5th International Conference on Engineering Science and Technology and Management (ICESTM-2024)

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General Chair
Dr. Gangineni Dhananjhay

Convener Chair
Dr. Akhib Khan Bahamani

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Editors
Dr. Gangineni Dhananjhay
Dr. Akhib Khan Bahamani

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The following are the different tracks in this conference:

Track 1:

Electronics and Communication Engineering

Topics of interest but are not limited to the following:

1. Nanoelectronics and microelectronics
2. Power and Applied electronics
3. Microprocessor and Microcontroller
4. Very Large Scale Integration(VLSI)
5. Micro scale fabrication
6. Electro technologies
7. High Voltage and Insulation Technologies
8. Power Electronics and Drive Systems

Track 2:

Computer Science and Engineering

Topics of interest but are not limited to the following:

1. Computer Networks.
2. Data Communications.
3. Data Encryption.
4. Data Mining.
5. Database Systems.
6. Programming Languages.
7. Image processing and Pattern recognition
8. CAD-CAM.

Track 3:

Electrical and Electronics Engineering

Topics of interest but are not limited to the following:

1. Instrumentation
2. Electric Power Generation
3. Electrical Machines and Drive Systems
4. Electromagnetic Transients Programs
5. Digital Signal Processing
6. Microprocessor based Technologies
7. Economic aspects of power quality and cost of supply
8. Reliability and continuity of supply.

Track 4:

Mechanical Engineering

1. Industrial Planning
2. Maintenance Engineering
3. Intelligent Mechatronics
4. Robotics

5. Automation, and Control Systems
6. Intelligent System
7. Fault diagnosis
8. Engines and Heat exchangers

Track 5:

Civil Engineering

1. Advanced Concrete Technology
2. Concrete Science and Technology
3. Construction Planning, Scheduling, and Control
4. Geology
5. Mechanics of Solids and Fluids
6. Monitoring of Structures & Buildings
7. Architecture and Town Planning

TRACK 6

Mathamatics

1. Probability & Statistics
2. Number Theory & Linear Algebra
3. Mathematical Modelling and Simulation
4. Graph Theory
5. Geometry Analysis and Fluid Mechanics
6. Computational Methods in Fluid Dynamics

TRACK 7

Physics and Chemistry

1. Thin Film & Characterization
2. Single Crystals & Applications
3. Semiconductor Devices
4. Polymers, Glasses & Ceramics
5. Photonic Materials
6. Graphene & Novel Materials
7. Nano Chemistry
8. Metal Alloys & Composite Structures
9. Green Chemistry
10. Electroplating
11. Catalysis
12. Biomedical Applications of Polymers

TRACK 8 :

Emerging Trends in Business & Commerce

1. Creative and Innovation in Business
2. Finance, Economics and Insurance

3. Accounting and Banking
4. Internet Banking and Marketing Management
5. Entrepreneurship and Sustainable Development
6. Supply Chain Management
7. Hospitality and Tourism Management
8. Stress Management Quality Control and Product Development
9. Environmental Protection and Disaster Management

TRACK 9:

Emerging Trends in Economics & Statistics

1. Pedagogy of Economics
2. Innovative Practices of Economic
3. Interface between Economics and Mathematics
4. Key issues in Gender Economics
5. Nature of Economics
6. Modern Technique in Statistical Methods, Qualitative & Quantitative

REGISTRATION PROCESS

- Send the paper to icestm2024@gmail.com
- After the acceptance mail received, complete the payment process.
- The registration fee is payable through crossed Demand Draft (DD) in the favour of "Principal Narayana Engineering College, Nellore", Payable at Nellore.

GUIDELINES FOR AUTHORS

- All submissions will be peer reviewed by experts in the field based on originality, significance, quality and clarity and it should be result oriented.
- All contributions must be original, should not have been published and should not be intended to be under review elsewhere during the review period.
- At least one author must register and present his/her accepted manuscript in the conference. Registration fee includes proceedings, Conference kit, Lunch, Tea& Certificate.
- Prior to submission, the paper should be checked for Plagiarism from licenced plagiarism software like Turnitin / iThenticate. The similarity content should not exceed 20% in any case (either self-contents or others).
- All the accepted manuscripts have an opportunity to be published in UGC CARE and Scopus indexed journal. Additional publication charges are applicable as per journal norms

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ABOUT NARAYANA ENGINEERING COLLEGE

Narayana Engineering College was established in the year 1998 under the chairmanship of Dr P Narayana. This is one of the most prestigious institutions sponsored by Narayana Educational Society, across India. Within a short period, the college has witnessed significant growth and established itself as one of the premier private unaided Engineering Colleges in Andhra Pradesh today and in recent times our college was ranked as 'A' Grade by the Govt. of AP. The Institute offers a 4-year B Tech Programme in six branches at UG level (EEE, ECE, CSE, EIE, ME, CE, CSE-AI, CSE-AI&ML, CSE-DS, ECE-VLSI, ECE-ACT) and seven courses at PG level (M.Tech EPE, EPS, VLSI, DSCE, CSE; MBA & MCA) with a total intake around 2500. All the Labs are well established with State-of-the Art facilities and are periodically updated with latest equipment. The Institution has got 9 well furnished Computer centres with the latest licensed software. In addition to disciplined education, the college consists of an Air-Conditioned Central Library with more than 45,000 volumes and a Digital Library with 24-hour Internet facility. A full-fledged Training and Placement Cell facilitates the aspiring professionals in acquiring corporate skills towards grabbing placements in MNCs.

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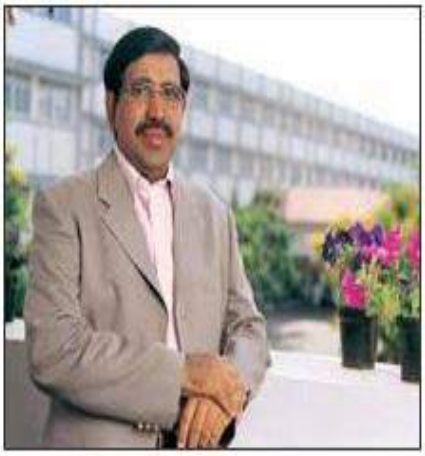
- Autonomous Institutions
- Accredited with NAAC A+ Grade in Andhra Pradesh, No.3 In India wide
- Permanent Affiliation with JNTUA, Anantapuramu
- Best Engineering College in Co-Curricular Activities
- Recognized by UGC under 2(f) & 12(B).
- Rated as College with Grade-A by Govt. of AP.
- Authorized Training Partner to NSDC, New Delhi as PMKVY-TI Center
- Authorized Nodal Centre from IIT-Bombay
- Offering consultancy services to Major Government and Private Organizations – Testing / Evaluation / Design

ABOUT THE CONFERENCE

5th International Conference on Engineering Science Technology and Management, will be held at Narayana Engineering College, Nellore, Andhra Pradesh on 24th to 25th May 2024. In this era of knowledge, the higher education institutes are not restricted just to knowledge transfer from teachers to students, but are also involved in knowledge assimilation, knowledge generation, and knowledge dissemination. The prime objective of ICESTM-2024 is to bring experts, researchers and innovators from academia, R&D and industry in the related fields together and provide them a forum for knowing what is happening in the research arena, identify and conceptualize new ideas and sharing their valuable findings and thoughts. The conference also aims to create research interest in the minds of young graduates to pursue research as their career. ICESTM-2024 will facilitate and promote interdisciplinary research among researchers and help in reducing the gaps between different disciplines.

Message from founder



This is a matter of enormous pride that Narayana Engineering College, Nellore is conducting a 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024. Research being the indispensable tradition of any reputed academic institution. I am glad to announce NECN embarked up on important task of engaging in research culture as part of our academic responsibilities and bring out the knowledge to the world. This conference would provide a forum for interaction between scientists at R&D, Academicians at Universities and technocrats at industry level to sharpen their skills and bridge the gaps in application of technology.

