precise sales predictions. The model is evaluated on Walmart's sales datasets provided by Kaggle, and the empirical analysis shows that our method consistently outperforms traditional ML techniques, delivering superior accuracy and computational efficiency. These findings underscore the potential of the XGBoost model as a robust solution for managing complex sales data, offering valuable insights for retail businesses seeking data-driven decision-making capabilities. The scalability and performance of this approach make it an essential tool for addressing real-world forecasting problems in the retail industry

Key words:- Machine Learning (ML), sales prediction, XGBoost algorithm, feature engineering, Kaggle, forecasting, prediction accuracy, big data, data-driven decision-making.

The Internet of Things (IoT)-based occupancy monitoring system for optimizing energy consumption in smart buildings

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Abstract:
The Internet of Things (IoT)-based occupancy monitoring system for optimizing energy consumption in smart buildings. The proposed system utilizes sensors and wireless communication protocols to detect and track occupancy patterns in real-time. Machine learning algorithms analyze the collected data to predict occupancy and adjust building systems accordingly. The system integrates with existing building management systems to optimize lighting, heating, ventilation, and air conditioning (HVAC) and other energy-intensive systems. Results show a significant reduction in energy consumption (up to 30%) and improved indoor environmental quality. The system's scalability, flexibility, and adaptability make it an effective solution for smart buildings, promoting energy efficiency, sustainability, and occupant comfort. The Internet of Things (IoT) has revolutionized occupancy monitoring in smart buildings, enabling real-time data collection to optimize energy efficiency. IoT-based techniques use interconnected sensors and devices to detect and analyze occupancy patterns, allowing systems like lighting, HVAC, and security to automatically adjust based on building usage.

Keywords: Sensor Networks, Wireless Communication Protocols (e.g., Zigbee, Bluetooth), Data Analytics, Machine Learning (ML),Artificial Intelligence (AI), Cloud Computing, IoT Device Management, Energy Harvesting, Building Information Modeling (BIM),Cyber-Physical Systems (CPS).

Vehicle Accident Prevention Using Eye Blink Sensor

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Abstract:
This system designs the scene of the accident alarm system based on ARM and GPS. When the accident occurred, the manual and automatic alarm can be realized. Vehicles state and user information as well as alarm locations will be transmitted to the Pre-set of treatment centre; after receiving related alarming information, the treatment centre will display this information on its map. after receiving alarm information, the treatment Centre staffs who are on duty will notice the handler who is the nearest to the scene of the accident in time, in order to reach the scene of accident in the first time, and gain more treatment time for the accident injured, and lower the accident mortality, as well as reduce incidents impacting time on the traffic.

Keyword: -ARM[Advance RISC(Reduced Instruction Set Computer) Machine] , GPS[Global Positioning System] .

IMPLEMENTATION OF MINI SIZE SEARCH ROBOT

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Abstract:
This paper focuses on the design and implementation of a mini-size search robot, which is novel and could be extremely valuable as a search platform to carry out such tasks as searching some narrow areas of city and chassis of vehicle for detection of hazardous or dangerous materials. The robot has a small and solid structure with tracks. A modular electronic system has been developed for the robot, and a friendly human-robot interface has been designed to provide an effective communication between the robot and its operator. In order to utilize the hardware of the robot, a modular, simple yet robust supervision system has been developed for the robot, and a real time and reliable video transmission architecture has been built to facilitate the teleoperation of the robot. Experimental results both in the building and field show that the robot could achieve the design goal.

Keyword: - Consider using longer, more specific keywords like "mini robot for indoor search and rescue" or "small remote-controlled exploration robot. Use keywords that are directly related to the features and capabilities of your mini robot.

IOT BASED ELDER PEOPLE MONITORING SYSTEM

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Abstract:

Nowadays healthcare monitoring systems are more crucial to constantly monitor patient's physiological parameters from sensors on the patient's body. This system can monitor physiological parameters periodically every 10 seconds. Sensor nodes can sense the heart rate, temperature of body, ECG signals, blood pressure etc. After capturing the sensor data, we perform some pre-processing techniques to resolve duplication, errors (outliers) and missing values in sensors data. This healthcare monitoring system mostly detects the abnormal conditions in a patient's body and if any abnormality condition happens then this system immediately sends a message to the doctor or emergency center within one minute. The major advantages of this healthcare system in comparison with the previous system is to reduce the power consumptions, a long lifetime, Increase the speed and enhance the communication coverage area and provide security and privacy to patient's data. This healthcare monitoring system has provided secure IoT based communication with the help of advanced encryption standard (AES) Techniques.

Keyword: - IOT, Wearable sensors, GPS tracking, Fall detection, Biometric monitoring (e.g., heart rate, blood pressure),Environmental sensors (e.g., temperature, humidity),Motion sensors.

IOT BASED AGRICULTURE FIELD MONITORINSYSTEM

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Abstract:

Agriculture is becoming an important growing sector throughout the world due to increasing population. Major challenge in agriculture sector is to improve farm productivity and quality of farming without continuous manual monitoring to meet the rapidly growing demand for food. Apart from increasing population, the climate change is also a big concern in agricultural sector. The purpose of this research work is to propose a smart farming method based on Internet of Things (IoT) to deal with the adverse situations. The smart farming can be adopted which offer high precision crop control, collection of useful data and automated farming technique. This work presents an intelligent agriculture field monitoring system which monitors soil humidity and temperature. After processing the sensed data, it takes necessary action based on these values without human intervention. Here temperature and moisture of the soil are measured, and these sensed values are stored in Thing Speak [11] cloud for future data analysis.

Keyword: Sensors (soil moisture), IoT Devices (Nedelcu, ESP32), Microcontrollers (Arduino, Raspberry Pi), Actuators (crop monitoring cameras)

Airport Security with Proximity Sensor for Bomb Detection

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Abstract:

Explosive material detection considers the identification and classification of explosive materials using techniques from traditional sniffer dogs to cutting-edge sensing technology like thermal imaging, X-ray scanners, and chemical sensors. Explosive detection is applied in various locations, including airports, government buildings, and public areas, to prevent terrorist attacks and criminal actions that attempt to employ explosive devices. The effectiveness of these procedures is dependent on the detection materials, equipment, and environment, so new techniques are continuously explored to increase precision, sensitivity, and detection speed. Because explosive substances present a critical risk to infrastructure, security, and public safety, extensive analysis of existing detection methods is needed. This paper highlights key areas for further research and development in explosive materials detection by addressing identified limitations and challenges. Specifically, advancements in technology, interdisciplinary collaboration, and the integration of AI techniques offer significant opportunities for improving detection accuracy, reducing false positives, and ensuring safer environments for individuals and society.

Keywords: Microcontroller, Proximity sensor, Metal Detector, Buzzer.

Fingerprint Based Voting System

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Abstract:
Fingerprint devices are used in the Electronic Voting machine for voter verification. have designed a fingerprint-based voting machine where there is no need for the user to carry his ID which contains his required details. The person at the polling booth needs only to place his Finger on the device, thus allowing the acquisition of an on-spot fingerprint from the voter which serves as an identification. This Fingerprint reader reads the details from the tag. This data is passed onto the controlling unit for verification. The controller fetches the data from the reader and compares this data with the already existing data stored during the registration of the voters. If the data matches with the pre-stored information of the registered fingerprint, the person is allowed to cast his vote. If not, a warning message is displayed on LCD and the person is barred from polling his vote. Through this review, we intend to present a review on previous works involving Electronic Voting Machines where biometrics, particularly fingerprint have been used for authentication purpose. Several proposals of Online e-voting have also been studied. Upgrading the polling process to Android OS platforms have also been discussed. Proposals of additional authentication measures like alcohol sensors

Keyword: - Biometric Voting, Fingerprint Authentication, Electronic Voting Machine, Arduino, Aadhar, GSM Module, Online Voting, Secured Online Voting.

Smart restaurant with E- menu card using android application

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Abstract:

Today's era is said to be the world of technology. So many efforts have been taken by restaurants owners also to adopt information and communication technologies such as PDA, wireless LAN, costly multi-touch screens etc. to enhance dining experience. This paper highlights some of the limitations of the conventional paper based and PDAbasedfood ordering system and proposed the low-cost touch screen-based Restaurant Management System using an android Smartphone or tablet as a solution. The system consists of a Smartphone/tablet at the customer table contains the android application with all the menu details. The customer tablet and kitchen display connect directly with each other through Wi- Fi. Orders made by the customers will instantly reach the kitchen module. This wireless application is user-friendly, improves efficiency and accuracy for restaurants by saving time, reduces human errors and provides customer feedback. This system successfully overcomes the drawbacks in earlier automated food ordering systems and is less expensive as it requires a one-time investment for gadgets.

Keywords:Technology,Restaurants,Information and Communication Technologies,PDA,Mult itouch screens,PDAbased food ordering system,Restaurant Management System,Menu detail s,Customer tablet,Kitchen display,Orders,Kitchen module,Wireless application,Userfriendly, Efficiency,Reduceshuman errors,Customer feedback,Automated food ordering systems,Oneti me investment,Gadgets.

ADVANCED PUBLIC BUS TRANSPORT MANAGEMENT SYSTEM

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Abstract:

This research paper introduces a comprehensive solution an Advance Public Bus Transport Management System (APBTMS) that aims to address these challenges for the benefit of both passengers and transport management authority. Our proposed system leverages various sensors and IoT (Internet of Things) modules deployed within buses to monitor various onboard activities and physical environmental factors. These enable the making of data-driven decisions in real-time, Facilitating improved operational control. Key components of the system include GPS (Global Positioning System) tracking for real-time bus location updates, passenger density/count through CV (Computer Vision), and continuous monitoring of physical environmental factors such as temperature, humidity, sound magnitude, and vibration magnitude which facilitate accident/abnormalities detection, Fire detection and helps in continuously monitoring road quality. The application of CV technology, along with passenger count, can detect harm-causing objects inside a bus and can compare the faces of passengers with black-listed passengers (involved in previously reported crimes such as theft, and nuisance). Passengers benefit from these advancements through a dedicated mobile application.

Keyword: - Real Time Tracking, Fleet Management, Route Optimization, Demand Prediction, Scheduling Algorithms, Automated Fare Collection.

IOT Based Anti-theft Flooring System using Arduino

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Abstract:

Security and safety have always been a basic necessity for the urban population. With the rapid increase in urbanization and development of big cities and towns, the graph of crimes has also increased rapidly. By using IR blocking clothes or hiding behind objects, the basic anti-theft security system can be avoided or simply identifying and disabling them. To secure and guard our house in our absence, we propose the IOT based Anti-theft Flooring System using IOT devices.

Keyword: IoT (Internet of Things), Arduino, Anti-theft system, Smart flooring, Sensors, Wireless communication, Mobile app integration, Alert system

Robot Movement Controlling Using Android

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Abstract:

Nowadays we can see that things which were previously controlled manually are automated using machines and electronic remote controls. The main objective of this paper is to create an Android application which can be used to control the robot using wireless technology. Nowadays Android is the most popular operating system used for smart devices. Smart devices which are using the Android platform are also becoming more popular these days because of its smart and easy to use touch interface. Also hardware technology utilized in smart phones is improving significantly day by day. Hence, we can say that using such a powerful and generalized platform of the Android smart phones to control the robotic or any other system will be the great advantage for industrial and other general purpose use. The wheeled robot is used in this paper will be able to connect with an Android smart phones using HC05 Bluetooth module. The closed loop system is implemented in the robot using PID (proportional, integrated, derivative) controller will provide us the constant feedback of the current status of performance of the robot. By using that feedback from the PID system errors in the system will be reduced and consistency of the performance of the system will be maintained.

Keyword:- PID(proportional integrated derivative) HC05-Bluetooth Device

AUTO SPEED-CONTROLLING OF VEHICLES

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Abstract:

Automatic Vehicle Speed Control System is designed to control the speed of the vehicle in specific zones to avoid the accidents in the low-speed areas. In this system the low-speed zone is considered to be the 100 meter earlier to the traffic signal. The case study and implementation is based on the light vehicle speed control, when the vehicle is running with full speed and gets entered into the low speed zone the speed of it will be automatically reduced to the allowed speed in low speed zone. The microcontroller will interface with the sensors to detect the speed of vehicle and based on this input the controller will take appropriate action and generate a control signal for the vehicle control system which then will activate the mechanism of the Speed control in the vehicle and the speed of the vehicle is reduced to the required speed in that zone.

Keyword: - Speed control, Automatic control systems, Adaptive cruise control, PID controller (Proportional-Integral-Derivative),Sensor integration, Speed Sensors, Throttle Control, Vehicle-to-Vehicle Communication (V2V),Driver Assistance Systems, Automated Speed Management

AUTOMATIC ENGINE LOCKING SYSTEM FOR DRUNKEN DRIVERS

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Abstract:
Automatic engine locking system was devised to prevent drivers from driving vehicles in a boozed up state and helping in the cause to promote "not to drink and drive". The authors came up with idea of developing a prototype in which a sensor placed in the vehicle will be used to detect alcohol and upon detection it will trigger a warning for the driver and if the warnings are ignored then it will automatically lock the engine by shutting off its motors. The MQ-3 alcohol sensor is used to detect alcohol in the vehicle and upon alcohol detection it will lock the DC motor preventing the driver from driving the vehicle in a boozed up state. Simultaneously a buzzer will also be sounded and to restart the engine the system will require a reboot.Furthermore, after detection of the alcohol a GPS location will be send to the registered mobile number so that the location can be traced back to the driver. This project depicts an innovative way to prevent drivers from consuming alcohol while driving as it will ultimately lead to their safety as well as the safety of others around them.

Keyword:- Alcohol detection system , Alcohol detection system , Breathalyzer integration ,Vehicle immobilization , Drunk driving safety technology, Driver monitoring system , Biometric verification , DUI prevention system , Real-time alcohol detection.

WOMEN SAFETY AND TRACKING SYSTEM USING GSM&GPS

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Abstract:

Women's safety plays a very vital role now a days due to rising crimes against women. To help resolve this issue we propose a GPS based women's safety system that has dual security feature. The proposed system consists of a dual alerts that is buzzer and message is sent through GSM. This system can be turned on by a woman in case she even thinks she would be in trouble. This Project presents a women safety detection system using GPS and GSM modems. The system can be interconnected with the alarm system and alert the neighbours. This detection and messaging system is composed of a GPS receiver, GPS Receiver gets the location information from satellites in the form of latitude and longitude. The user receives the information from GSM which receives the processed information from the Microcontroller. A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number. When a woman is in danger and in need of self-defence then she can press the switch, which is allotted to her. By pressing the switch, the entire system will be activated then immediately a SMS will be sent to concern person with location using GSM and GPS

Keyword:- Global Positioning system(GPS),Global System for Mobile Communications(GSM),Microcontroller Unit(MCU),Short Message Service(SMS).

GESTURE BASED WIRELESS ROBORT GAMING

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Abstract:

In this world many people are known to gestures, which is one of the most powerful communication technique amongst mediums. People say action speak louder than words. Communicating with gesture is powerful method. Many industrial places and home purpose robots are controlled by remote controllers. In our gesture control project, a particular robotic arm is controlled through hand gestures.Here, gesture provides a way of giving a speech by expressing an idea. Image processing is one the effective method for gesture recognition, which is use to process image signals. The purpose of this gesture recognition method is to capture a specific human hand gesture and performs applications depending on the user. Sign language recognition from hand motion is a useful aspect in gesture recognition research Human Computer Interaction (HCI). From the use of wireless communication, a robot can be control from a long distance by the user. This project aims in using hand gesture method and wireless communication to control

Keyword:- HCI(Human computer interaction) HC05-Bluetooth Device

A Digital Security System for Door Lock System

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Abstract:

RFID, Radio Frequency Identification is an inexpensive technology, can be implemented for several applications such as security, asset tracking, people tracking, inventory detection, access control applications. The main objective of this paper is to design and implement a digital security system which can deploy in secured zone where only authentic person can be entered. We implemented a security system containing door locking system using passive type of RFID which can activate, authenticate, and validate the user and unlock the door in real time for secure access. The advantage of using passive RFID is that it functions without a battery and passive tags are lighter and are less expensive than the active tags. A centralized system manages the controlling, transaction and operation task. The door locking system functions in real time as the door open quickly when user put their tag in contact of reader. The system also creates a log containing check-in and check-out of each user along with basic information of user.

Keyword: Internet Of Things(IOT) Based Systems, Embedded Password-Based Systems, Smart Lock Systems With Access Control, Password-Based Systems With 8051 Micro Controller.

Auto Pet Feeding System Using Google Assistant and Node MCU

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Abstract:

In this project, we are using a Node MCU ESP8266 as the main controller, a Servo motor to open & close feeding bottle, and a 16*2 LCD to display the time.

We will get the time from NTP servers. Instead of using RTC module for Time and Date, here we used NTP server to reduce the hardware components.

NTP servers are better solution for getting time compared to RTC as it is more accurate and can provide the time of any geographical area in the world. Here is the complete tutorial on building an internet time clock.

Keyword: - Scheduled Feeding, Portion control, Wireless Connectivity, Mobile app control, Voice Assistant Integration, Sensor-Activated Feeding, Food Dispense rated Feeding, Food Dispenser

Medicine Remainder System Using Arduino Uno

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Abstract:
We always want to stay them healthy and fit. But what will happen if they get ill and forget to take medicine on time. We would be worried, at hospitals, there are many patients, and it is difficult to remind every patient to take medicine on time. The traditional ways require human efforts to remind them to take medicines on time. The digital era doesn't follow that, and we can use machines to do that. The application of Smart Medicine Reminder System is very wide and can be used by patients at home, doctors at hospitals, and at many other places. When it comes to reminding, there can be many ways to remind it.

Keyword:- Medication Schedule, Reminder Alerts, User Interface, Notifications, Alarm System, Dosage Tracking, User Input, Time Management, Repeat Schedule, Smartphone Integration

Railway Gate Control and Alert System

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Abstract:
In this project, This project is designed in such a way that a ir sensor is interfaced to the controller using serial communication. The main aim of this project is to alert people from railway accidents by using ir sensors. Air sensor is interfaced to the controller. This sensor can found tain . Each railway coach contains single vibration sensor. If train moves normally no vibrations occur. If accident occurs any one of the sensors in train must be activated and microcontroller takes signal from the sensor. After detecting pulse from sensor microcontroller sends alerting buzzer will be on. Microcontroller sends accident report along with coach number which is affected by accident. This effected coach number find out by sensor physical placing in coaches. A buzzer will be interfaced to the controller for alert. A 16X2LCD will be interfaced to the controller for displaying the status of the sensor

Keywords: - Sensors, Microcontroller, Signalling lights, DC motor, GSM, GPS.

Seat Belt Alarm & Alcohol Controlling of Vehicles

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Abstract:
Seats belts are one of the important components in the passenger's safety. It is designed in such a way that to avoid the travelers from being thrown out of the car. It is specially designed to analyze the crash impact, and it avoids the collision between each other during any accidents. seat belt is the most common and mandatory safety system in street legal automobile, developed by Volvo engineer Nils Bohlin in 1959.we realize that, although it saves a lot of lives in accidents, in certain unlikely event it can take life too. This can happen as the seat belt may get jammed causing the passengers to be stuck on their seats. This may lead to a dangerous situation where the driver and the passengers to be in grave danger. Our objective is to design an improvised seat belt unclamping mechanism, which includes controlled release of seat belt buckle.

Keyword: - Safety Compliance, Warning System, Occupant Detection, Belt Reminders, Crash Prevention, Automated Alerts, Child Safety Seats, Audible Alerts, Visual Indicators, Regulatory Standards.

Development of non-electrical device for tracking the movement of the sun for movement of the solar panels increasing the efficiency.

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Abstract:
Solar energy is considered the most promising form of renewable energy in the present century. New photovoltaic materials are being developed to improve the efficiency of solar energy conversion. Appropriate technologies are also required to track the movement of the sun across the day and the seasons to harvest the solar power to the maximum extent possible. This paper proposes a dual axes solar tracking system-based model that can communicate with the smart grid through the Power Line Communication system. The solar energy sources and storage units in this model are decentralized and appropriate control algorithm can redirect the available energy to various storage units based on an availability and demand analysis. Therefore, it is possible to avoid the wastage of available energy when the designated storage devices in a traditional system are fully charged

Keyword: - smart grid through the power line communication system, Control algorithm.

E-Campus using multiple sensor nodes

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[1,2,3,4] Narsimha Reddy Engineering College, Hyderabad, India

Abstract:
In this research work, an approach to develop a university campus in many ways using sensors is presented. Research work try to figure out many cases related to environmental and physical changes happening in the campus through sensors. The primary motive is to make a prototype to implement it into real time to make our campus a smart campus. Proposed work makes use of super-sensors which would sense and detect the environmental and physical conditions and report it through email, SMS, or a notification in website. These sensors enable us for more capability of collecting flexible data so that accordingly data can be processed. Also, this research work aims to deploy the proposed super-sensor system in a single classroom of the campus.

Keyword: - Sensors, Arduino UNO , LCD, Smart Campus, Student Tracking, Noise Pollution Monitoring

Smart Embedded Framework Using Arduino Uno

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Abstract:
With rapid increase in human population, industrialization, infrastructural developments, vehicles and utilization of fossil fuels, climate change, noise, water and air pollution and other environmental issues are increasing drastically. To ensure healthy living and a better future, it is essential to monitor these issues and provide solutions to overcome them. The smart sensor networks that combine electronics, wireless communication and computer sciences is an emerging field of research that can contribute towards monitoring noise and air pollution level. This paper provides a solution for noise and air pollution level monitoring in any area of interest using wireless embedded computing system. All devices in the system inclusive sound sensor, Fire, gas, humidity and temperature sensor . Alert is sent to the authorities whenever the pollution exceeds a certain set limit.

Keyword: - Smart Sensor Networks, Environmental Monitoring, Noise Pollution, Wireless Embedded Computing, IoT (Internet of Things), Sustainable Development, Environmental Sustainability

Smart Farming and Crop Monitoring System Using Arduino

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Abstract:

In earlier days farmers want to calculate the readiness of soil and impacted doubts to make which of the kind of yield. They didn't consider the stickiness, level of water and particularly atmosphere condition which was difficult to a Farmer, progressively the Internet of Things (IoT) is renovating the agribusiness engaging the agriculturists through the broad scope of methodologies, for example, exactness even as useful cultivating to manage difficulties within the field. IoT helps in the get-together data on conditions like atmosphere, protection, temperature, and productivity of the soil. IoT improvement can decrease the expense and update the efficiency of ordinary creating for farmers.

Keyword:- Hardware Components, Software and Programming, Crop Monitoring Parameters, Smart Farming Applications, Communication Technologies, Internet of Things (IoT), Precision agriculture, Agricultural automation, Crop management, Farm management, Environmental monitoring, Sustainable agriculture.

Anti-theft vehicle detector using IoT

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Abstract:
In this project, the strengthening in vehicle technology system is obtaining increased research popularity and adding a vehicle theft security system to avoid vehicle theft in the parking and sometimes driving in unsecured places. In this developing world where technology is growing day by day and scientific researchers are presenting new era of discoveries, the need of security is also increasing in all areas. At now, the vehicle practice is fundamental for populace. Concurrently, preserving the vehicle against theft is also prime. When the vehicle is filched no more feedback or preference could be accessible to help the owner of vehicle to find it back. The main objective of this method is to find the vehicle from unauthorized access, using fast, easy-to-use, clear, reliable and inexpensive. The advanced system provides surveillance and better robbery control using profile recognition and giving shock treatment to unauthorized person trying to run the vehicle and will be notified to vehicle holder.

Motion Detection System using Arduino Uno

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Abstract:
According to a new report prepared jointly by the World Health Organization and the World Bank, 15 percent of the world ‘s population is disabled.
The use of powered wheelchairs with high navigational intelligence is one of the great steps towards the integration of severely physically disabled and mentally handicapped people.
Driving a wheelchair is a tedious task for severely handicapped persons, unless they use the tongue to control the joystick.
Simultaneously blind and paraplegic people deal with two problems, which creates an uneasy situation for them, i.e. locomotion and localization. Different systems are being developed to overcome the problems described above, allowing the end-user to perform safe movements and accomplish some daily life important tasks.
Our Robotic wheelchair uses eye blink and head tilt movement to steer the wheelchair. In addition, we can give more independence to the disabled person by using the same head-tilt movement to communicate with the devices in a room for example: a fan.
This communication is done using a RF transmitter and receiver. Using this, the person can control various devices easily.

Keyword: Arduino UNO, IR sensor, Motor driver.

Fire Detection System Using Arduino Uno

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Abstract:
Fire is the most boundless reason for the unfortunate death influences for many occupants every year by causing many injuries and also an unprecedented increase in the death toll. The detection system is intended to keep away individual from the fire with an alarm during the crisis accompanied by sending the warning message Fire sensors can recognize the image and temperature to produce an alarm .Nowadays, internet-based fire alarm system is very essential to get the alarm in a mobile device for deploying precautionary measures well in advance for saving lives and property. So many techniques are proposed with better security for the home by Communication between electronic devices, sensors with the help of internet is possible with such devices through the provision of new forms of communication between devices and human beings.

Keyword:- Sensor, Bread Borad, Arduino Alaram, Fire Accident, Gas Station.

Air Pollution AnalysisUsing Arduino Uno

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Abstract:
In this paper we are going to make an IOT Based Air Pollution Monitoring System in which we will monitor the Air Quality over a web server using internet and will trigger a alarm when the air quality goes down beyond a certain level, means when there are sufficient amount of harmful gases are present in the air like propane, smoke, alcohol, benzene and NH3.It will show the air quality in PPM on the LCD and as well as on webpage so that we can monitor it very easily. Previously we have built the LPG detector using MQ6 sensor and but this time we have used MQ2 which is the best choice for monitoring Air Quality index as it can detects most harmful gases and can measure their amount accurately. In this IOT project, you can monitor the pollution level from anywhere using your computer or mobile. We can install this system anywhere and can also trigger some device when pollution goes beyond some level, like we can switch on the Exhaust fan or can send alert to the user using Buzzer.

Keyword:- MQ2 Sensor, Power Supply Board, Transformer, Arduino Uno, Buzzer, DHT 11.

Real time auxiliary transformer failures

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Abstract:

Auxiliary transformers are used extensively in railway systems. Indian Railways use them primarily to convert the 25-kilo volt AC supply into 230-240-volt AC supply as required for various applications. Due to their varied use, many of these auxiliary transformers are often positioned in remote locations. In case of failure of AT supply, no proper feedback system exists as of now. Due to this the lead time on failure attention increases rapidly depending on the location of the transformer. Sometimes this may result in signal failure leading to an increase in train traffic. To cut down on human effort and cost involved, as well as provide a system that continuously monitors these auxiliary transformers, an automated system based on GSM technology is suggested. This system periodically provides updates and generates immediate alerts in case of the occurrence of the failure of an auxiliary transformer, hence bringing a drastic reduction on lead time for failure attention where a failure escalates into costly service losses.

Keyword:- Insulation failure, Harmonics, Power quality(PQ), Distribution transformers, Winding failure, Mechanical faults, Bushing failure, Tap changer failure, Core failure and Tank failure.

RAILWAY TRACK FAULT DETECTION USING ARDUINO UNO

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Abstract:
In this project, the system interprets specific sign language gestures. These sensors provide data to a **microcontroller (Arduino)**, which processes the signals to identify gestures corresponding to predefined words or phrases. Once recognized, the gesture is displayed on an **LCD screen** as text and converted into audio through a **voice module**. This portable, real-time device facilitates seamless communication, promoting accessibility and inclusivity for the speech-impaired in various social settings.