I congratulate and take this opportunity to convey my best wishes to the organizers and participants and wish the event a grand success.

Dr. P. Narayana
Founder, Narayana Group of Educational Institution

Message from Chairmen

I am very glad that Narayana Engineering College, Nellore is organizing 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024. Its great pleasure in welcoming academicians, research scholars and other participants in the 2-day international conference.

The ICESTM-2024 will provide a platform for academicians, researchers and other participants to interact each other and future collaborations. It is also a golden opportunity to the students of this institution to enhance their knowledge.

I wish the conference a grand success and congratulate the organizers for the fruitful effort.

Sri.Puneeth
Chairmen, Narayana Group of Educational Institution

Message from Registrar

It gives me enormous pleasure and privilege to welcome you to the 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024 organizing by Narayana Engineering College, Nellore. This conference would be able to address the challenges face by the researcher's professionals and student to share the innovative ideas, recent trends and future directions in the field of Engineering, Science and Technology.

I expect that this conference will pen novel windows in the thriving areas of innovative problem domains and interaction of scholars and intellectuals at this conference will definitely yields new solutions to untapped ideas in Engineering, Science and Technology.

Sri R Samba Siva Rao

Registrar, Narayana Group of Educational Institution

Message from Director

It gives me an enormous pleasure in penning down this foreword for the proceedings of 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024 organizing by Narayana Engineering College, Nellore**.** The actual definition of an engineer is "term applied to the profession in which knowledge of the mathematical and natural sciences, gained by study, experience, and practice is applied to the efficient use of materials and forces of nature".

Research is the embellishment of this innovation and I am glad to announce that NECN embarked upon important task of engaging in research culture as part of our academic responsibilities and bring in the knowledge to the world. This conference would provide a forum for interaction between scientist at R&D organizations, Academician Universities and technocrats at industry to sharpen their skills and bridge the gaps in the application of technology.

I take this opportunity to convey my best wishes to the participants and wish the event a grand success.

Dr. B. Dattatraya Sarma
Director, Narayana Group of Educational Institution

Message from Principal, NEC::Nellore

It is indeed hearting to know that Narayana Engineering College, Nellore is organizing the 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024. Aiming at providing a good platform for meeting researcher's academicians and industrial experts to interact. When global interdependence and competition are up on us, we must offer quality education and training to our youngster to keep up and keep face with the best and the brightest in the world. With this view in mind Narayana Engineering College has the tradition of offering the best possible technical education. It is really inspiring to know that over a span of two decades Narayana Engineering College has become one of the premier engineering college not only in the state but also in India. But the path towards excellence is never ending. Therefore, our collective efforts should be directed towards all round improvement of Narayana Engineering College in all frontiers of modern technical education. We should also see that the technologies advances and research output should be beneficial to all human beings and to the society.

I convey my blessings and good wishes to one and all members of Narayana Engineering College. I also congratulate the members of organizing committee of ICESTM 2024.

Dr. G. Srinivasulu Reddy
Principal, Narayan Engineering College, Nellore

Message from the General chair- ICESTM 2024, NEC::Nellore

Dear Participant, it is a great pleasure for me to welcome all the delegates to the 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024. Here in Narayana Engineering College, Nellore. It is routine practice in our college in conducting various activities like workshops, symposiums, seminars, conferences etc. to develop overall performance in students.

On behalf of the organizing committee, we are pleased to welcome you all to ICESTM-2024. We extend our heartiest greetings to all delegates, experts from industry and academia to the 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024. It gives us real honour and privilege to serve as the General Chair for this conference.

I look forward to welcoming all of you at ICESTM-2024

Dr. Gangineni Dhananjhay
Professor & Dean,
General Chair-ICESTM-2024

Message from the Convener chair- ICESTM 2024, NEC: Nellore

Dear Professors and Researchers

It is my privilege and honor to welcome you all to the 5th International Conference on Engineering Science Technology and Management at Narayana Engineering College, Nellore from 24th to 25th May 2024. The main goal of organizing this conference is to share and enhance the knowledge of each and every individual in this fast-moving Information Era. We have given a good opportunity for those who have a thirst in knowing the present technological developments and also share their ideas. Additionally, this conference will also facilitate the participants to expose and share various novel ideas. The conference aims to bridge the researchers working in academia and other professionals through research presentations and keynote addresses in current technological trends. i.e. on Industry. It reflects the growing importance of Intelligent Computing systems as a field of research and practice for contribution and better opportunities in industry. You will get ample opportunities to widen your knowledge and network. Outside of the conference, I hope that you will enjoy some of the many attractions found in and around our beautiful campus at Narayana Engineering College Nellore.

I want to thank in advance the conference committee for extending their valuable time in organizing the program and all the authors, reviewers, and other contributors for their sparkling efforts and their belief in the excellence of ICESTM-2024.

I cordially invite all the enthusiasts to participate with full vigor in this celebrated event which can give immense exposure and global opportunities to all.

Dr. Akhib Khan Bahamani
Convener-ICESTM-2024

Message from HOD, Electrical and Electronics Engineering, NEC: Nellore

It gives me an immense happiness that Narayana Engineering College, Nellore is conducting 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024.

I am confident that this conference will bring opportunities among the academicians, corporate delegates, and research scholars to present their innovative ideas, most up to date findings and technical proficiency in the various fields of research trends in Engineering Science and technology.

I welcome all the academicians and researchers to the conference and assure that it would be a great experience and wish the conference all the success.

Dr. G. Venkateswarlu
HOD EEE, Narayana Engineering College, Nellore

Message from HOD, Computer Science and Engineering, NEC: Nellore

I am honoured to serve as the coordinator for the 5th International Conference on Engineering Science, Technology, and Management, scheduled to be held from May 24th to 25th, 2024, at Narayana Engineering College, Nellore. I extend my heartfelt congratulations to all participants who have submitted their papers for this esteemed conference. I trust that the keynote addresses and presentations will provide valuable insights and stimulate fruitful discussions.

Dr. C. Rajendra
HOD, CSE, Narayana Engineering College, Nellore

Message from HOD Electronics and Communication Engineering, NEC::Nellore

In any Engineering College, it is customary to conduct extracurricular activities like both technical and cultural activities. As a conference chair of this conference, I would be grateful in organizing such an important event 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024 organizing by Narayana Engineering College, Nellore**.** I congratulate all the participant and wish you all the best.

Dr. K. Murali

HOD, ECE, Narayana Engineering College, Nellore

Message from HOD Civil Engineering, NEC::Nellore

This 5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024 organizing by Narayana Engineering College, Nellore is an attempt to focus the attention of all concerned professionals to discuss at length concerned with the Emerging trends in engineering& technology, to seek solutions wherever possible and identify areas where further research is needed.

Information provided in various papers are reproduced in the proceedings is aimed at benefiting the Engineers and professionals. It is expected that the purpose would be served in a satisfactory manner through in-depth discussion and interaction among participants during the conference. I take this opportunity to record my heartfelt appreciation and gratitude to all the authors, delegates, conference chairman and all others participating.

Prof. K. Venkatalakshmi
HOD, CE, Narayana Engineering College, Nellore

Message from HOD Mechanical Engineering, NEC::Nellore

5th International Conference on Engineering Science Technology and Management from 24th to 25th May 2024 organizing by Narayana Engineering College, Nellore to provide an opportunity to research scholars, delegates and students to interact and share their experience and knowledge in technology application. ICESTM -2024 will provide an excellent international forum for sharing knowledge and results in Recent Challenges in Engineering Technology. The aim of the Conference is to provide a platform to the researchers and practitioners from both academia as well as industry to meet and share cutting-edge development in the field. I congratulate all the participant and wish you all the best.