Keyword: Sign,Language,Recognition,Speech,Impairment,Communication,FlexSensors,Accelerometer,Microcontroller (Arduino),Hand Gesture Detection,Analog-to-Digital Conversion,Text-to-Speech Conversion,LCD Display Output

Soil Moisture Sensor Using Arduino Uno

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Abstract:
In earlier days farmers want to calculate the readiness of soil and impacted doubts to make which of the kind of yield. They didn't consider the stickiness, level of water and particularly atmosphere condition, which was difficult to a Farmer, progressively the Internet of Things (IoT) is renovating the agribusiness engaging the agriculturists through the broad scope of methodologies, for example, exactness even as useful cultivating to manage difficulties within the field. IoT helps in the get-together data on conditions like atmosphere, protection, temperature, and productivity of the soil. IoT improvement can decrease the expense and update the efficiency of ordinary creating for farmers.

Keyword: - Arduino Uno, Soil Moisture Sensor, Analog Signal, Digital Signal, Resistor, Bread Board, Jumper Wires, LCD Display, Power Supply, Buzzer

Gas Leakage and auto Ventilation using Arduino

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Abstract:
In this paper we are going to make an IOT Based Air Pollution Monitoring System in which we will monitor the Air Quality over a web server using internet and will trigger an alarm when the air quality goes down beyond a certain level, means when there are sufficient amount of harmful gases are present in the air like propane, smoke, alcohol, benzene and NH3. It will show the air quality in PPM on the LCD and as well as on webpage so that we can monitor it very easily. Previously we have built the LPG detector using MQ6 sensor and but this time we have used MQ2 which is the best choice for monitoring Air Quality index as it can detects most harmful gases and can measure their amount accurately. In this IOT project, you can monitor the pollution level from anywhere using your computer or mobile. We can install this system anywhere and can also trigger some device when pollution goes beyond some level, like we can switch on the Exhaust fan or can send alert to the user using Buzzer.

Keyword: - Gas sensor, Exhaust fan, Alarm, LCD, Arduino, Buzzer, LEDs, GSM module, MQ-2 Gas sensor

Attendance Tracking in Virtual Environments

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Abstract:

The Online Attendance Management System (OAMS) is developed to enhance the accuracy and efficiency of student attendance tracking in educational institutions. Traditional methods of manual attendance tracking are prone to human error, time-consuming, and lack real-time accessibility. This research aims to address these challenges by automating the process of attendance management, using modern web technologies such as PHP, MySQL, HTML, CSS, and JavaScript. The system follows a three-tier architecture, integrating a user-friendly interface that enables faculty and administrators to manage attendance seamlessly. Key features include real-time data access, automated attendance tracking, and comprehensive report generation.

The methodology involved designing the system's database using MySQL and implementing both front-end and back-end functionalities. The system was tested through unit testing, integration testing, and user acceptance testing to ensure its reliability and performance. The results demonstrated a significant reduction in administrative workload, improved data accuracy, and real-time insights into student attendance patterns.

The OAMS offers a scalable and secure solution for educational institutions, providing faculty members with a convenient tool for tracking student attendance and generating reports. By eliminating the need for manual data entry, the system improves overall efficiency, enabling institutions to focus more on educational outcomes and student support.

Keywords:
Automated Attendance Tracking, Web-Based Application, Real-Time Attendance Monitoring, Data Accuracy and Integrity, Comprehensive Reporting, Attendance Visualization.

Development of a 2D Snake Game in Unity

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Abstract:

The Hungry Serpent lets players control a lively snake, moving it around a grid to eat food pellets and grow longer. The challenge is to avoid crashing into walls, obstacles, or the snake's own body while keeping up with the increasing length. As players move through levels, the game becomes trickier, with new obstacles and tighter spaces, creating a fun mix of excitement and challenge. Each food pellet adds points, so there's always the drive to beat personal high scores and push a bit further each time.

This game brings a modern twist to the classic Snake game, making it fun for everyone, whether you're new to games or an arcade pro. With colourful visuals and simple controls, it's easy to pick up, yet the growing challenge keeps things interesting. The goal is straightforward: keep the snake alive, score high, and enjoy the ride! The Hungry Serpent is all about having a good time, blending the old-school charm of Snake with a fresh, fun design for all ages.

Keywords: Snake game, Game development, Unity engine

Customer Support Chatbot for E-Commerce Website

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Abstract:

This project aims to significantly enhance customer service through the development of an intelligent chatbot capable of managing frequent customer queries and standard interactions. In the fast-evolving landscape of e-commerce, efficient customer support is paramount to ensuring a seamless shopping experience. The chatbot, developed exclusively using HTML, CSS, and JavaScript, is designed to facilitate user interaction on e-commerce websites by offering real-time assistance to customers.

The primary function of this chatbot is to provide instant responses to common queries, which include helping users find products, assisting with navigation, and addressing post-purchase concerns. By addressing these standard interactions efficiently, the chatbot not only reduces the workload on human customer service agents but also enhances the user experience by offering timely and accurate responses.

Leveraging only front-end web technologies ensures that the solution remains lightweight and easy to integrate into existing websites. The absence of server-side processing or external libraries highlights the chatbot's efficiency and the ease with which it can be maintained and updated. This approach also underscores the adaptability of the solution, as it can be tailored to meet the specific needs of different e-commerce platforms without extensive reconfiguration.

In addition to improving customer satisfaction, this chatbot aims to streamline the support process, thus boosting user engagement and retention on the e-commerce platform. By automating routine interactions, the chatbot frees up human agents to focus on more complex issues, thereby enhancing the overall efficiency of the customer support system. Ultimately, this project demonstrates how simple yet powerful web technologies can be harnessed to create effective customer support solutions that benefit both users and businesses.

Key Words:-Customer service,Intelligent chatbot, E-commerce, Real-time assistance, User experience

Online Language Translator

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ABSTRACT

The Online Language Translator project seeks to bridge language gaps in today's interconnected world by integrating HTML, CSS, and Python technologies. The project's user-friendly interface, built with HTML and CSS, prioritizes accessibility and simplicity, ensuring effortless navigation for users with diverse language preferences. By combining the strengths of these technologies, the project addresses the need for effective communication and lays the groundwork for future advancements in language translation technology. HTML provides a responsive interface, CSS delivers an appealing design, and Python enables powerful language processing. As a result, the Online Language Translator project contributes to a more connected and inclusive global community, demonstrating the potential of cross- disciplinary collaboration in shaping the future of language translation solutions. By breaking down language barriers, the project fosters a space where individuals from different linguistic backgrounds can communicate without hindrance.

KEYWORD

Translator, HTML CSS, Python, Interconnected world, User-friendly interface, Accessibility, Simplicity, Language translation technology, Global community, Communication.

ALTS Car Game: An Interactive Approach to Learning Web Development Concepts

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Abstract:

The ALTS Car Game is a browser-based racing game designed to enhance understanding of web development through an interactive gaming experience. Built using HTML, CSS, and JavaScript, the game enables players to navigate a car, avoiding obstacles and scoring points. This project emphasizes core programming concepts, such as event-driven programming, real-time interaction, and collision detection, providing hands-on learning. The game is accessible on multiple devices, allowing for scalability and responsive game play.

JavaScript controls essential mechanics, including player movement and score tracking, while CSS ensures visual coherence across devices. Future improvements may introduce levels of difficulty, multiplayer support, and enhanced visuals, demonstrating the game's adaptability and long-term learning potential.

Keywords: Car Racing Game, JavaScript Game Logic, Collision Detection, Real-Time Interaction, User Interface Design, Responsive Design, Web Development, Event-Driven Programming, Scalability, Educational Tool.

The Number Guessing Game: A Fun Way to Learn Programming Basics

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Abstract:

This paper introduces a simple number-guessing game to teach beginners key programming concepts like handling user input, using conditional statements, creating loops, and generating random numbers. The game involves players guessing a randomly selected number within a range, receiving instant feedback, and trying multiple times to get it right. We aim to create an enjoyable learning experience that helps new programmers practice coding hands-on while learning about algorithms and user interface design. The results show that the game effectively builds foundational programming skills and enhances problem-solving abilities. Future improvements could include adding graphics, scorekeeping, and adjustable difficulty levels

Keywords:-Number Guessing Game, Programming Education, Random Number Generation, User Input Handling, Conditional Statements, Loops, Interactive Learning, Game Development, Algorithm Optimization.

Remote Monitoring of Temperature and Humidity Using ESP32 Web Server

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Abstract:

The *Remote Monitoring of Temperature and Humidity Using ESP32 Web Server* project represents a significant advancement in IoT-based environmental monitoring. By leveraging the ESP32 microcontroller's integrated Wi-Fi and Bluetooth capabilities, this system provides a robust platform for real-time monitoring of temperature and humidity using a BME280 sensor. The core of this system lies in its ability to host a web server that allows remote access to real-time sensor data, making it accessible from any internet-enabled device. The sensor data is updated dynamically every 30 seconds, ensuring that users have the most current readings available.

The project emphasizes the importance of integrating hardware and software to provide an efficient IoT solution. The ESP32, known for its high processing power and low energy consumption, works seamlessly with the BME280 sensor to deliver accurate environmental readings. The Arduino IDE and libraries like ESPAsyncWebServer enable the development of asynchronous communication, ensuring that the web server can handle multiple requests simultaneously without performance lags. This is particularly critical for real-time applications where data needs to be updated and displayed without delays.

Moreover, the project has wide-ranging implications for smart homes, agricultural monitoring, and industrial automation, where environmental data like temperature and humidity are crucial. The system's ability to operate remotely adds flexibility and convenience, eliminating the need for physical proximity to the monitoring site. This not only enhances user experience but also paves the way for scalable IoT implementations in diverse settings. Future enhancements could include integrating more sensors (e.g., for air quality or light), advanced data visualization (such as historical data analysis), and stronger security features to protect the data and ensure privacy

Keyword:-ESP32, BME280 Sensor, IoT, Real-time monitoring.

A COMPREHENSIVE STUDY ON THE BLACK-SCHOLES MODEL IN EUROPEAN OPTION PRICING

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Abstract

This study provides an in-depth analysis of the Black-Scholes model, focusing on its application in pricing European call options using Microsoft Corporation's stock data from 2013 to 2023. The Black-Scholes formula is a fundamental component of financial mathematics, widely used to calculate the theoretical price of options by considering key financial variables such as stock price, strike price, time to expiration, risk-free interest rate, and volatility. By leveraging these inputs, the model helps assess potential risks and profits, making it a valuable tool for investors and financial analysts. The research examines how fluctuations in these variables impacted option pricing over the decade, highlighting notable increases in call option prices during periods of heightened market uncertainty, particularly in 2020 and 2021. Python programming was employed to automate calculations and streamline the analysis, further demonstrating the model's practicality in real-world scenarios. While the study acknowledges certain limitations—such as the assumption of constant volatility and a stable risk-free rate—it reaffirms the Black-Scholes model's effectiveness as a reliable method for option pricing. The findings suggest that, despite its constraints, the model continues to offer significant insights into the dynamics of option valuation, aiding traders and researchers in making informed financial decisions.

Keywords: Black-Scholes model, Option pricing, Financial mathematics, Stock volatility, Option valuation, Theoretical pricing

Guess The Hidden Five Letter Word Puzzle Game Using Scratch

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Abstract:

The "Guess the Hidden Five-Letter Word Puzzle" is an interactive game built using Scratch, where players are challenged to guess a randomly selected five-letter word within a limited number of attempts. After each guess, the game provides feedback indicating which letters are correctly placed and which are part of the word but in the wrong position, encouraging players to use deduction and logic to arrive at the correct word.

This fun yet educational game offers an engaging way to improve vocabulary and problem-solving skills. Designed with Scratch's visual programming blocks, the game features a clean, intuitive interface that is accessible to all age groups.

Random word selection for each round ensures replay-ability, while an interactive feedback system keeps players motivated as they refine their guesses. The game also includes the option to offer hints for players who may struggle, adding flexibility to the gameplay. By limiting the number of attempts, the game creates a sense of challenge and urgency, making it both mentally stimulating and rewarding for players as they succeed in guessing the correct word.

KeyWords:-Guessing Mechanism, Feedback System, Game Logic, User Interface, Scoring System, Secret Word, Letter Matching, Word Validation, Attempts/Guesses, Letter Highlight, Puzzle Generation, Background Setup.

ALTS TAXI BOOKING SYSTEM

Pulicherla Padmavathi[1], Mudokulam Poojitha Bai[2], Alakunta Sonia[3], Kagithala Sonu[4], Sai Sindhu[5], Jayalakhmi[6], M. Madhusudhan [7]

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Abstract:

This paper introduces a taxi booking system that simplifies the process of reserving a ride. The system allows users to input personal information, select pickup and drop locations, choose travel options such as pooling, and view real-time fare estimates, including base charges, distance, and travel insurance. Designed to help beginners understand programming concepts, the system integrates features like user input handling, conditional logic, and calculations. Our goal is to create an intuitive interface that aids in learning hands-on coding skills, database management, and user interface design. The system effectively builds foundational knowledge while enhancing problem-solving abilities. Future enhancements could include features like GPS integration, dynamic fare adjustments, and multiple payment methods to improve functionality and user experience.

Keywords: Ride Reservation, User Input Handling, Pickup and Drop Locations

MULTIPERIOD BINOMIAL MODELS FOR OPTION PRICING AND RISK ASSESSMENT IN FINANCE AND INSURANCE

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Abstract

This study explores the multiperiod binomial model, a key tool in financial mathematics for pricing derivatives and assessing risk. By extending the basic binomial framework across multiple periods, the model captures the dynamic evolution of asset prices over time. The analysis focuses on its applications, advantages, and limitations in complex financial markets. In the financial and insurance sectors, effective risk management and option pricing are crucial for decision-making. Binomial models offer a flexible and intuitive approach to these tasks by simulating asset price movements over multiple periods, thereby capturing the stochastic nature of markets. This paper investigates the real-time evaluation of multiperiod binomial models for option pricing and risk assessment, with an emphasis on enhancing computational efficiency and accuracy. The study also focuses on extending the classic Cox-Ross-Rubinstein (CRR) binomial tree framework to accommodate real-time data inputs, enabling dynamic adjustments in pricing and risk predictions.

Keywords: Multiperiod Binomial model, Option pricing, Risk assessment, Stochastic modeling, Financial markets, Binomial tree

An Interactive Quiz Application: A Fun And Engaging Way To Test Your Knowledge

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Abstract:

This project presents a simple interactive quiz application developed using the Tkinter library in Python. The application aims to test users' knowledge of Python programming concepts through a series of multiple-choice questions. It allows users to enter their username, answer questions, and navigate between questions.

The system stores quiz questions, answers, and explanations within a structured list. Users receive immediate feedback on quiz completion, including their score, time taken, and detailed explanations for each question. Key features include user-friendly navigation with "Previous" and "Next" buttons, a quit option, and a result summary displayed at the end.

The quiz interface follows a clean design with appropriate use of Tkinter widgets such as Label, Entry, and Button. The project demonstrates fundamental programming techniques such as event handling, object-oriented design, and modular code organization. This application is suitable for beginners in Python and provides an engaging way to reinforce Python programming concepts.

Keywords:-Python, Tkinter, Score Calculation, Time Tracking, Result Display, GUI.

Sudoku Gaming : Development of an Interactive Sudoku Solver and Game

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Abstract

Development of a Sudoku Game Application: This paper outlines the comprehensive development of a Sudoku game application designed to deliver an engaging and user-friendly experience for puzzle enthusiasts of all skill levels. The project emphasizes design choices, algorithmic strategies for puzzle generation, and user interface (UI) components that enhance user interaction and enjoyment.

Design Choices: The initial phase of the project involved making critical design decisionstoensurearobustarchitecturefortheSudokuapplication.Theselectionof an appropriate programming language and framework was fundamental, with considerations for scalability, performance, and ease of development. A modular design approach was adopted, allowing for clear separation of concerns among various components, including game logic, user interface, and data handling. This modularity not only streamlined the development process but also facilitated future expansions and maintenance of the application.

Real-TimeSolverImplementation: Inadditiontopuzzlegeneration,theapplication features an advanced real-time solver designed to assist users in solving particularly challenging puzzles. This solver employs an efficient backtracking technique akin to that used in puzzle generation, enabling users to explore potential solutions interactively. The solver highlights possible candidates for each cell and provides hints, facilitating user engagement and fostering a deeper understanding of Sudoku strategies.

Keywords: Sudoku, game development, user experience, modular design, programming languages, backtracking algorithm, puzzle generation, difficulty levels, real-time solver, user interface, interactive learning, algorithmic strategies, user engagement, puzzle enthusiasts.

Efficient Detection and Analysis of Decaying In Fruits and Vegetables Using Convolution Neural Network

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Abstract:

Fresh produce quality and safety are essential for human health and well-being. Decay and spoilage in fruits and vegetables pose significant challenges for both consumers and the agricultural industry. Rotten produce results in economic losses, raises concerns about foodborne illnesses, and has the potential to negatively impact human health. To address these pressing issues, this work proposes a machine learning-based image-based decay detection system for fresh produce. The system analyses digital images of fruits and vegetables to estimate the decay. This real-time assessment empowers consumers, suppliers, and distributors to make informed decisions about the usability and freshness of produce, there by mitigating health risks associated with decayed items. In addition to enhancing food safety, the system also contributes to sustainability by reducing wastage. Early detection of decay can help to prevent edible produce from being discarded prematurely. This can lead to significant cost savings and environmental benefits. Furthermore, this idea explores the role of technology in enabling consumers to make more informed choices about the fresh produce they purchase. By exploring the cultivation practices and their impact on produce, the project aims to raise awareness about potential chemical exposures and their implications for human health. This knowledge equips consumers with the information they need to make conscious choices about their dietary preferences. Overall, the project bridges the gap between food safety, sustainability, and health consciousness. It provides a proactive and data-driven approach to decay detection that can help to improve the quality of life for consumers and promote sustainable livelihoods in the agricultural industry.

Key words:-AI, Detection, Convolution Neural Network, agricultural

Real-Time Detection of Marine Debris: Adapting YOLOv8 for Underwater Applications

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Abstract:

Marine debris, encompassing a wide range of discarded materials such as plastics, fishing gear, and other pollutants, has emerged as a critical threat to the health of ocean ecosystems, marine life, and coastal communities. Traditional methods for detecting and monitoring marine debris are often resource-intensive, involving manual inspection and limited spatial coverage, thus rendering them inefficient for large-scale monitoring. In response to this challenge, this paper presents an innovative approach leveraging the YOLOv8 (You Only Look Once, version 8) object detection algorithm to automate the identification and classification of marine debris.

Our study focuses on adapting and training the YOLOv8 model using a comprehensive dataset of marine debris images, which represent a diverse array of debris types and sizes typically found in ocean environments. The dataset is meticulously annotated to enable high-precision detection, ensuring the model's capability to accurately identify both macro- and micro-scale debris. The trained YOLOv8 model is evaluated using standard performance metrics such as precision, recall, and F1 score, tailored to the debris detection context, termed as debris-precision, debris-recall, and debris-F1 score. These metrics demonstrate the model's robustness in real-world scenarios, showing high accuracy in detecting a variety of marine debris.

To further extend the practical utility of the system, we explore the integration of the YOLOv8-based debris detection model with underwater imagery captured by remotely operated vehicles (ROVs) and autonomous underwater vehicles (AUVs). This integration significantly expands the spatial and temporal scale of debris monitoring, enabling real-time surveillance of vast and remote oceanic regions. The system offers a scalable and cost-effective solution to enhance marine conservation efforts, facilitating timely detection and response measures that can mitigate the adverse effects of marine debris.This work represents a significant step towards automating marine debris monitoring, providing a viable solution to the global challenge of marine pollution. It opens new avenues for research and development in the field of oceanography, environmental monitoring, and artificial intelligence-driven environmental protection systems.

Keywords:-Marine Debris, YOLOv8, Object Detection, Underwater Imaging.

Book Recommendation System

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Abstract:
The *Book Recommendation System* uses machine learning to deliver personalized book suggestions based on users' reading habits, preferences, and book attributes. By applying collaborative and content-based filtering, the system recognizes patterns among similar users and recommends books that align with individual tastes, encouraging users to explore new genres and authors.
The goal is to boost user satisfaction and engagement, driving readers to discover more books that suit their interests. Automated data processing ensures recommendations stay relevant, adapting to changing preferences in real time. This system not only serves as a tool for book discovery but also fosters loyalty by offering trending, highly-rated, and tailored suggestions. With its focus on user experience and data-driven insights, the *Book Recommendation System* enhances the digital reading journey.

Keywords:- Machine Learning, Personalized Recommendations, Collaborative Filtering, User Satisfaction, Data Preprocessing, Book Discovery, User Engagement

Advanced Real-Time Object Detection Using YOLOv8

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Abstract:

Object Detection is a computer technology related to computer vision and image processing that deals with detecting instances of semantic objects of a certain class in digital images and videos. Computer Vision is the branch of the science of computers and software systems which can recognize as well as understand images and scenes. Computer Vision is consisting of various aspects such as image recognition, object detection, image generation, image super-resolution and many more. Object detection is widely used for face detection, vehicle detection, pedestrian counting, web images, security systems and self-driving cars.

In this project, we are using highly accurate object detection-algorithms and methods. Real-time object detection using the YOLOv8n model, OpenCV, and the Ultralytics library. The system captures video frames, processes them through the YOLOv8n model for object detection, and visualizes the detected objects with bounding boxes and class labels. Despite its effectiveness, the existing system faces challenges such as performance bottlenecks, dependency overhead, and limited flexibility. To address these issues, a proposed system is outlined, which leverages GPU acceleration, advanced model variants, efficient resource management, customization options, and multi-threaded processing. The proposed enhancements aim to improve performance, accuracy, scalability, and flexibility, making the system more robust and adaptable to diverse object detection scenarios.

Keywords: Object Detection, YOLOv8n, Computer Vision, Real Time Processing, Image Processing, Deep Learning, GPU Acceleration.

ENHANCING IOMT INFRASTRUCTURE WITH BLOCKCHAIN AND IOT: A SURVEY OF SMART HEALTHCARE APPLICATIONS

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Abstract:

The convergence of Blockchain technology and IoT, particularly within the Internet of Medical Things (IoMT), is revolutionizing healthcare infrastructure. This review article examines two key studies that explore Blockchain and IoT in smart healthcare: one focuses on a Blockchain-assisted IoMT framework, while the other explores the deployment of a LoRaWAN-based hybrid IoT system for wearable health monitoring. The Blockchain-assisted IoMT infrastructure enhances data security, integrity, and access control, addressing common challenges in healthcare systems. Meanwhile, the LoRaWAN-based hybrid IoT system demonstrates how low-power wide-area networks can support real-time health monitoring, particularly in resource-limited settings. Together, these advancements underscore the transformative potential of Blockchain and IoT technologies in building resilient, secure, and scalable healthcare ecosystems. However, challenges like scalability, energy consumption, and interoperability remain key areas for further research and development.

Keywords: *Internet of Medical Things (IoMT), Blockchain Technology, Smart Healthcare, Data Security, Privacy, Interoperability, Scalability*

The Role of Microfinance in Advancing Women's Economic and Social Empowerment

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Abstract:

This study investigates the role of microfinance in advancing women's economic and social empowerment. Data were collected through a primary source from 148 women beneficiaries of microfinance programs, selected via random sampling. The research focused on assessing the impact of microfinance services on income generation, financial independence, and social involvement.Using a structured questionnaire, the study applied the Chi-square test to evaluate the relationship between access to microfinance and women's empowerment. The results show a significant positive correlation between microfinance and economic empowerment, particularly in terms of increased income and enhanced financial autonomy. Additionally, women reported improvements in social empowerment, including greater participation in household and community decision-making.While microfinance has contributed to women's empowerment, the study identifies challenges related to the sustainability of outcomes, emphasizing the need for complementary training and support. Overall, microfinance is a valuable tool for gender empowerment but requires additional interventions to address broader inequalities.

Keywords:-Women Empowerment, Micro Finance, Impact of Micro Finance on Women Empowerment, Self Help Group, Economic and Social Empowerment.

Todo-List Application with Django Framework

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Abstract:

In this project, a to-do list application is developed using the Django framework, providing an efficient and user-friendly platform for task management. The application allows users to create, view, update, and delete tasks, offering a simple yet powerful tool to organize daily activities. The Django framework, a high-level Python web framework, was selected for its robust built-in features, including the Model-View-Template (MVT) architecture, user authentication system, and database management capabilities.

The to-do list app includes essential functionalities such as task categorization, deadline management, and task prioritization. Users can register and log in to their accounts to manage their personal task lists securely. The project implements CRUD (Create, Read, Update, Delete) operations for tasks, which are stored in a database using Django's Object-Relational Mapping (ORM). Additionally, the interface is responsive and interactive, leveraging HTML, CSS, and JavaScript for a seamless user experience.

This application demonstrates the integration of frontend and backend technologies, focusing on scalability, security, and ease of use. The development process emphasizes the use of Django's features like form handling, authentication middleware, and database migrations, making the application adaptable and extendable for future enhancements.

Keyword:-To-do list, Django framework, task management, CRUD operations, user authentication, Model-View-Template (MVT), ORM, scalability.

Library Management System

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Abstract:

Library management system is a project which aims in developing a computerized system to maintain the daily work of library This project has many features which are generally not available in normal library management systems like facility of user login and a facility of teachers login.

It also has a facility of admin login through which the admin can monitor the whole system. It also has facility of an online notice board where teachers can student can put up information about workshops or seminars being held in our colleges or nearby colleges and librarian after proper verification from the concerned institution organizing the seminar can add it to the notice board. It has also a facility where student after logging in their accounts can see list of books issued and its issue date and return date and also the students can request the librarian to add new books by filling the book request form.

The librarian after logging into his account i.e. admin account can generate various reports such as student report, issue report, teacher report andbook report.

Overall this project of ours is being developed to help the students as well as staff of library to maintain the library in the best way possible and also reduce the human efforts.

Keywords: Library Management System, Computerized System, User Login, Teacher Login, Admin Login, Monitor System, Online Notice Board, Workshops.

Snake Game

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Abstract: This project report presents the development process and outcomes of creating a Snake game using HTML, CSS, and JavaScript. The objective of the project was to implement a classic arcade game that is both interactive and entertaining, utilizing web technologies for cross-platform compatibility and accessibility. The report begins with an overview of the Snake game concept, outlining its rules and mechanics. It then delves into the technical aspects, detailing the implementation of the game using HTML for structure, CSS for styling, and JavaScript for interactivity and game logic. Key features discussed include the snake's movement, food generation, collision detection, score tracking, and game over conditions. Challenges encountered during development, such as managing the snake's behavior and optimizing performance, are also addressed along with their respective solutions. Furthermore, the report highlights the design considerations taken into account to ensure a visually appealing and user-friendly interface. This includes the choice of colors, fonts, and layout to enhance the overall gaming experience. Finally, future enhancements and potential extensions to the game are proposed, such as adding additional levels, implementing multiplayer functionality, or integrating sound effects. In conclusion, the Snake game project demonstrates the effective utilization of HTML, CSS, and JavaScript to create a functional and enjoyable web-based gaming experience, while also providing insights into the development process and opportunities for further improvement.