Dr.A.V.S. Sridhar Kumar
HOD, ME, Narayana Engineering College, Nellore

CONTENT

(ISBN Number: 978-81-972224-8-1)

ADVANCED POWER MANAGEMENT STRATEGIES FOR DUAL EXCITED SYNCHRONOUS GENERATORS IN WIND TURBINES

Mrs. S. Suneetha, M. Tech, A. Santhosh Reddy, G. Srikanth, CH. Jagadeesh, K. Manojkumar
UG Scholars, Narayana Engineering College, Nellore, Andhra Pradesh, India

ABSTRACT

This paper introduces the dual excited synchronous generator (DESG) as a promising technology for wind energy conversion systems. A novel control strategy is proposed to optimize DESG operation, enabling it to function either as a constant-speed constant-frequency (CSCF) generator with adaptable reactive power or as a variable-speed constant-frequency (VSCF) system with simplified control methodologies and reduced copper losses. Utilizing the space phasor model, the relationship between electromechanical torque and armature reactive power is established based on the magnitude of the field current space phasor and the phase angle of the field voltage space phasor. The proposed control approach employs an Adaptive Neuro-Fuzzy Inference System (ANFIS) to regulate active and reactive powers. Simulation results conducted in MATLAB/SIMULINK for a 1.1 kW DESG wind turbine system validate the efficacy of the proposed control strategy under diverse operating conditions. Experimental studies further substantiate the simulation outcomes, demonstrating the practical application of the developed control algorithm.

Keywords: Wind power generation system, dual-excitation synchronous generator, VAR control, peak power tracking.

GRID-CONNECTED PV AND DFIG WIND TURBINE POWER QUALITY IMPROVEMENT WITH QBC FED TRANS ZSI-UPFC

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ABSTRACT

UPFC is a popular device to improve voltage of weak buses in multi bus system. This work deals with modelling and simulation of open loop and closed loop controlled quadratic boost converter boost converter with TZSI based UPFC in wind, PV and battery system. Various issues such as voltage sag/ harmonics and distortion degrade the power quality and leads to system failure. For the sensitive power user, the voltage sag has been one of the most serious power quality problem of Closed loop PI and FOPID controlled based UPFC systems are investigated and their results are compared. This work deals with modelling and simulation of closed loop controlled Three Phase voltage Trans Z-source inverter based UPFC in two bus system. This paper presents the MATLAB simulation model of a UPFC with FOPID controller as a voltage sag mitigation device in electrical power distribution networks. The comparison is done in term of time domain response parameters like steady state error & settling time. The UPFC with FOPID is observed to be faster than PI controlled system.

Keywords: Wind power generation system, Quadratic Boost Converter, Photovoltaic system

(ISBN Number: 978-81-972224-8-1)

ENHANCEMENT OF RAILWAY GRID STABILITY WITH THE USE OF SUPERCAPACITORS

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ABSTRACT
This paper investigates the control and management of railway systems connected to microgrid stations, aiming to enhance grid stability and reduce the load on the main power grid during peak commuting hours. The system utilizes renewable energy sources, such as photovoltaic panels and wind turbines, to generate the required voltage and current. Energy storage systems, including batteries and supercapacitors (SCs), are implemented to store excess power and provide rapid discharge during train acceleration, acting as energy buffers. The proposed Energy Management System (EMS) employs Proportional-Integral (PI) controllers to stabilize the DC bus voltage in both station and train configurations. The EMS effectively maintains stable voltage levels and meets the energy demands of the trains, even when recharging at different times. By supporting the grid during peak hours and acting as energy buffers, the EMS reduces the risk of overloading the grid when multiple trains accelerate simultaneously. This approach ensures a more stable and resilient energy system, optimizing the performance of railway systems connected to microgrid stations and enhancing overall grid stability.

Keywords: Energy management, railway system control, energy storage system, Super capacitors, PI Controller

DESIGN AND IMPLEMENTATION OF 4 PHASE INTERLEAVED BOOST CONVERTER

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ABSTRACT
A boost converter is a type of DC-DC power converter that steps up (increases) the input voltage to a higher output voltage while maintaining the same polarity. It operates on the principle of energy storage in an inductor during the switch-on phase and energy transfer to the load during the switch-off phase. Boost converters are widely used in applications such as power supplies for electronic devices, renewable energy systems, and automotive systems, where efficient voltage step-up is required. A 4-phase interleaved boost converter is an advanced DC-DC power converter that uses four boost converter circuits operating in parallel with staggered switching phases. Each phase is shifted by 90 degrees relative to the others, ensuring that the current pulses are evenly distributed over time. This interleaving technique significantly reduces both the input and output current ripples, leading to lower electromagnetic interference (EMI) and improved efficiency.

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IMPROVING GRID STABILITY AND POWER QUALITY IN PV-BASED ELECTRIC VEHICLE CHARGING SYSTEMS

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ABSTRACT

This paper investigates techniques for enhancing power quality in a photovoltaic (PV) based electric vehicle (EV) charging station interfaced with a three-phase grid. The integration of renewable energy sources like PV into EV charging infrastructure necessitates effective power quality management to ensure stable and reliable operation. This study proposes a hybrid methodology that combines a Radial Basis Function Neural Network (RBFNN) with a Proportional-Integral (PI) controller to predict optimal gain parameters for the PI controller based on variations in grid-side parameters. The results demonstrate significant improvements in power quality maintenance compared to conventional techniques, such as fixed-gain PI control or ANNPI control. The findings of this research contribute to advancing power quality management in PV based EV charging stations, thereby enhancing their reliability and performance in diverse grid conditions.

Keywords: Power quality improvement, PV-based EV charging station, Three-phase grid, Hybrid technique, RBFNN, PI controller, Simulation, Comparative analysis.

EXPERIMENTAL STUDY ON MECHANICAL PROPERTIES FOR M25 GRADE OF CONCRETE ADDING SILICAFUME AND RECYCLED COARSE AGGREGATES ASPARTIAL REPLACEMENT OF CEMENTAND COARSE AGGREGATE

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ABSTRACT

This project reports the results of an experimental study on mechanical properties for M25 grade of concrete adding silica fume and recycled coarse aggregate as partial replacement of cement and coarse aggregate. The use of recycled coarse aggregates in fresh concrete as a replacement for natural coarse aggregates has gained significant attention in recent years due to the potential environmental and economic benefits. The process started with the collection of raw materials for the preparation of concrete, according to the mentioned quantities that have obtained from concrete mix design. Various tests were conducted on the raw materials such as Fineness, Specific gravity, Normal consistency, Initial and final setting time of cement, Sieve analysis, Specific gravity of Fine aggregate, Sieve analysis of Coarse aggregate. The mixes were created using a combination of silica fume and recycled coarse aggregate in varying amounts, and tests were performed. The test results were recorded and shown on a bar graph. According to the experimental study we conclude that silica fume improves the mechanical properties of concrete and ability to fill the spaces between cement particles. As a result, incorporating RCA and silica fume into concrete manufacturing has the potential to improve concrete's sustainability and performance.

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STUDY ON EXTERIOR & INTERIOR 3D DESIGN OF RESIDENTIAL BUILDING BY USING SKETCH UPSOFTWARE

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ABSTRACT

Digital design software is crucial in the modern architecture sector. Clients expect to see more than concept drawings, blueprints, and physical models. They want to see virtual representations that offer more detail. With 3D modelling, you can design interiors and populate your buildings. With some, you can even adjust lighting effects and account for how external forces will affect a building. Beyond this, design software automates common processes. This allows you to save time. You can get designs to clients quicker and enjoy a more efficient work flow. Still, you won't experience these benefits if you choose the wrong software. Your choice must suit your needs and be suitable for your work setup. Each piece of software has something different to offer. There are various software's for designing elevation among them many architects favour Sketch Up because of its real-world applications. You can create simple 3D models quickly. This study presents about the Exterior and Interior Design Of Residential Building by using Sketch up Software and execution of it on site. It helps us to explore our ideology & skills on appropriate spectacular 3D elevation for Residential Building. This project determines the complete process from designing aesthetic appear ance using Sketch up Software to site execution.

COMPARISON STUDY OF ANALYSIS AND DESIGN OF STRUCTURAL ELEMENT BY USING STAAD PRO

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ABSTRACT

One of the major problems facing by the INDIAN country is rapid growth of population which restricted the availability of the land. Moreover, even the available houses are let out at abnormal rent charges. Hence an apartment building is proposed in this project. As per we know the strength of the building or apartment is fully depends upon the structures. For knowing about the structures, we should undergo on site investigation. This project we are going to study about the structural elements, on ongoing construction of G+3 Building located at SanthaPeta, Nellore-524004. The analysis of structural element was done by using the software analysing as well as IS-456:2000CODE of practice for reinforced cement concrete. Subsequently we are going to consider one outer column for design by using STAAD pro software and comparing of reinforcement details which is provided at site. After having design, the result & conclusion were made in this project. The project is to develop independent and creative thinking fundamental, theoretical knowledge. We obtain during the course of the study practical application of field. So that, we have the ability to learn about the design, on site construction of structures.

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STUDY ON EXTERIOR & INTERIOR 3D DESIGN OF RESIDENTIAL BUILDING BY USING SKETCH UPSOFTWARE

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ABSTRACT

Digital design software is crucial in the modern architecture sector. Clients expect to see more than concept drawings, blueprints, and physical models. They want to see virtual representations that offer more detail. With 3D modelling, you can design interiors and populate your buildings. With some, you can even adjust lighting effects and account for how external forces will affect a building. Beyond this, design software automates common processes. This allows you to save time. You can get designs to clients quicker and enjoy a more efficient work flow. Still, you won't experience these benefits if you choose the wrong software. Your choice must suit your needs and be suitable for your work setup. Each piece of software has something different to offer. There are various software's for designing elevation among them many architects favour Sketch Up because of its real-world applications. You can create simple 3D models quickly. This study presents about the Exterior and Interior Design Of Residential Building by using Sketch up Software and execution of it on site. It helps us to explore our ideology & skills on appropriate spectacular 3D elevation for Residential Building. This project determines the complete process from designing a aesthetic appearance using Sketch up Software to site execution.

STUDY ON CRITICAL PATH METHOD OF ANALYSIS & SCHEDULING FOR RESIDENTIAL BUILDING BY USING PRIMAVERA SOFTWARE

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ABSTRACT

In every project time and cost are controlling factors. If we can control the time then we can optimize the cost of project. To control time required for the project in a particular activity, we need to use critical path method (CPM). So that we can know about activity is delayed or not. If it is delayed, we need more resource than required. In this project we are using PRIMAVERA P6 to find the critical path of each and every activity. So, to rectify this we need to take care of the time factor, so we proposed this project. In this project we will write down the each and every task duration to know about the critical path method (CPM). We are visually representing activity sequences of a project in the form of network diagrams, in this process we are using deterministic approach. To find the critical path we need to analyse the scheduling and we need to follow some steps. This process will depends upon different types of floats required to calculate the critical path and also we need check for slack of an activity. critical path method is associated with activity oriented. It is used for repetitive projects (based on past experience). We are analysing and scheduling for G+10 stored residential building by PRIMAVERAP6 software near , which is constructed by the main infra private limited.

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ENHANCED ENERGY OPTIMIZATION SYSTEM OF EV BICYCLE

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ABSTRACT

In India, the demand for electric motor bicycles is rising since they use less energy, produce less noise, and require less maintenance. The goal of this research project is to create a basic, affordable electric motor model. A bicycle equipped with an intelligent controller. The motor, battery, and controller are the three components of the electric motor bicycle. This unique wheel's rim holds a fixed BLDC motor. To regulate the motor's speed and current, the controller is connected to the battery and motor. The electric motor bicycle can be powered by pedaling or by a battery charge. The simulation results were produced by ELECTRIC BIKE SIMULATOR. The hardware assembly kit also displays the experiment findings.

Keywords: EV Bicycle, Electric Motor, Battery, BLDC Motor, and Electric Bike Simulator

MECHANICAL DESIGN OF AN ELECTRIC CYCLE

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ABSTRACT

Now-a-days there are so many vehicles on road, which consumes more fuel and also hazards our environment. It is our responsibility to reduce the consumption of fuel and its hazardous emission products. Taking this into consideration it is our small step towards reducing the use of more fuel consuming vehicles and attract the eye of people towards its alternatives i.e. Electric Cycle. So we intend to design a cycle which would run on an alternative source and also reducing human efforts called as Battery Operated Cycle. In this paper we design an alternative mode of transport for betterment of social and environment. Electric cycles use rechargeable batteries and the lighter varieties can travel up to 25 to 32 km. Batteries used in this vehicle are lithium-ion batteries. The mechanical design of a two-wheeler electric vehicle (EV) encompasses a multidisciplinary approach to create a vehicle that balances performance, efficiency, safety, and cost- effectiveness. This paper outlines the key considerations in designing such a vehicle, including frame or frame, motor, drive train, battery, braking system, controls and instrumentation, safety features, ergonomics, materials, and manufacturing processes. The goal is to develop a study yet lightweight frame, an aerodynamically optimized frame, an efficient electric motor and drive train, an appropriate battery pack for range and durability, user-friendly controls and instrumentation, comprehensive safety features, comfortable ergonomics, and the selection of suitable materials and manufacturing methods.

Keywords: Electric Cycle, Mechanical Design, Frame Design, Handlebar Design, Electric Braking System, CAD Software.

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BATTERY CONFIGURATION OF ELECTRIC TWO-WHEELER

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ABSTRACT

BMS is important for the battery performance and long Gevity, it controls the power from and to the battery and it monitors the state-of-charge (SOC), state-of-health (SOH), and it ensures safety of the user by charging and discharge in go the battery properly and safely. BMS also includes thermal management which governs the operating temperature soft the battery and makes sure that the temperature of the battery does not exceed the limits, it also manages cell balancing which balances the individual cell voltage of the battery pack, it estimates the battery life and the charge left in the battery accurately. In this project we use MATLAB to simulate the BMS and the battery pack used for the EV this includes physics-based models, equivalent circuit models (ECMs), electrochemical models and data driven models Each approach offers unique insights into battery behaviour and enables the optimization of BMS algorithms for enhanced performance. As BMS technologies progress in sophistication and interconnectedness, the pivotal factors of safety and security will assume an ever more conspicuous role in their conception and function. This multifaceted challenge necessitates continual research and the collaborative synergy of scientists, engineers, policymakers, and industry participants. Through the combined endeavours of these stakeholders, we can ascertain that forthcoming BMS technologies not only furnish enhanced performance and capabilities but also uphold the elevated safety and security benchmarks anticipated by users and society as a whole.

MECHANICAL DESIGN OF TWO-WHEELER EV

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ABSTRACT

The mechanical design of an electric two-wheeler encompasses a vehicle that is multidisciplinary in nature to balance performance, efficiency, safety and cost. This paper presents the important points on the design of such vehicles which includes chassis, frame, and suspension; motor, drivetrain; battery; braking system; controls and instrumentation; safety features; ergonomics; materials and manufacturing processes. The aim here is to have engineers from different fields working together in order to come up with a light yet study chassis, a frame optimized for aerodynamics, a reliable suspension system, an efficient electrical engine as well as power transmission mechanism consisting of battery pack suitable for range or durability purposes, regenerative braking capability capable of supporting user-friendly control panel plus gauges along with numerous save ergonomic criterion under a comprehensive material selection and production requirements. Through these considerations the idea is to develop an EV designed for two-wheelers that addresses issues related to sustainable urban mobility.