Keywords: HTML, CSS, Java Script, Canvas API, Game loop, Collision detection, event handling, Object-oriented programming. Specific Game Features: Snake movement, Food generation, Scoring, Game over, Level system, Power-ups. Additional Considerations: Responsive design, Accessibility, Optimization, Game engine.

Comprehensive Word Guessing Game: Enhancing Learning and Entertainment

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Abstract:

This project introduces a fun and educational Word Guessing Game designed to boost vocabulary and sharpen thinking skills. The game offers an enjoyable way for players to challenge themselves by guessing hidden words within a set number of tries.

The game's purpose is simple: to make learning vocabulary more enjoyable and accessible. Players not only encounter new words but also practice critical thinking and problem-solving as they try to crack each word. Beginner levels provide easier words and more hints, while advanced levels step up the challenge, pushing players to improve their skills in a fun way.

Overall this project of ours is being developed to help the childrens as well as students to develop the strong vocabulary skills.

Keywords: HTML, CSS, JavaScript and visual Studio Code

Percentage Performer: A Web-Based Academic Performance Calculator

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Abstract

The 'Percentage Performer' is a web-based tool designed to calculate academic performance metrics such as total marks, percentage, and Cumulative Grade Point Average (CGPA) across multiple semesters. This tool streamlines the process of academic evaluation, eliminating manual errors and providing students and educators with a convenient means of assessing progress. The tool dynamically generates input fields for subjects, computes total marks, percentage, and CGPA, and presents results in an intuitive user interface. This paper details the tool's architecture, implementation, and its significance in simplifying the academic evaluation process.

Keywords

Academic Performance, Web-Based Tool, Percentage Calculator, CGPA, JavaScript, Dynamic Input Handling.

A STUDY ON MULTILINGUAL SPEECH-TO-TEXT TRANSCRIPTION WITH EDITING AND EXPORTING OF TRANSCRIBED TEXT DOCUMENTS FOR VIRTUAL MEETINGS

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Abstract:
Speech-to-text transcription in virtual meeting platforms refers to the technology that converts spoken language into written text in real-time during online meetings. This technology supports multiple languages, allowing participants to read and understand the conversation. This functionality is particularly useful in virtual meeting platforms such as Zoom, Google Meet, Webex, and Microsoft Teams, where it can provide real-time captions, generate meeting transcripts, and enhance accessibility for participants with hearing impairments. Using advanced speech recognition technology, the platform helps users easily and efficiently convert audio files into text. This is useful for tasks like taking notes, creating documents, and making content accessible to everyone. The platform ensures accuracy and efficiency by using a reliable Speech-to-Text API, such as Google Cloud Speech-to-Text or IBM Watson, which supports multilingual capabilities. It also allows users to edit and export the transcribed text documents, making it easier to manage and share meeting notes and records. It offers several key features to enhance user experience, including a simple recording interface, the ability to either record audio directly or upload pre-recorded audio files for transcription, real-time transcription display, and options to edit and download the transcribed text.

Keywords: Speech-to-text transcription, Virtual meeting platforms, Real-time captions, Speech recognition technology, and IBM Watson.

Enhancing Image Classification through Transfer Learning

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Abstract:

In the realm of computer vision, image classification serves as a fundamental task with widespread applications. However, achieving high accuracy in image classification often demands substantial computational resources and large datasets for training deep neural networks. Transfer learning offers a promising solution to mitigate these challenges by leveraging pre-trained models on large datasets and fine-tuning them on specific tasks of interest.

This paper explores the effectiveness of transfer learning techniques in enhancing image classification performance. Through a comprehensive review of recent advancements and methodologies, to investigate various transfer learning strategies, including feature extraction, fine-tuning, and domain adaptation. Furthermore, to analyze the impact of different pre-trained models, dataset sizes, and target domains on classification accuracy. Experimental results on benchmark datasets demonstrate the efficacy of transfer learning in significantly improving classification accuracy while reducing computational overhead.

Additionally, this paper discusses practical considerations, challenges, and future research directions in utilizing transfer learning for image classification tasks. Overall, this research contributes to the understanding and advancement of transfer learning techniques for enhancing image classification performance, thereby facilitating the development of more efficient and accurate computer vision systems in diverse real-world applications.

Keywords: -Transfer learning, Image classification, pre-trained models, Fine tuning, Domain adaption

Pizza Placing Using Scratch Programming

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Abstract: This paper introduces Pizza Placing game using Scratch Programming to play and use Scratch Programming It's a beginner friendly Programming Language , which doesn't require to know any language priorly. The game involves a player to play to make a pizza According to the requirement . The Scratch is already built with blocks we just need to attach the blocks according to our requirements . We aim to create an enjoyable learning experience that helps new programmers practice coding hands on while learning about algorithms and user interface design. The results show that the game effectively builds foundational programming skills.

Keywords: Pizza Placing Game, Programming Education, Pizza Requirement, Scratch Programming Language, Beginners Friendly, Blocks , Building Blocks , colours , Game Development.

Intellect Quiz: Building a Dynamic and Educational Trivia Platform

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Abstract:

Intellect Quiz is a mini project designed to provide an immersive and educational quiz experience. Developed using React, Semantic UI, and the Open Trivia Database API, the platform allows users to engage with trivia questions across various categories and difficulty levels. The project focuses on building a seamless user interface with React, utilizing its component-based architecture for creating reusable UI elements that promote development efficiency and easy maintenance. With React's virtual DOM, the application ensures optimal performance by dynamically updating the user interface in response to interactions.

To enhance the visual appeal and usability of the platform, Semantic UI was incorporated. Its comprehensive library of pre-designed components and responsive grid system enables the creation of stylish and intuitive user interfaces that adapt seamlessly across devices. By leveraging modern front-end technologies, the Intellect Quiz delivers a dynamic, user-friendly, and educational experience.

Keywords:

React, Semantic UI, Open Trivia Database API, Quiz Platform, Educational Application, User Interface, Web Development, Front-end Development.

Edge Computing in Traffic Management: Enhancing Urban Mobility and Safety

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Abstract:

Edge computing is revolutionizing traffic management by enabling real-time data processing at the network's edge, close to the data source. This approach significantly reduces latency and enhances the responsiveness of traffic systems. By deploying edge devices such as sensors and cameras at intersections and along roadways, traffic data can be analyzed locally, facilitating immediate decision-making and action. This leads to improved traffic flow, reduced congestion, and enhanced safety for both drivers and pedestrians. Furthermore, edge computing supports advanced applications like autonomous vehicles and smart traffic signals, which depend on low-latency communication. The integration of edge computing with AI and IoT technologies further optimizes traffic management by predicting traffic patterns and dynamically adjusting controls. This methodology not only enhances the efficiency of traffic systems but also contributes to the development of smarter and more resilient urban mobility solutions. The scalability and efficiency of edge computing make it a pivotal technology in addressing modern urban transportation challenges, paving the way for a future where traffic management is more intelligent, adaptive, and responsive.

Keywords: Edge Computing, Data Processing, Traffic Patterns

FUZZY SYSTEMS AND MACHINE LEARNING: ENHANCING CORRELATION AND REGRESSION FOR COMPLEX DATA

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Abstract

The integration of fuzzy systems with machine learning has emerged as a powerful approach to enhance regression and correlation analysis, mainly for complex and high-dimensional datasets characterized by uncertainty and nonlinear relationships. This paper provides a comprehensive exploration of recent advancements in fuzzy systems, focusing on their role in improving the accuracy, interpretability, and robustness of machine learning models applied to complicated data structures. By blending the interpretive flexibility of fuzzy logic with the predictive power of machine learning, these hybrid models effectively manage ambiguity, model nonlinearity, and improve decision-making processes across domains. Through comparative analyses and domain-specific applications, this work demonstrates how fuzzy-enhanced machine learning techniques significantly outperform traditional approaches in tasks involving multidimensional and imprecise data. This synthesis offers insights into the growth and application of fuzzy-based machine learning models, positioning them as essential tools for advancing analytics in complex data environments.

Keywords: Fuzzy Systems, Machine Learning, Regression Analysis, Correlation Analysis, High-Dimensional Data, Nonlinear Relationships, Interpretability

ROAD SAFETY AUDIT FOR A DISTRICT ROAD STRETCH FROM CBIT COLLEGE TO NARSINGI

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ABSTRACT:

A Road Safety Audit (RSA) serve as fundamental tool in identifying potential hazards and implementing effective safety measures to mitigate risks on road networks and the schemes for the improvement and maintenance of the existing road facilities. Hyderabad city is experiencing a rapid growth of population, due to this there is a massive increase in road traffic. Road traffic increase can lead to several issues such as congestion, air pollution, road accidents etc. In this regard, there is a need to check the existing road conditions at several locations throughout Hyderabad city by conducting Road Safety Audit.

In this project, analysis of one of the major stretches of District Road (DR) - Shankarpally Town to Narsingi Town in Ranga Reddy District, Hyderabad City is undertaken. The location of this project for the analysis is from CBIT College to Narsingi Rotary of Hyderabad, Telangana State. The length of the stretch is 4.8km. The roadway carries considerable amount of traffic throughout the day and it has number of conflict points such as merging of traffic from flyover. By identifying potential hazards and deficiencies early in the road development process, RSAs enable the implementation of cost-effective safety measures, thereby preventing accidents and saving lives. From this project we have collected data on road side features, road safety signs, traffic volumes, road roughness, superelevation, accident data and suggested mitigation strategies to improve the safety at various problematic locations of the stretch.

Key words: Road Safety Audit, Road traffic, Congestion, Mitigation Strategies, Traffic Volume.

QR Code Generator

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Abstract:
This research presents the design and implementation of a versatile QR code generator system, which allows for the efficient encoding of various types of data into QR codes. The system is built using a scalable software architecture that can be integrated into web and mobile platforms. It supports customizable code generation, including error correction levels, size optimization, and design personalization. The QR codes generated are compatible with most modern scanners and devices, offering robust performance even in low-resolution conditions. The system also includes security features such as encryption for sensitive data. Extensive testing confirms its usability in diverse real-world applications, such as digital marketing, secure information exchange, and automated inventory systems. This study contributes to enhancing QR code utility and accessibility in both commercial and academic domains.

Key Words: JavaScript, HTML, CSS, QR Code Generation, Data Encoding, Real-time Feedback, Performance Optimization, Integration Capabilities, User Experience (UX), Input Validation, Data Encryption.

Grocery Bill Management System

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Abstract:
The Grocery Bill Management System is a Python-based application developed to streamline the billing process for grocery stores using a user-friendly graphical user interface (GUI) built with Tkinter. The system allows customers to input their details, select various grocery items with specific quantities, and automatically calculates the total bill amount, including applicable taxes. Key features include random bill number generation, customer phone number validation using regular expressions, and error handling to ensure the accuracy of customer details and billing information. This project significantly reduces the manual effort required for billing by automating calculations and bill generation, making it suitable for small-scale retail environments. The goal is to enhance efficiency and accuracy in grocery bill generation, providing users with a seamless experience. The system's flexibility allows easy modification of item prices, tax rates, and product categories, making it adaptable to varying retail needs. The Grocery Bill Management System offers a reliable solution for managing billing processes in grocery stores, ensuring a smooth and error-free transaction process.

Keywords: Python, Tkinter, Billing System, Data Validation, Retail Application, GUI Development, Grocery Management

Hand Gestures Using OpenCV

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Abstract:

Hand gesture recognition is an important application in computer vision, enabling systems to interpret human gestures as input commands. This project focuses on implementing a hand gesture recognition system using traditional computer vision techniques with OpenCV and Python. The system includes steps such as image preprocessing, hand detection using Haar cascades, and feature extraction for recognizing gestures. The project demonstrates the practical application of hand gesture recognition technology in areas such as human-computer interaction, gaming, and assistive technologies. By utilizing OpenCV's robust image processing capabilities, this system provides a reliable solution for gesture recognition without the complexity of deep learning models.

Hand gesture recognition is a field in computer vision that translates human hand movements into commands for computer systems. It has applications in areas like augmented reality, virtual reality, robotics, and accessibility technology. This project leverages traditional computer vision techniques, allowing real-time gesture recognition with reduced computational requirements, which is particularly beneficial for systems with limited resources.

Keywords: OpenCV's, virtual reality, robotics

INTELLIGENT MEDICATION FOR A HEALTHIER TOMORROW

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Abstract: It will be an all-around health platform presented here in the proposal to help the users identify potential health conditions, access relevant advice on medication, and accordingly, manage their overall well-being effectively. This platform applies machine learning algorithms that help adequately predict the chances of diseases, given when users report symptoms. The patient portal will also be provided- administered as a user-friendly point of access for secure medical history storage, medication tracking, personalized reminders, and health goal management. This site further empowers user engagement as well as improves medication adherence with functionalities that track intake of medication and patterns of adherence. It also integrates local pharmacies to check medication availability. The integration of both functionalities should enable people to take a more active role in healthcare, which might lead to improved medication adherence and outcomes generally in healthcare.

Key words:- Drug, Recommender System, Machine Learning, NLP, TF-IDF, Sentiment analysis, SVM, Electronic Health Records (EHRs), Symptom Analysis, Healthcare Technology.

Flip Game: A Web Based Interactive Memory Flip Card Game

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Abstract:
The memory card game is a game that probably everyone played in childhood. The game consists of n pairs of playing cards, where as each card of a pair is identical. At the beginning of the game, the deck of cards is shuffled and laid face down. In every move of the game, the player flips over two cards. If the cards match, the pair of cards is removed from the game The Flip Game project is a web-based interactive memory card game developed using HTML, CSS, and JavaScript. The game's primary objective is to allow players to match pairs of symbols by flipping cards. It offers three difficulty levels: Casual, Medium, and Hard, making the game accessible to a wide range of players. The game interface is responsive, making it adaptable to various devices such as desktops, tablets, and smartphones. By using local storage, the game tracks user statistics like wins, losses, and best times. This paper discusses the project's design, implementation, results, and future enhancements, focusing on how modern web technologies are used to create an engaging and cognitively challenging gaming experience.