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MODELLING OF ELECTRIC TWO-WHEELER EV

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ABSTRACT

Designing a two-wheeler electric vehicle (EV) involves a comprehensive approach to balancing performance, efficiency, and user experience. The design process begins with market research to understand target audience needs and competitive landscape, followed by conceptual design which includes initial sketches and 3D models. Key mechanical components such as the chassis, suspension, and wheels are designed for lightweight strength and stability. Electrical systems, including the battery pack, motor, and controller, are chosen to ensure optimal power delivery and efficiency. Thermal management is crucial, with passive or active cooling systems for the motor and battery to prevent overheating. Prototyping and rigorous testing validate design assumptions and performance, leading to iterative improvements. Compliance with regulatory standards is essential for safety and certification. In the manufacturing phase, a detailed plan ensures consistent production quality, and quality control measures are implemented. Post-production, providing comprehensive user manuals, maintenance guides, and robust customer support is vital for user satisfaction. Sustainability is also a key consideration, with design efforts focused on recyclability, energy efficiency, and potential integration of renewable energy options. This holistic approach ensures the creation of a reliable, efficient, and user-friendly two-wheeler EV.

STUDY OF INTERLEAVED BOOST CONVERTER

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ABSTRACT

A boost converter is a type of DC-DC power converter that steps up (increases) the input voltage to a higher output voltage while maintaining the same polarity. It operates on the principle of energy storage in an inductor during the switch-on phase and energy transfer to the load during the switch-off phase. The key components of a boost converter include an inductor, a switch (typically a transistor), a diode, and a capacitor. A 4-phase interleaved boost converter is an advanced DC-DC power converter that uses four boost converter circuits operating in parallel with staggered switching phases. Each phase is shifted by 90 degrees relative to the others, ensuring that the current pulses are evenly distributed over time. This interleaving technique significantly reduces both the input and output current ripples, leading to lower electromagnetic interference (EMI) and improved efficiency.

Keywords– Boost converter, Interleaving technique, Current sharing, Parallel operation, Switching frequency, Component stress reduction, passive components

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PHASE SHIFTED FULL BRIDGE CONVERTER FOR BATTERY SYSTEMS WITH PARTIAL POWER PROCESSING

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ABSTRACT

Due to increased CO2 emissions from the transport section sector, day-by-day demand for Electric vehicles is increasing. The problem associated with EVs is the battery due to their weight and charging time. The prolonged charging time of batteries leads to driving anxiety. To reduce the charging time, there is a need to implement fast charging methods. In this work, a partial power processing system is implemented employing a PSFB converter for battery charging applications, in which a fraction (20-35%) of the power is supplied by the converter, and the remaining amount of power is supplied through a direct path which lossless. By developing a partial power processing system, the efficiency of the system will increase, and the size of the system will be reduced. The suggested system undergoes mathematical analysis, is put into practice, and is verified using the MATLAB Simulink environment.In summary, since the converter will only be processing a small quantity of electricity, there will be fewer losses and an overall boost in system efficiency.

Keywords: Partial Power Processing Systems, Phase shifted Converter, Battery, State of Charge, MATLAB/SIMULINK, &, Electric Vehicle.

POWER QUALITY ENHANCEMENT USING PHOTOVOLTAIC SYSTEM DRIVEN UNIVERSAL ACTIVE FILTER

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ABSTRACT

This work proposes a unique method for controlling the universal active power filter integrated with PV array system (UAPF-PV) using a proportional resonant controller and a second order sequence filter. The active component of the distorted load current is estimated using a second order sequence filter, and this value is then used to generate a reference signal for a shunt active filter at the instant of zero crossing of the load voltage. With fewer mathematical calculations, the suggested method extracts the essential active component of distorted and unbalanced load currents with good accuracy. In addition to enhancing power quality, the system produces clean energy thanks to the PV array system that is built into its DC-bus. The benefits of distributed generation and power quality improvement are combined in the UAPF-PV system. MATLAB/Simulink is used to analyse the system performance under a range of disturbance scenarios, including changes in solar irradiation, load unbalancing, and PCC voltage rise and fall.

Keywords: power quality, universal active power filter, adaptive filtering, photovoltaic system, maximum power point tracking, sequence filter.

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FUZZY LOGIC BASED LOAD FREQUENCY CONTROL IN MULTI-AREA POWER SYSTEM

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ABSTRACT
This paper focuses on the challenge of load frequency control (LFC) in power systems, which is essential for maintaining a safe and reliable power supply. LFC helps to balance power generation and load demand, thereby stabilizing system frequency. The project investigates the design and implementation of various controllers to achieve a faster and more effective LFC response. Specifically, it evaluates the performance of conventional Proportional-Integral-Derivative (PID) controllers and fuzzy logic controllers (FLC) in multi-area power systems. Power systems, as the foundation of electrical distribution, are inherently interconnected, forming larger multi-area systems from various single areas. These systems frequently encounter disturbances such as load changes, short circuits, and open circuits, leading to deviations in system frequency. These frequency changes can adversely impact electrical equipment, causing malfunctions and system-wide inefficiencies. Therefore, it is critical to swiftly mitigate frequency deviations following disturbances. Through simulation and analysis, the effectiveness of these controllers in stabilizing the system post-disturbance is demonstrated. The study presents comparative results, highlighting the strengths and weaknesses of each controller type, culminating in a conclusive evaluation of their performance.

INVENTORY ANALYZER ANDROID APPLICATION

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ABSTRACT
The Inventory Analyzer displays a cutting-edge Android app focused on revolutionizing inventory management. It aims at suppliers, dealers, and users to tackle the shortcomings of traditional systems, such as inaccuracies and lack of updated data. By using Java and Kotlin during development and incorporating an SQL database for backend storage, the Inventory Analyzer ensures strong performance and scalability. It is split into modules to meet specific user requirements: suppliers can add and supervise dealers, products, and orders; dealers can modify product prices, review user requests, and track their sales history; users can search for dealers by location, request products, check past order records, and provide feedback.A key feature of the Inventory Analyzer is its real-time data processing system that guarantees all users access to the most current information. In conclusion, & the Inventory Analyzer offers a significant advancement from traditional inventory systems by providing a modern, & efficient, & scalable solution that streamlines inventory operations& boosts overall business efficiency& enhances user satisfaction significantly.

Keywords: Inventory management, Android app, Real-time data, Java, Kotlin, SQL database, Suppliers, Dealers, User interface, Testing methods.

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APARTMENT MAINTENANCE APP

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ABSTRACT

The mobile application for apartment maintenance is an android mobile application that aims to enhance communication between tenants/owners and admin in the communities and to make it easier to provide security and giving access to visitors for entering into communities. This application proposes a convenient platform to handle tasks such as management of maintenance charge bills, interactions, issues report and visitor access for tenants/owners and also it proposes a convenient platform to generate charges, schedule reminder for community meetings, events and manage visitor access history for admin. This application involves generation of maintenance bills and includes directory of handyman service providers so that tenants/owners can contact if there are any needs for handyman services. Tenants/owners can also easily report issues through the complaints feature in this application. Moreover, the application consists of a gatekeeper function to manage visitor access effectively. This feature enhances security and facilitates smooth visitor management within the community. It also facilitates communication among community by scheduling meetings, announcements and events. The success of this approach holds significant implications for various communities which require simple management of these tasks and thus saving their valuable time. Overall, this project makes life simpler for tenants/owners and helps managing the community better and it uses technology to improve how things should be done and improve overall living experiences.