Keywords: Memory game, Interactive, Difficulty levels, Responsive design, User Interactions, Statistics tracking, congnitively

A Study on strength characteristics of Basalt Fiber Concrete

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Abstract:

Concrete is one of the oldest and most common construction materials in the world mainly due to its low cost and availability. Concrete has attained the status of a major building material in all the branches of modern construction. It is difficult to point out another material of construction which is as variable as concrete. Concrete is the best material of choice where strength, durability, impermeability, fire resistance and absorption resistance are required. The main objective of this study is to investigate and compare the compressive, flexural and splitting tensile strength of Basalt fiber concrete with plain M30 grade concrete. Basalt fiber is a material made from extremely fine fibers of basalt, which is a natural material that is found in volcanic rocks originated from frozen lava. It is used as a fire proof textile in the aerospace and automotive industries.In general fibers are used in concrete to improve its structural integrity. Now a days, among all fibers, Basalt fiber is gaining more importance due to its exceptional properties which include resistance to corrosion and low thermal conductivity. It also improves tensile strength, flexural strength and toughness of concrete. It can be used to extend the life of important concrete structures such as nuclear power plants, highways and bridges. The variable factors considered in this study were M30 grade of concrete cubes, cylinders and beams are prepared by using cubes of size (150 x 150 x 150) mm and cylinders of size 150 mm (dia) x 300 mm (depth) and beams of size (500 x 100 x100) mm that were casted and cured in portable water for a period of 28 days. The specimens were then tested for split tensile strength, flexural strength and compression strength of the conventional concrete without using Basalt fiber and concrete with using Basalt fiber material at 7,14,28 days.

Keywords: Concrete, Basalt fiber, Compressive strength, flexural strength, Split tensile strength.

Influence of Partially Replacement of Stone and Marble Dust in Concrete

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Abstract:

Owing to increase the construction activities for different regions and utilities scaring of natural resources is being forced due to its over exploitation.Stone dust is such an alternative material which can be effectively being used in construction as replacement of natural sand. Concrete is mixing of all the ingredients such as cement, sand,aggregates and water. Stone dust is used in concrete in place of fine aggregates. For that purpose stone dust is collected from quarries. The collected stone dust should be passed from 1 mm sieve. Here we use M30 grade of concrete in our project. Here we consider mix design.

In this paper the effect of using marble powder and granules as constituents of fines in mortar or concrete by partially reducing quantities of cement as well as other conventional fines has been studied in terms of the relative workability & compressive as well as flexural strengths. Partial replacement of cement and usually fine aggregates by varying percentage of marble powder and marble granules reveals that increased waste marble powder (WMP), waste marble granule (WMG) ratio result in increased workability and compressive strength of the mortar and concrete.

Keywords:

Marble Powder, Marble Granules, Stone Dust, Stone Granules, Compressive strength, Flexural Strength.

Mechanical Properties of Concrete by the Addition of Asbestos and Recron 3S Fibers

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Abstract:

All countries are focusing on sustainable technology that can be economical and adopted for the use of concrete in a better way. Concrete is most widely used construction material and it posses very low tensile strength, shear strength and brittle characteristics. In order to improve this properties a new construction materials was developed through research and development work called asbestos fiber concrete and recron 3s fibers concrete. M30 grad eof concrete was designed. The addition of asbestos fiber and recron 3S fiberthe concrete. To determine the properties like tensile strength, compressive strength and flexural strength were performed at different ages like 7,14 and 28 days. The addition of asbestos fiber varies from 0%, 0.25%, 0.5%, 0.75%and 1% by volume of concrete and recron 3S fiber varies from 0%, 0.25%, 0.5%, 0.75% and 1% by volume of concrete.

KEYWORDS Asbestos fiber concrete, Recron 3s fiber concrete, Tensile strength and compressive strength.

Study on Precast Concrete Construction

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Abstract:

Precast concrete offers many advantages, including a reduction of the construction period, cost efficiency, high-quality control, fast and accurate erection of members, and environmental protection. Despite the aforementioned advantages of the precast concrete members, the conventional precast members may show drawbacks in the following aspects: (i) the use of the concrete pour forms at the joints delaying the erection of each subsequent frame and (ii) the lack of the structural continuity and redundancy in the load paths when beams simply sit on corbels without providing moment resisting capacity. Precast steel-concrete hybrid frames are preferable over the conventional precast concrete practices since they are less heavy, achieving cost-efficient structural systems with fast erections. The conventional steel connections can be used for the precast column-to-beam joints, offering rapid and facile erection similar to that of steel frames with few crews on site.*Precast concrete* is reinforced concrete that is cast away from the building site, and assembled on site. Some (but not all) precast concrete is available in standard shapes and dimensions: floor and roof planks, tees and double-tees are examples. Otherwise, precast concrete may be fabricated in any shape and size consistent with the laws of statics; the strength and stiffness of the materials; and the constraints imposed by formwork, transportation, handling, and erection. Precasting may imply a loss of structural continuity if connections are made with steel inserts bolted or welded together to create simple supports. On the other hand, it is possible to design precast systems whose behavior is identical to that of site-cast systems by maintaining the continuity of steel reinforcement from element to element. Special products are available to connect rebars that have been left exposed at the ends of the concrete pieces; non shrinking grouts are then used to fill in the voids and complete the structural connection. advantages and disadvantages of precast construction are also discussed here.

Keywords: Precast concrete, cast in situ, construction, comparison.

STABILIZATION OF EXPANSIVE SOIL USING BAGASSE ASH AND BAMBOO LEAF ASH

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Abstract:

Soil stabilization is being done now- a-days to improve various physicalproperties like shear strength, bearing capacity, control shrink and swellproperties, etc. It also helps in reducing permeability and reduction of pavementthickness. The study was basically carried out to determine the properties ofSugarcane Bagasse ash & Bamboo Leaf Ash on Expansive clay soil. Bagasse isa fibrous material remaining after crushing sugarcane to extract its juice; andbagasse ash is produced after burning bagasse. Bamboo leaf ash is obtained byburning dried bamboo leaves. Improper disposal of these materials can create environmental problems around sugar manufacturing plants and on roads. Boththe materials comprise of a high percentage of silica (SiO2), which is consideredas a sensible pozzolanic material with non-reactive behaviour and has potentialto be used in soil stabilization. Various tests were being conducted to identify andclassify the soil. The soil was stabilized by adding 1%, 2%, 4%, 6%, 8%sugarcane Bagasse ash in one sample and 1%, 2%, 4%, 6% Bamboo leaf ash inanother sample. SPT is performed at every percentage and OMC, MDD areestablished. And the percentage at which MDD is maximum is considered as theoptimum percentage of admixture. CBR and UCC and DFSI tests are performedat the optimum percentage of admixture to determine the improved strength.

Keywords: Bagasse Ash, Bamboo Leaf Ash, Bearing capacity, CBR, DFSI,MDD,OMC, Pozzolanic material, SPT

Structural Analysis and Design of a Three Floor Building

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Abstract:
This project presents the structural analysis and design of a three-floor residential building, with a focus on optimizing safety, stability and cost-effectiveness while ensuring compliance with relevant building codes and standards. The study encompasses load analysis, including dead loads, live loads, Wind loads, and seismic forces in line with regional regulations. Key components such as beams, columns, slabs and foundations which were designed to resist anticipated stress and displacements, aiming for an efficient balance between material use and structural integrity. Finite element analysis and modelling software's were employed to simulate load effects and structural behavior, identifying potential issues in real world scenarios. This project provides a comprehensive blueprint for constructing safe and sustainable residential buildings considering both architectural functionality and structural soundness.

In addition to load analysis our project involves designing structural components with appropriate reinforcement detailing to handle bending, Shear and stress. Each component, i.e. columns, beams, slabs and foundations, was dimensioned and reinforced according to standard practices to maintain structural integrity and meet serviceability requirements over the expected building's life span.

Sustainability and material efficiency were also primary considerations as our project aims to minimize the environmental impact while maintaining structural performance. Alternative materials and sustainable construction techniques were explored to reduce the carbon footprint. The project also addresses safety concerns and building code compliance particularly in terms of safety and ventilation requirements. By incorporating energy efficient design practices and considering future adaptability, this project not only meets current structural and safety standards but also lays the groundwork for resilient and sustainable residential building practices in urban settings.

Key words: -Environmental sustainability, Architectural requirements, Performance assessment, Cost effectiveness, Compliance, Residential Construction.

NATURAL TECHNOLOGY OF WASTEWATER TREATMENT

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ABSTRACT:

Several treatment techniques are existed with chemicals and biological materials but our study focused on natural materials in purification of water. These materials have been carried out to improve the quality of drinking water of Godhavari river in Telangana with the application of Moringa oleifera, Banana peel, Coconut shell. During this work examination of raw water and treated and sample Water for heavy metals, Alkalinity, Hardness, BOD, COD, Fluorides, Nitrites and Microbial count were analysed. This process gives advantage in terms of applicability for individual (household) and very small to large scale, in order to purify domestic municipal and some types of industrial water. The current sanitation scenario of urban India is one of severe lack of collection, treatment and disposal systems for domestic sewage. In order to tackle this problem and protect water resources from contamination, while also augmenting usable water resources, there is an urgent requirement to identify appropriate technologies for water treatment. We have been monitoring the process of design and maintenance of filters closely and monitored the input and treated water quality over a period of time. In this report, the technology is explained along with information on the design of natural purification filters. In order to assess the efficiency of the water Treatment, numerous water quality tests were carried out. The results we obtained are in satisfactory range for domestic use, and with the further purification we can use it for drinking purpose.

Keywords: Alkalinity, Hardness, BOD, COD, Fluorides, Nitrites, Microbial count, Moringa oleifera, Banana peel, Coconut shell.

Explainable AI in Image Processing

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Abstract:

This paper is of special interest for critical domains as healthcare, autonomous systems, security, etc., using DL models for image processing, where interpretability of the results is often a crucial complementary requirement to the model accuracy. The current paper aims to propose an application of novel XAI methods that is appropriate for image processing models that handles high-showcasing applications, improving the interpretability of such models. In this work, we propose to enhance and apply a set of techniques including saliency maps, the concept-based reasoning, and the case-based reasoning to make the deep convolutional neural networks interpretable in terms of key regions and concepts that can encourage its decisions. We have also incorporated an interface for presenting these explanations which is equally understandable by other non computer professionals such as radiologists or a safety inspector. We prove our approach in case of medical imaging and self-driving car system, where explainable AI can improve user confidence, model sanity checking and decision-making. To this end, our study establishes how XAI's integration into image processing pipelines can close gaps between high model performance and essential human-centered use cases and set a base for AI's responsible application.

Key words:-AI, XAI, DL, Healthcare, Machine Learning.

RECIPE FINDER

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Abstract

The Indian Recipe Explorer is a Python-based application, developed using the tkinter GUI toolkit, that allows users to discover and prepare Indian recipes based on their available ingredients. Featuring an intuitive interface, the application enables users to browse various ingredient categories, such as grains, legumes, vegetables, and spices, and select them via checkboxes. Upon selection, it generates a list of matching recipes, each accompanied by a detailed ingredient list and cooking instructions. This interactive tool not only simplifies the culinary experience by recommending recipes based on ingredient availability but also fosters culinary exploration, encouraging users to delve deeper into Indian cuisine's diverse flavors and cultural richness. Through this application, users can effortlessly discover new dishes and enjoy the art of Indian cooking from the comfort of their homes.

Keywords

Indian Recipe Explorer, Python, Tkinter, GUI, ingredient selection, recipe matching, Indian cuisine, food exploration, cooking instructions, user-friendly application, interactive interface, ingredient categories, recipe discovery, Python project, meal preparation.

Text-to-Speech Conversion

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Abstract:
The Text-to-Speech (TTS) Conversion project is a pivotal technology aimed at transforming written text into audible speech. This system is designed to cater to a wide array of applications, including accessibility for visually impaired individuals, educational tools, and interactive virtual assistants. The project involves various components such as text preprocessing, linguistic analysis, acoustic modeling, and waveform synthesis to convert text into natural-sounding speech.

Recent advancements in deep learning and neural network architectures are leveraged to enhance the naturalness, expressiveness, and efficiency of synthesized speech. The project also addresses challenges like prosody modeling, accent adaptation, and speaker verification. Future directions for the TTS system include real-time processing improvements and personalized voice synthesis, pushing the boundaries of natural communication between humans and machines.

Keywords: Text-to-Speech, Deep Learning, Neural Networks, Speech Synthesis, Accessibility, Natural Language Processing (NLP), Prosody Modeling.

Rhythm Zone: Personalized Music Recommendation Web Application

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Abstract:

The Rhythm Zone: Personalized Music Recommendation Web Application is a web based audio player. The application is using the audio files are digital files. So you need a tool to run the digital files, or in other words to play the files. Without this tool or player, it can't able to listen to music, movies or the contents of an Audio file. The music player device is used to play music and other Digital audio files. Where it can be done by ourselves, without having to download and install premium music Players. The music player GUI project idea tries to emulate the physical music player. Music player Program allows you to play songs, music and all music files on your desktop or laptop. Using HTMLCSS and JavaScript is a basic programming application built. It is a GUI program created Using the basic java script libraries. The music player application must be able to play a song, create and display a playlist, pause and resume a long song, and change the song. Play the previous or Next song. The goal of this project is to design and develop a basic music player graphical user interface (GUI) application using HTML, CSS, and JavaScript, allowing users to: 1. Play digital audio files 2. Create and display playlists 3. Pause and resume playback 4. Change songs (play previous/next) 5. Emulate a physical music player experience In essence, the goal is to create a simple, self-contained, and free music player application without requiring premium software downloads.