Keywords: Mobile Application, Android, Community Apartment, Gated Community, Gate Pass, Interaction, Visitor Access Management.

VET WELLNESS: YOUR DIGITAL VET CLINIC APP

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ABSTRACT

This project “Vet Wellness: Your Digital Vet Clinic App” is an application which is simple and easy to use for getting online prescription from veterinary doctor. This application is useful for people for virtual consultation and getting suggestion. The proposed application provide system which is useful for layman. This android application which is useful for both doctor and users. Pet owner has to send his animal’s signs and symptoms. The doctor will receive the pet owner’s requests and responds. The user’s data will be automatically added to the database. This application is particularly beneficial for individuals residing in remote areas, offering a convenient platform for virtual consultations and getting suggestions. The main cause for the development of this app is pet owners, may face challenges accessing veterinary care due to limited no of clinics. The need for physical visits can be inconvenient for pet owners, especially those with busy schedules or mobility issues. For this, we are developing an android application known as: “Vet Wellness: Your Digital Vet Clinic App”. The primary motivation behind developing this app is to address the challenges pet owners face in accessing veterinary care. The limited number of clinics often makes it difficult for pet owners to secure timely appointments. Additionally, the necessity of physical visits can be particularly inconvenient for those with busy schedules or mobility issues. By offering a more accessible and convenient solution, the app aims to alleviate these difficulties. Pet owners can now receive expert veterinary advice and care without the need to visit a clinic, thereby saving time and reducing the stress associated with travel and waiting times. This innovative approach is designed to ensure that pets receive the care they need, regardless of their owner’s circumstances.

Keywords: Vet Wellness, Online prescription, Digital Vet Clinic, Virtual consultation, Expert veterinary advice, Pet care.

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ICECREAM PARLOURANDROID APP

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ABSTRACT

The "Mobile App for Ice Cream Shops" is designed to make things better for both ice cream lovers and shop owners. This cool app makes it easy for customers to interact with the shop and helps owners manage their daily tasks smoothly. For customers, using the app is super easy! Start by signing up with your phone number, confirm your identity with a one-time password (OTP), and create a secure password for future logins. Once you're in, you can enter your personal details and address to make ordering faster. The homepage is colorful and dynamic, showing different types of ice cream and treats. Browse around, pick your favorites, and add them to your cart. After placing an order, you'll get a discount coupon for your next purchase to keep you coming back for more delicious scoops! You can also track your order status in real-time, so you always know when your ice cream will arrive. For shop owners, the app includes a powerful admin panel. Managers can receive and manage orders, update order statuses smoothly, and keep an eye on user engagement and sales through an easy-to-use dashboard. They can also add new products and send notifications to users about promotions, updates, or new treats available.

Key Words: Mobile application, Android, Product Display, Order History, Coupon Management, Profile Management, User Engagement.

MOBILEMINDER: LOCATION BASED REMINDER APPLICATION

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ABSTRACT

In the domain of personal productivity, individuals often face challenges in managing schedules and tasks efficiently. Conventional reminder systems exhibit significant limitations, including restricted customization options, poor integration with other applications, and cumbersome user interfaces. These deficiencies result in inefficiencies and missed appointments, leading to user frustration. The primary issue is the inability of existing systems to deliver context-sensitive reminders that adapt to the user's location and real-time circumstances, resulting in a lack of timely alerts that align with actual needs. This paper presents "MobiMinder," an innovative Android application that addresses these issues by enabling users to create reminders based on location as well as time, providing automatic notifications as users approach tagged locations. Leveraging Google Maps, Foursquare, and Android device sensors, MobiMinder offers a comprehensive suite of features, including location tagging, time-based filtering, and automatic alerts. This application aims to enhance productivity by empowering users to better manage their time and tasks, ensuring they never miss important events or appointments. MobiMinder represents a modern solution for personal time management in today's fast-paced digital world.

Keywords: Mobile application, Location-based reminders, Productivity enhancement, Task management, Appointment notifications, Google Maps integration, Precise location tagging, User experience, Customizable notifications.

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FARMERS BUDDY: BRIDGING THE GAP BETWEEN FARMERS AND CONSUMERS

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ABSTRACT

Farmers often struggle to sell their produce at fair prices due to limited market access, which forces them to rely on middlemen. These intermediaries take substantial profits, leaving farmers with minimal returns and sometimes even losses. Meanwhile, consumers face challenges in finding quality produce at reasonable prices because of the markup added by these middlemen. The fundamental issue lies in the lack of direct, real-time communication between farmers and consumers. To address this problem, we are developing "Farmers Buddy: A Farmers Online Selling Application," designed to connect farmers directly with consumers and eliminate the need for middlemen. This app will enable farmers to sell their produce directly to consumers, ensuring better profits for themselves while providing consumers with high-quality products at fair prices. By establishing a direct connection between farmers and consumers, "Farmers Buddy" aims to resolve the challenges both parties face, fostering a more equitable and transparent market.

KEY WORDS; Farmers Buddy, Direct Order, Order History, Request Handling, Profile Management, direct selling, agricultural sector, market access, middlemen.

ADAPTIVE SCHEDULE GENERATOR

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ABSTRACT

A college schedule is a chronological plan consisting of a series of lectures and classrooms where all requirements are met. Making these schedules by hand is a difficult and time-consuming procedure. Using a computer-assisted timetable generator to automate this process can saving administrators who are in charge of developing and overseeing course schedules a significant amount of valuable time. As a result, we have created a workable method for creating lecture-course scheduling systems that can be tailored to solve every college's scheduling issue. In an automated timetabling system, this study presents a workable timetabling algorithm that can handle both strong and weak limitations. The Adaptive Schedule Generator is an innovative software solution designed to create and manage dynamic schedules in various organizational contexts, including educational institutions, corporate environments, and healthcare facilities. Leveraging advanced algorithms and machine learning techniques, the system automatically adapts to changing conditions and requirements, ensuring optimal allocation of resources such as time, personnel, and facilities. This solution addresses the complexities of scheduling by considering multiple variables, including availability, preferences, and constraints, while providing real-time updates and flexibility for manual adjustments.

KEYWORDS: Genetic Algorithm, Automated Timetable, Soft and Hard Constraints.

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TEST HALL ARRANGEMENT SOFTWARE

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ABSTRACT

This project Test Hall Arrangement Software aims to organize the seating of students in an Examination hall efficiently, ensuring fair distribution and minimizing the chances of cheating. Traditional manual methods of seating arrangement often result in errors and in consistencies due to human over sight and lack of systematic allocation. This system proposes an automated Test Hall Arrangement Software based on advanced database management and optimization methods. The goal is to allocate rooms to students and faculty efficiently and systematically, minimizing errors and human oversight. This ensures a fair and unbiased distribution of students, enhancing the integrity of the examination process by reducing the chances of cheating. The proposed Test Hall Arrangement Software involves several key steps to achieve efficient and fair room allocation. Initially, student and exam halls data are collected and stored in a central database. An optimization technique is then applied to the data to generate an initial seating plan, considering factors such as student identification, room capacity, and seating capacity. Finally, the optimized seating plan is generated and distributed to the relevant stakeholders, ensuring a well-organized and fair examination Environment.

Keywords: database management, room allocation, room capacity, examination, arrangement software, integrity, distribution

ENHANCING PERFORMANCE: NECN'S EMPLOYEE APPRAISAL SYSTEM

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ABSTRACT

The goal of this project is to create the NECN employee Appraisal System, a web-based tool intended to make it easier to assess employee performance in a collegiate context. Important aspects of this system include performance tracking tools and editable assessment forms. Its main features are designed to improve communication between higher authorities and employees, streamline the appraisal process, and increase openness. The platform incorporates essential elements of employee evaluation and covers four primary areas: (i) Teaching, Learning, and Evaluation; (ii) Co-curricular and Extension Activities; (iii)Research and Allied Contributions; and (iv) Head of Department (HOD) Assessment. The approach emphasises the need of having efficient feedback mechanisms because it recognises the critical role that ongoing training plays in enhancing employee performance. Through this appraisal system, the employee efficiency and calibre will reach to the higher authorities Easy rating analysis and retrieval are made possible by effective SQL database management. The goal of the NECN Employee Appraisal System's features is to provide thorough and effective employee evaluations, which will enhance the institution's overall academic and professional development.

KEYWORDS: Web-Based Tool, Employee Performance Assessment, Performance Tracking, Editable Assessment Forms, Higher Authorities Communication, Appraisal Process Streamlining

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MOBILE AUCTION PLATFORM: A COMPREHENSIVE ANDROID-BASED SOLUTION

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ABSTRACT

In the era of mobile technology, auction systems must evolve to meet the demands of a rapidly growing and dynamic marketplace. This paper presents a comprehensive Android-based solution for a mobile auction platform designed to provide a seamless and user-friendly experience for both buyers and sellers. The platform leverages the ubiquity and versatility of Android devices to offer real-time bidding, secure transactions, and efficient auction management. Key features include user authentication, item listing, bid tracking, and instant notifications, all within an intuitive interface. By integrating advanced mobile technologies, our solution enhances accessibility, convenience, and engagement in auction activities. The application employs robust security measures to ensure safe transactions and protect user data. Additionally, the real-time bidding feature is optimized to handle high volumes of traffic, providing a smooth and reliable user experience. The study details the system architecture, development process, and deployment strategies, showcasing the platform's scalability and adaptability to various auction scenarios.

KEYWORDS: Mobile Auction, Android-Based Solution, Real-Time Bidding, Auction Management, User-Friendly Interface, Secure Transactions, Mobile Technology, System Architecture, Scalability, Auction Scenarios, Machine Learning, User Recommendations.

ENHANCING EFFICIENCY WITH THE NECN SMART COLLEGE APP

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ABSTRACT

This application tackles the inefficiencies and communication gaps encountered by educational institutions using traditional methods to manage academic resources. It empowers faculty and students alike by offering a comprehensive digital platform that improves the organization and accessibility of educational materials. Faculty can upload syllabi, notes, assignments, and quizzes, and manage student interactions in real-time, ensuring information is distributed promptly and systematically. Students benefit from an intuitive interface that enables them to access course materials, participate in quizzes, and engage in discussion forums, all within a single platform. The app also features real-time notifications for new uploads and updates, keeping students informed about their academic duties. Research shows that the app significantly enhances resource management, reduces administrative workloads, and improves communication, fostering a more efficient and interactive learning environment. By bridging the gap between traditional educational approaches and modern digital solutions, the NECN Smart College App enhances the academic success and efficiency of both students and faculty, promoting a more connected and resource-rich educational experience.

Keywords: Real-Time Notifications, Course Materials, Discussion Forums, Digital Platform, Academic Resources, Quizzes, Student interactions

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PLAY ORGANIZER

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ABSTRACT

In the realm of sports event management, efficient coordination and communication are crucial for successful outcomes. This abstract introduces a mobile application aimed at simplifying the complexities associated with organizing sports events. The application leverages the ubiquity and convenience of mobile technology to enhance the planning, execution, and participant engagement of various sports activities. The mobile application addresses the needs of amateur and professional sports organizers alike, promoting accessibility, efficiency, and engagement throughout the event lifecycle. By harnessing mobile technology, this platform aims to empower organizers to focus more on delivering exceptional sports experiences while simplifying the logistics of event management.

In today's dynamic world of sports, effective event management is crucial for ensuring smooth operations, maximizing participant engagement, and delivering memorable experiences. This abstract introduces a sophisticated mobile application tailored specifically for organizing sports events, leveraging the convenience and connectivity of mobile technology to streamline the entire event lifecycle.

The application offers a comprehensive suite of features designed to simplify the complexities associated with sports event planning and execution. Central to its functionality is the intuitive event creation and management system, which allows organizers to effortlessly set up new events with detailed information such as date, time, location, and type of sport. This streamlined process not only saves time but also enhances accuracy in event scheduling and logistics. Participants benefit from a user-friendly registration process directly within the app. They can securely register for events, submit necessary waivers, and make payments through integrated payment gateways, eliminating the need for paper forms and manual transactions. Real-time updates and notifications keep participants informed about event details, changes, and important announcements, ensuring clarity and minimizing confusion.

CAMPUS RESOURCES AND EQUIPMENT MONITORING SYSTEM

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ABSTRACT

The Campus Venue and Equipment Booking System is a comprehensive software solution tailored for educational institutions to optimize the management and reservation of campus facilities and resources. This centralized platform allows administrators, departmental staff, and other authorized personnel to efficiently browse, check availability, and reserve venues and equipment. The system ensures secure access through role-based logins, maintaining the integrity and security of the booking process. High-demand resources may require additional approval from designated administrators, ensuring fair and regulated use. Reservation management tools stream line the process of requesting, approving, and confirming bookings, significantly reducing administrative overhead. Additionally, the system includes robust equipment inventory tracking, allowing for comprehensive monitoring of resource status, availability, and maintenance needs Maintenance scheduling features ensure that equipment remains in optimal condition through regular servicing, and detailed records of maintenance activities are kept for accountability. Overall, the Campus Venue and Equipment Booking System enhances operational efficiency, reduces the likelihood of scheduling conflicts, and ensures that campus resources are utilized effectively and maintained properly. This system is indispensable for educational institutions aiming to streamline their venue and equipment booking processes, ultimately supporting the smooth execution of various events and activities.

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CENTRALIZED ANAMOLY TRACKING SYSTEM

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ABSTRACT

A Centralized Anomaly Tracking System (CATS) is a robust framework designed to detect, track, and manage anomalies within complex data ecosystems. By consolidating data from various sources into a centralized repository, CATS enables comprehensive monitoring and analysis, providing a unified platform for identifying irregularities that deviate from established patterns. This system employs advanced machine learning algorithms and statistical methods to continuously scan data streams, pinpointing potential anomalies in real time. The centralized nature of the system ensures that all anomaly detection processes are streamlined, making it easier to maintain consistency, accuracy, and efficiency in anomaly management across different departments or systems within an organization. The benefits of implementing a Centralized Anomaly Tracking System are multifaceted. First, it enhances the ability to respond quickly to potential issues, minimizing the impact of anomalies on operations. By centralizing anomaly tracking, organizations can eliminate silos of information, fostering a more collaborative environment where insights and data can be shared seamlessly. Additionally, the system's analytics capabilities not only detect anomalies but also provide valuable insights into underlying causes, helping organizations to address root problems and prevent future occurrences. Ultimately, CATS contributes to improved operational resilience, better decision-making, and enhanced security by providing a comprehensive and integrated approach to anomaly detection and management.

KEYWORDS: Anomaly Tracking, Centralized Monitoring, Data Aggregation, Analytics, System Integration, error Analysis, Anamoly status Analysis.

HEALTH CARE CONNECT APP

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ABSTRACT

Health care is a fundamental need for everyone, and leveraging technology through a mobile app can significantly enhance this access. Our proposed app aims to streamline healthcare management by integrating features for booking doctor appointments, managing pharmacy needs, and receiving medication reminders, thus facilitating seamless communication between patients, doctors, and pharmacists. Developed using Java and Firebase for Android devices, the app is structured into four main modules: user, doctor, pharmacist, and reminder. The user module enables patients to book appointments with doctors, manage their health records, and receive personalized healthcare information. The doctor module allows health care professionals to manage their schedules, view patient histories, and communicate directly with patients for consultations and follow-ups. The pharmacist module is designed for managing prescriptions, ensuring the timely delivery of medications, and maintaining inventory records. Finally, the reminder module sends notifications to users for medication intake and upcoming appointments, helping patients adhere to their prescribed treatment plans.