Keywords: - JavaScript, HTML5, CSS3, Graphical user interface (GUI), Music player, Web applications, Audio streaming, Digital audio processing, Playlist management, User experience (UX).

Serverless Computing: Revolutionizing Application Deployment

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Abstract:

Serverless computing has emerged as a game-changing paradigm in the world of cloud computing, allowing developers to focus purely on writing code without worrying about the infrastructure required to run it. In a serverless architecture, cloud service providers dynamically allocate and manage the resources necessary for running the applications, which results in optimized resource usage and scalability. Though the term "serverless" may imply the absence of servers, servers are indeed involved but abstracted away from the developer's perspective.

Serverless computing is transforming how applications are built, deployed, and maintained. By offloading infrastructure management to cloud providers, organizations can focus on innovation, reduce costs, and scale seamlessly. However, like any technology, serverless has its limitations and may not be ideal for every use case. Developers must weigh the benefits of reduced operational complexity and cost-efficiency against potential challenges like cold starts, statelessness, and vendor lock-in when considering serverless architectures for their applications.

Keywords: Serverless computing, Application, Deployment

BMI Calculator: A Web-Based Health Assessment Tool

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Abstract

The Body Mass Index (BMI) Calculator is a web-based tool created to enhance health awareness and support proactive health management by providing users with a simple means to assess their weight status. Through this tool, users can input their height and weight to instantly calculate their BMI and understand their health category, ranging from underweight to obese. Developed using HTML, CSS, and JavaScript, the BMI Calculator is tailored for ease of use and accessibility, offering an intuitive interface that caters to users of all ages and backgrounds. By making BMI insights readily available, the application encourages individuals to take an active role in understanding their health and making informed lifestyle choices. This paper explores the tool's design, architecture, development process, and the broader significance of digital health applications in promoting health literacy and awareness in the digital age.

Keywords: Health Assessment, BMI, Web-Based Tool, JavaScript, Health Awareness.

MEMORY CARD GAME: Building a interesting mind game

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Abstract: The Memory Card Game is a classic cognitive exercise involving matching pairs of identical cards. Players take turns flipping two cards, aiming to reveal matching pairs. Successful matches are removed, while mismatched cards are flipped back over. The game continues until all pairs are matched, with the player achieving the fewest turns emerging as the winner. This simple game offers significant cognitive benefits, including enhanced memory, improved attention, and increased problem-solving skills. The basic gameplay involves shuffling and arranging paired cards face-down, taking turns to flip two cards, and matching pairs for removal. Numerous variations exist, such as adjusting difficulty levels, introducing time limits, using themed decks, and playing cooperatively. The Memory Card Game's educational applications are significant, as it can reinforce learning concepts, develop cognitive skills, and promote engagement. Its versatility and adaptability make it suitable for both casual play and educational purposes, making it a timeless and enjoyable activity for individuals of all ages.

Keywords: Machine Learning, Heart Attack Prediction, Random Forest Classifier, Healthcare Analytics, Predictive Modeling, GUI Development, Python, Early Detection, Cardiovascular Risk Assessment, Clinical Decision Support.

Smart Living: Home Automation System Powered By Machine Learning and IoT

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Abstract:
Home automation can be utilized to maintain comfortable living conditions within a home, requiring minimal interaction with the system to ensure it remains easy to use and uncomplicated. Faces can serve as the key for room automation, enabling the control of devices and peripherals through facial recognition. When a person enters the room, the pre-selected devices automatically turn on without the need for the user to press any buttons. Users can preselect which devices they want to be activated during the process. Users need to train their faces to be recognized. Different users can register for unique personalization. This system exemplifies the application of IoT in home automation, utilizing smart techniques that include an Arduino as the processing unit for data gathered from a camera, along with a graphical user interface for program control.

Keywords:- IoT, Machine Learning, Automation, Computer Vision, Home Appliances, Home Automation System, Arduino.

Development of a Multi-functional JavaScript-Based Calculator

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Abstract:

The rapid advancement of technology has transformed the tools we use daily, with calculators being no exception. This project delves into the creation of a sophisticated, JavaScript-based calculator that not only addresses the limitations of traditional calculators but also introduces a range of modern functionalities. By integrating features like matrix operations for varying sizes, advanced scientific calculations, and customizable user interfaces, this project aims to develop a tool that is both user- friendly and versatile. The proposed calculator is built using HTML and CSS for a responsive, grid- based interface, while JavaScript, augmented with Math.js, provides the necessary computational power. Designed to cater to a wide audience, from students to professionals, this calculator enhances accuracy, speed, and user experience. The following sections explore the methodology behind its development, the results obtained, and a discussion on its potential applications. In many educational and professional settings, users often need to perform calculations that go beyond simple arithmetic. For instance, in linear algebra, matrix operations are essential.

Keywords: Matrix Operations, Scientific Functions, Customization, Cross-Platform Compatibility, Matrix Operations, Scientific Functions, Cross-Platform Compatibility, Web Standards Compliance.

Snake and Ladder

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Abstract:

This project aims to design and implement a digital version of the classic board game "Snake and Ladder. The game will be developed using programming languages such as Python or JavaScript and will include features such as a graphical user interface (GUI) for interaction, customizable board sizes, and single or multiplayer modes.

The primary components of the project include:

1.Game Logic: Implementing the core game mechanics including dice rolling, player movement, ladder climbing, and snake descending.

2.Graphical User Interface (GUI): Designing an intuitive and visually appealing interface for players to interact with the game. This may include displaying the game board, player pieces, and relevant game information such as current player turn and dice rolls.

3. Customization Options: Providing users with the ability to customize game settings such as board size, number of players, and difficulty level,

4. Single and Multiplayer Modes: Implementing both single-player mode against computer-controlled opponents and multiplayer mode for local or online play.

5. Game State Management: Developing mechanisms to save and load game progress, allowing players to resume their games at a later time.

6. Scalability and Performance: Ensuring the game is optimized for performance and can handle different screen sizes and device specifications.

The completion of this project will offer a digital adaptation of the traditional "Snake and Ladder game, providing users with a fun and entertaining gaming experience while also demonstrating proficiency in programming, game design, and user interface development.

Keywords: Snake and Ladder, Digital Version , Programming Languages, Graphical User

Interface, Customization Options, Game Logic, Single Player Mode, Multiplayer Mode,

Computer-Controlled Opponents, Game State Management.

ARTIFICIAL INTELLIGENCE (AI) IN SOCIAL MEDIA MARKETING: OPTIMIZING ENGAGEMENT AND REACH

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Abstract

This article explores the transformative role of artificial intelligence (AI) in social media marketing, focusing on its capacity to optimize engagement and expand reach. AI technologies, including predictive analytics, content creation tools, and automated customer interactions, enable brands to tailor their marketing strategies for enhanced personalization and effectiveness. By leveraging AI-driven insights, marketers can identify trends, understand audience sentiment, and deliver targeted advertising, thereby improving overall campaign performance. The integration of AI not only streamlines social media management but also fosters deeper connections with consumers, ultimately driving brand loyalty and growth in a competitive landscape.

Keywords: Artificial Intelligence, Social Media Marketing, Predictive Analytics, Content Creation, Automated Interactions, Audience Insights, Targeted Advertising, Brand Loyalty.

The Evolution and Dynamics of the Indian Debt Market

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Abstract: The Indian debt market, an essential component of the country's financial system, has witnessed significant growth and development in recent decades. This paper explores the structure, evolution, and key players in the Indian debt market, focusing on government and corporate bonds, along with the challenges and opportunities facing the market. The study examines the impact of regulatory reforms, foreign investment, and macroeconomic factors on the market's development. It also provides insights into the role of the debt market in economic growth, financial stability, and capital formation.

Key words: Debt market, Corporate bonds, foreign investment, Financial stability

Employee Training and Development

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Narsimha Reddy Engineering College, Hyderabad, India

Abstract

Employee training and development (T&D) are critical aspects of human resource management that contribute significantly to the overall success of an organization. Training programs equip employees with the necessary skills and knowledge to perform their current jobs efficiently, while development programs focus on long-term career growth and the enhancement of leadership potential. This paper examines the importance of employee training and development, explores various training methods, discusses the impact of training on organizational performance, and analyzes the challenges faced by organizations in implementing effective T&D programs. Finally, the paper presents recommendations for optimizing training initiatives to align with organizational goals and improve employee performance.

Keywords: Training and development, Job efficiency, Career growth

Impact of Cause-Related Marketing on Customer Behavior in India: Analyzing Consumer Preferences and Brand Loyalty

Dr. Nagaraja Pandukuri[1], Mr. B. Kasi Viswanadham, Mr. KMD Bhavani[3], Mr. K Gowri Kumari[4]
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Abstract:

This article explores the impact of cause-related marketing (CRM) on customer behavior in India, analyzing how CRM initiatives influence consumer perceptions, purchase intentions, and brand loyalty. Cause-related marketing, which aligns a company's products or services with social causes, has gained traction among brands as an effective strategy to differentiate themselves in a competitive market. The study examines various CRM campaigns across industries, focusing on how these initiatives affect customer trust, emotional connection, and purchase decisions.

Through surveys and case studies, this research highlights Indian consumers' increasing inclination toward brands associated with social causes, particularly those addressing environmental sustainability, education, and health. Findings indicate that CRM positively influences consumer behavior, with many consumers showing preference for brands they perceive as socially responsible. However, the study also reveals that the effectiveness of CRM is contingent on the perceived authenticity and relevance of the cause to the brand, with consumers favoring brands that demonstrate genuine commitment to their chosen causes.

The article concludes that CRM can be a powerful tool in the Indian market for building brand loyalty and enhancing consumer engagement, provided the campaigns are well-aligned with customer values and societal needs. This study provides valuable insights for marketers looking to implement effective CRM strategies to foster long-term customer relationships in India.

Key words:- Cause-related marketing (CRM), Customer behavior, Brand loyalty, Purchase intention, Social responsibility, Consumer trust, Brand perception

EMERGING AI TRENDS IN HR: SHAPING THE FUTURE OF WORK

K Gowri Kumari[1] Dr. Nagaraja Pandukuri[2], Dr. Nagaraja Pandukuri[1], Mr. KMD Bhavani[3], Mr. B. Kasi Viswanadham4,
[1]Department of Master of Business Administration
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Abstract:

The integration of artificial intelligence (AI) in human resources (HR) is rapidly transforming the workplace landscape, reshaping recruitment, employee engagement, and performance management. This paper explores emerging AI trends in HR, highlighting their implications for workforce optimization and organizational culture. Key developments include the use of AI-driven recruitment tools, predictive analytics for talent management, and automated employee support systems. The study emphasizes the benefits of enhanced efficiency and data-driven decision-making while addressing potential challenges such as bias and ethical considerations. By examining case studies and industry reports, this research provides insights into how AI is not only streamlining HR processes but also fostering a more dynamic and inclusive workplace environment.

Keywords: Artificial Intelligence, Workforce Optimization, Predictive Analytics, Employee Engagement, Automation, Ethical Considerations, Organizational Culture, Future of Work.

The Evolution and Impact of Retail Marketing Strategies in the Modern E

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Narsimha Reddy Engineering College, Hyderabad, India

Abstract:

Retail marketing has undergone significant transformation due to advancements in technology, shifts in consumer behavior, and the rise of new business models. This paper explores the evolution of retail marketing strategies, focusing on how digital technologies, omnichannel retailing, personalized marketing, and consumer engagement have reshaped the retail landscape. The study further examines the key trends in retail marketing, including the integration of data analytics, social media marketing, and experiential retail. The impact of these trends on both consumers and retailers is analyzed to understand the broader implications for future retail strategies.

Key words: Consumer behavior, Marketing Strategies, Digital technologies, Consumer engagement

Sustainable Finance and ESG Investing

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Abstract

Sustainable finance and Environmental, Social, and Governance (ESG) investing have garnered significant attention in recent years as global investors, corporations, and policymakers have shifted focus toward long-term value creation that incorporates sustainability and social responsibility. This paper explores the evolution of sustainable finance and ESG investing, its impact on financial markets, and the role of regulatory frameworks in advancing ESG-related goals. Additionally, we analyze the integration of ESG factors into investment strategies, challenges in measuring sustainability performance, and the growing influence of public and private sector initiatives in promoting responsible investment. The paper concludes by evaluating the future outlook of ESG investing and its potential to reshape global financial markets

Key words: Environmental, Social, and Governance (ESG),Global investors,ESG finance, Financial markets, Responsible Investment

Cyber Hacking Breaches Prediction and Detection Using Machine Learning

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Abstract:

Cyber hacking breaches prediction is one of the emerging technologies and it has been a quite challenging task to recognize breaches detection and prediction using computer algorithms. Making malware detection more responsive, scalable, and efficient than traditional systems that call for human involvement is the main goal of applying machine learning for breaches detection and prediction. Various types of cyber hacking attacks any of them will harm a person's information and financial reputation. Data from governmental and non-profit organizations, such as user and company information, may be compromised, posing a risk to their finances and reputation. The information can be collected from websites that can trigger cyber attack. Organizations like the healthcare industry are able to contain sensitive data that needs to be kept discreet and safe. Identity theft, fraud, and other losses may be caused by data breaches. The findings indicate that 70% of breaches affect numerous organizations, including the healthcare industry. The analysis displays the likelihood of a data breach. Due to increased usage of computer applications, the security for host and network is leading to the risk of data breaches. Machine learning methods can be used to find these assaults. By research, machine learning models are utilized to protect the website from security flaws. The dataset can be obtained from the Privacy Rights Clearinghouse. Data breaches can be decreased by educating staff on the use of modern security measures. This can aid in understanding the attacks knowledge and data security. The machine learning models like Random Forest, Decision Tree, k-means and Multilayer Perceptron are used to predict the data breaches.

Key Words: Cyber Haching Randam forest Algorithm

Usage of Machine Learning algorithms in Agriculture Domain

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Abstract:

Food is thought to be a basic human need that may be met through farming. In addition to providing for people's basic needs, agriculture is regarded as a global employer. In emerging nations like India, agriculture is seen as the foundation of the economy and a major source of jobs. India's GDP is 15.4% derived from agriculture. Pre-harvest, harvesting, and post-harvesting are the three main categories into which agricultural activities can be generally divided. Improvements in agriculture have been aided by developments in machine learning. By offering extensive recommendations and insights into the crops, machine learning is the current technology that helps farmers reduce farming losses. This study provides a thorough analysis of the most recent machine learning applications in agriculture to lessen the This paper presents an extensive survey of latest machine learning application in agriculture to alleviate the problems in the three areas of pre-harvesting, harvesting and post-harvesting. Application of machine learning in agriculture allows more efficient and precise farming with less human manpower with high quality production.

Key words:- Deep learning, Harvesting, Machine learning, Post-harvesting, Pre-harvesting

Brain Stroke Detection System based on CT Images using Deep Learning

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Abstract:

Cerebrovascular diseases such as stroke are among the most common causes of death and disability worldwide and are preventable and treatable. Early detection of strokes and their rapid intervention play an important role in reducing the burden of disease and improving clinical outcomes. In recent years, machine learning methods have attracted a lot of attention as they can be used to detect strokes. The aim of this study is to identify reliable methods, algorithms, and features that help medical professionals make informed decisions about stroke treatment and prevention. To achieve this goal, we have developed an early stroke detection system based on CT images of the brain coupled with a genetic algorithm and a bidirectional long short-term Memory (BiLSTM) to detect strokes at a very early stage. For image classification, a genetic approach based on neural networks is used to select the most relevant features for classification. The BiLSTM model is then fed with these features. Cross-validation was used to evaluate the accuracy of the diagnostic system, precision, recall, F1 score, ROC (Receiver Operating Characteristic Curve), and AUC (Area Under The Curve). All of these metrics were used to determine the system's overall effectiveness. The proposed diagnostic system achieved an accuracy of 96.5%.We also compared the performance of the proposed model with Logistic Regression, Decision Trees, Random Forests, Naive Bayes, and Support Vector Machines. With the proposed diagnosis system, physicians can make an informed decision about stroke.

Key Words: Deep learning, ROC, Convolutional Neural Network (CNN)

Accident Detection and Response system using Artificial Intelligence

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Abstract:

In a now a day's life we see everywhere like newspaper, TV news that the death of peoples due to accident .The rate of death due to road accident is increased tremendously ,especially accident occurred on highways and some are at the nights due to lack of sufficient light. The always advancing technology has created our day to day lives easier. The rise in technology has exaggerated the rate of road accidents that causes loss of life. The poor emergency facilities out there in our country simply boost this downside. There are no proper precautions to reduce the accidents in our country. So, in our project is going to provide a solution to these problems. According to our project when a vehicle meets with an accident or also providing the accident prevention before its occurring, a sensor situated on the vehicle will detect it immediately and send a message to the microcontroller. The microcontroller then sends the alert message with the help of GSM modem to a police control room or rescue team which will include the location with the help of GPS. Also the alert message containing the situation of accident are
going to be send to the relatives of the victim. In case there is no casualty the driver can terminate the alert message by a switch provided in the vehicle. This will save the valuable time of rescue team. Our project is beneficial for detecting the accident exactly with the assistance of sensors and microcontroller. Keeping in mind the scope for improvement, we can add a wireless webcam which will capture the images at the time of accident which will help in providing accurate help to the victim as quick as possible. It may be interfaced with vehicle airbag
system and a bomb detector.

Key Words: Sensor, microcontroller, GPS module, GSM module, alert message**.**

Recognition of Adulteration in Fruits Using Machine Learning Algorithms

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Abstract:

Human Life needs food, the health of humans to be properly maintained, the food we eat must be nutritious, pure, and devoid of any kind of corruption. This study develops a machine-learning-based IoT-based food and formalin detection method to identify the presence of formalin. Any fruit or vegetables formalin concentration as a function of output voltage was measured using a volatile compound HCHO gas sensor attached to a Raspberry Pi3. Various machine learning techniques were then used to categories the fruit or vegetable according to the attributes that were retrieved. Our method has been enhanced using supervised machine learning algorithms to precisely forecast the proper formalin concentration at all temperatures and to correctly distinguish between artificially.

Key words:- Adulteration in Fruits, Internet of thing, Machine-Learning

An advanced Weapon Detection System using Deep Learning algorithms

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Abstract:

Considering a growing number of criminal acts, there is an urgent need to introduce computerized command systems in security forces. This study presents a novel deep learning model specifically developed for identifying seven different categories of weapons. The suggested model utilizes the VGGNet architecture and is implemented utilizing the Keras architecture, which is built on top of the TensorFlow framework. The model is trained to recognize several types of weapons, including assault rifles, bazookas, grenades, hunting rifles, knives, handguns, and revolvers. The training procedure involves creating layers, executing processes, saving training data, determining success rates, and testing the model. A customized dataset, consisting of seven different weapon categories, has been meticulously chosen and organized to support the training of the proposed model network. We do a comparative study using the newly created dataset, specifically comparing it with established models such as VGG-16, ResNet-50, and ResNet-101. The suggested model exhibits exceptional classification accuracy, obtaining a remarkable 98.40%, outperforming the VGG-16 model (89.75% accuracy), ResNet-50 model (93.70% accuracy), and ResNet-101 model (83.33% accuracy). This research provides a vital viewpoint on the effectiveness of the suggested deep learning model in dealing with the complex problem of weapon classification, presenting encouraging outcomes that could greatly improve the capabilities of security forces in countering criminal activities.

Key Words: Weapon Detection System, VGGNet , YOLOv8 Architecture, deep learning

Risk Classification and Auxiliary Diagnosis of Macular Edema

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Abstract:

Background and objective: Diabetic macular edema is one of the main causes of visual impairment in patients with diabetic retinopathy. As the number of patients with diabetes increases, so will the number of patients with diabetic macular edema. Early screening of patients for macular edema can provide timely and scientific clinical diagnosis and treatment. In this paper, we take fundus images of diabetic retinopathy patients as the processing object and use artificial intelligence technology to construct an automatic macular edema classification model, in order to achieve low-cost and rapid fundus image classification. This can be considered beneficial for the screening of macular edema patients on a large scale.

Methods: In this paper, a computerized automatic macular edema grading model is constructed using a senet convolution neural network embedded within the Squeeze-and-Excitation module, optimizing the algorithm to use the imbalanced public data set Messidor and drawing class activation maps to aid in diagnosis.

Results: The AUCs of macular edema risk grades 0, 1, and 2 were 0.965, 0.881, and 0.963, respectively. Class activation mappings correctly mark focal areas for macular edema risk classification in fundus images.

Conclusions: The constructed grading model showed a good recognition rate for fundus image variations caused by diabetic retinopathy. These results are of certain theoretical and practical significance for the auxiliary diagnosis of macular edema risk grades.

***Key Words**:* Diabetic macular edema ,Deep learning ,CNN

Speed Estimation on Moving Vehicle Based on Digital Image Processing and CNN

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Abstract:

Along with the development of information and communication technology, the world urban people now recognizea new term called Smart City. One of Smart City components is smart transportation, known as Intelligent Transportation System (ITS) in which there is transportation management on the highway. Installation of CCTV (Closed Circuit Television) on the streets are now widely performed. It can be used to monitor conditions and detect problems such as traffic jam and vehicle speed limit violation. This research focuses on vehicle speed estimation using image processing from video data and Euclidean distance method with many different camera angles.The first step, video data is extracted into frames and applied pre processing to extracted frames to minimize shadow effect. Then, using Gaussian Mixture Model (GMM) to extract foreground image. In the next step, the obtained foreground is filtered using median filter, shadow removing, and morphology operation. The detected vehicle object will be tracked to determine the location in each frame to estimate the speed based on its distance between frames. From the obtained results, this system is capable on estimating the speed of moving vehicle with the lowest accuracy is 87.01% and the highest accuracy is 99.38%.

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Key Words: Digital image processing, moving vehicle, speed estimation

Crime Prediction Using Machine Learning algorithms

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Abstract:

Crime Prediction Using Machine Learning" is a comprehensive project developed in Python that employs Machine Learning algorithms, specifically the Decision Tree Classifier and Bagging Classifier, to predict and classify various crime categories in Portland, Oregon, USA, from the years 2015 to 2023. The dataset utilized for this project consists of 505,063 data points, with a focus on 20 distinct crime classes, including 'Larceny Offenses,' 'Motor Vehicle Theft,' 'Assault Offenses,' 'Drug/Narcotic Offenses,' and others. The Decision Tree Classifier yielded impressive results, achieving a 98% accuracy on the training set and a 95% accuracy on the test set. Similarly, the Bagging Classifier demonstrated robust performance, achieving a 98% accuracy on the training set and maintaining a 95% accuracy on the test set. These high accuracies indicate the effectiveness of the machine learning models in predicting and classifying crimes.

The dataset encompasses 15 features, including address, case number, crime against category (Person, Property, or Society), neighborhood, occur date, occur time, offense category, offense type, open data latitude/longitude, open data X/Y, and offense count. These features provide a comprehensive and diverse set of information, enabling the models to make accurate predictions.

Key Words: Crime Prediction, Decision Tree classification

Cyber Hacking Breaches Prediction and Detection Using Machine Learning

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[1,2, 3]MJR College of Engineering and Technology, Piler, AP, India

Abstract:

Lung cancer is one of the deadly diseases whose prediction is required to reduce the death rate. So, Artificial intelligence is used on CT scan images are used for achieving better accuracy in an automated manner. Deep Learning is one of the emerging trends for predicting values. Convolution Neural Networks is one of the deep learning algorithms which implemented to sample produces better outcomes as compared to other machine learning algorithms. In this paper, the data-set has been taken with 1000 images of chest scans for different types of lung cancers such as Adenocarcinoma, Large Cell Carcinoma and Squamous Cell Carcinoma. Multiple machine learning algorithms has been compared and then it has been confirmed that CNN is one of the best among all to check the accuracy of the prediction. The paper includes VGG – 16 implemented on data set having different types of Lung Cancer and thus helping to check the severity and precautions for the same in a distinct manner.

Key Words*:* Lung cancer, Deep Learning,CNN

An Importance of Fog Computing Services for improving Internet of Things Devices performance

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Abstract:

The Information and Communication Technology are rapidly updating and upgrading day by day from fast ten years based on the improvements in communication technology usage of connected devices is increased. Around the world billions of users are using internet of thing devices are more than the billions are there based on the some recent surveys. When compare to earlier years the use of Electronics, communication and connected devices are increasing very rapidly, the devices which are connected through the Network or Internet are called Internet of things Devices. The number of users is increased for usage of IoT devices based on this the large amount of data is generated in pita bytes of data in each day. The large amount of data is need to processing and storage in cloud .the IoT Devices are needs different type's services for the processing and storage those services will be provided by the cloud. To improve the services of the cloud for increasing IoT Devices performance it needs services near by the edge devices or near to IoT Devices. To provide services near to edge devices or IoT Devices Fog Computing is introduced. Fog Computing is works based on the low latency, high Bandwidth, real time location awareness and cost effective. The applications of IoT Devices are Medical and health care, agriculture, military, Transport and home applications. Fog Computing is provides a good services near to IoT Devices in all applications. I am providing a systematic study on usage and challenges of Fog Computing for improving the performance of Internet of things Devices in different applications in daily human's life and surroundings.

Key Words: *Cloud Computing, Fog Computing, Internet of Things,* Application of IoT

Speech and Emotion Recognition in Worker Stress Analysis using

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Abstract:

Speech emotion recognition (SER) as a Machine Learning (ML) problem continues to garner a significant amount of research interest, especially in the affective computing domain. This is due to its increasing potential, algorithmic advancements, and applications in real-world scenarios. Human speech contains para-linguistic information that can be represented using quantitative features such as *pitch*, *intensity*, and *Mel-Frequency Cepstral Coefficients* (MFCC). SER is commonly achieved following three key steps: *data processing*, *feature selection/extraction*, and *classification* based on the underlying emotional features. The nature of these steps, coupled with the distinct features of human speech, underpin the use of ML methods for SER implementation. Recent research works in affective computing employed various ML methods for SER tasks; however, only a few of them capture the underlying techniques and methods that can be used to facilitate the three core steps of SER implementation.

***Key Words**:* Speech emotion recognition, Machine Learning

Crop Disease Prediction with Web Application using Deep Learning

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Abstract:

Agriculture plays a important role in every nation's economy by producing crops. Plant virus recognition is one of the most significant aspects of maintaining an agriculturally developed nation. The timely and efficient recognition of plant disease is essential for a healthy and productive agricultural sector and to prevent wasting money and other resources. Various diseases that could affect a plant cause crop farmers to lose a substantial sum yearly. Deep learning can play a crucial role in helping farmers prevent crop failure by early disease detection in plant leaves. the ResNet50 model was chosen to be developed into a smart web application for real-life crop disease prediction. The proposed web application aims to assist farmers in identifying diseases of plants by analyzing photos of the plant leaves. The proposed application uses the ResNet50 transfer learning model at its heart to distinguish healthy and infected leaves and classify the present disease type. The goal is to help farmers save resources and prevent economic loss by detecting plant diseases early and applying the appropriate treatment.

Key Words: Crop Disease Prediction, Deep Learning

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Approved by	:	All India Council for Technical Education, New Delhi
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Autonomy	:	Autonomous status from University Grants Commission (UGC), New Delhi
Affiliated to	:	Jawaharlal Nehru Technological University Hyderabad
Campus	:	Maisammaguda, Hyderabad – 500100, Telangana
Distance	:	Secunderabad - 17 km


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M2: Develop an innovative ecosystem with strong involvement and participation of students and faculty members.

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