Keywords: Appointment scheduling, Feedback system, Data Management, User Roles, Healthcare service delivery, User Interaction, Prescription management.

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STAYSECURE: A PROACTIVE APPROACH TO WOMEN'S SAFETY VIA MOBILE APPLICATION

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ABSTRACT

The security of women is a critical issue faced by society. Crimes against women are increasing in number day by day. When it comes to security concerns, a smart phone can be one the easiest way of gaining help.The existing system, has limited functionality and outdated features severely hinder its efficiency in providing timely assistance. Without real-time communication capabilities, the system fails to offer immediate support during emergencies, leaving users vulnerable and exposed to potential threats. With technology constantly advancing, the system's inability to keep pace with modern advancements limits its effectiveness and relevance in addressing contemporary safety concerns. This project strives to create an android application which can help to protect women in emergency situation. In This android application it was designed to provide secure environment for the women and to get quick and easy access to help to overcome the emergency situation. The application's features include real-time location tracking, which allows users to know about people nearby and ask for or provide help when needed, generating support within the community. Additionally, Users can receive and send So Multimedia alerts from nearby people and provide assistance to those who were in need. With this technological advancement the women can feel safe at anywhere and at any point of time.

ADVANCED DEEPFAKE DETECTION ON SOCIAL MEDIA: LEVERAGING COUNTVECTORIZER AND RANDOM FOREST FOR SUPERIOR TWEET CLASSIFICATION

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ABSTRACT

Social media platforms are meant to enhance the exchange of ideas and opinions, through a variety of content types such as images, text, audio and videos. This has become possible because sophisticated text generation models have been invented in the recent past that can be used by adversaries to produce deep fake posts which look very real but mislead the public. In order to avoid this threat, it is critical that social media sites develop robust techniques for identifying these false messages. This study therefore seeks at identifying whether machine-generated content is found on platforms like Twitter. The research uses simple machine learning model employing Count Victimizer (CV) for features extraction to discriminate between human tweets and those generated by bots using Publicly available Twee fake dataset. Additionally, the proposed approach which relies heavily on Random Forest Classifier is compared with other machine learning algorithms like MLP, LR, SVM, DT, KNN, AC, SGC, GBM and NB. Results indicate that RF performs better than all other classifiers achieving 94% accuracy when classifying tweets among others. Therefore, this study demonstrates potential use of random forest classifier as an efficient and accurate tool for tweet classification that could be used to detect deep fake content on social media platform

KEYWORDS: Tweet, Random Forest, CV, Bot

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STUDENT GRIEVANCE HANDLING SYSTEM

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ABSTRACT

In student grievance handling using android application we are developing an android application for handling grievance information of students in college .In the traditional approach introduce complaint box system, allows students to complaint various problems in college such as providing feedback about faculty, classroom issues, ragging, lab issues, student fighting in classrooms and so on .But the traditional approach is completely manual system and it does not offer convenience way to handle the every problem .To overcome such problems, developing an android application offers user friendly interface and convenience way to handling grievance of students in college. The Student's Grievance Sharing Application desires to promote and maintain a beneficial and unbiased educational environment .The grievances of the students can be submitted in the application which will be taken up on high priority and resolved by the management (Head of the Department) according to rules and regulations of the institute .The traditional approach is completely manual system and it does not offer convenience way to handle the each and every problem. To overcome such problems, developing an android application offers user friendly interface and convenience way to handling grievances of students.

Keywords: Student Grievance Management, Grievance Submission, Issue Resolution, Academic Concerns, Administrative, Problems, User-Friendly Interface, Real-Time, Tracking, Policy Improvement, Student Support System, Complaint Handling, Department Assignment, Communication Enhancement.

SMART CAMPUS PLACEMENT SYSTEM

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ABSTRACT

This paper describes the creation of a comprehensive digital platform aimed at improving campus recruitment by eliminating the inefficiencies of traditional manual methods. The system is divided into separate modules for college management, company management, and students, offering tailored functionalities for each group. Key features include the ability to submit applications online, real-time tracking of recruitment activities, and centralized storage of student profiles, job postings, and company information. By providing a unified database and an easy-to-use interface, the platform greatly enhances coordination among students, companies, and placement officers. Initial testing and user feedback show significant improvements in efficiency, accuracy, and transparency in the recruitment process, making it a valuable tool for modernizing campus recruitment.

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MULTI SUPER MARKET MOBILE APPLICATION

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ABSTRACT

Multi Super Market addresses the challenge faced by local vendors due to the dominance of large retail chains and online grocery platforms. The increasing preference for online grocery shopping has adversely affected small local stores, which struggle to compete with the extensive reach and resources of bigger retailers. The app aims to empower local general store owners by enabling them to sell their products online, thereby increasing their market reach and profitability. By providing a platform for local merchants to compete in the digital marketplace, Multi Super Market supports the sustainability and growth of small businesses. Local store owners can register on the Multi Super Market app, list their products, and manage inventory in real-time. This functionality allows merchants to provide customers with up-to-date information on product availability, ensuring a seamless shopping experience. The app also offers tools for inventory management and order processing, making it easier for store owners to transition to an online business model. The app offers a comprehensive and convenient solution for customers, allowing them to browse products from various local stores, compare prices, and choose between home delivery and in-store pickup. This approach not only saves time and effort for customers but also enhances the competitiveness of local vendors. The findings indicate that customers appreciate the convenience and variety provided by the app, while store owners benefit from increased visibility and sales. By facilitating the digital transition of local stores, Multi Super Market supports local economies and promotes sustainability. The app bridges the gap between small merchants and the growing demand for online grocery shopping, ensuring a user-friendly and efficient shopping experience for consumers. The implementation of this platform fosters the success of local businesses, enabling them to thrive in the competitive online market.

Key words: Mobile Commerce, Geolocation Services, Real-Time Inventory, User Authentication, Order Management System, Payment Gateway Integration, Customer Feedback System, Business Analytics

SUPPORTING ORPHANS AND FACILITATING ADOPTION VIA ANDROID APP

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ABSTRACT

This project "Supporting Orphans and Facilitating Adoption via Android App" has been designed to make orphan support and the adoption process more efficient and accessible. Traditional methods of doing things are often characterized by inefficiency and a lack of transparency, having huge paper works involved in the task, which renders the solitary duty of an orphanage trying to reach probable donors and adoptive parents effectively very difficult. This Android app will sort out all these loopholes by providing one umbrella platform for managing donations, viewing orphan profiles, and processing adoption requests. It provides a user-friendly interface through which the donors can smoothly donate and view their previous donations. Prospective adoptive parents can see the profiles of all the children ready for adoption and send requests for adoption. The orphanage administration is able to efficiently manage the profile of orphans, handle the donations, and process adoption requests. The Android Studio app is written in Java and XML, while the back-end services emanate from Firebase. This would help try to make sure that data management is actually secure and real-time. More work in enhancing multilingualism—and the link-up of government databases, advanced analytics, and mobile payment facilities will further smoothen the operations and enhance user experience, extending the platform's potentials.

KEYWORDS: Orphan Support, Adoption Process, Android Application, Donation Management, Child Profiles, User-Friendly Interface, Real-Time Data, Orphanage Information, Prospective Adoptive Parents, Technology Integration.

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AI-POWERED PROCTORING SYSTEM FOR ONLINE EXAMS

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ABSTRACT

The rapid shift to online education due to the COVID-19 pandemic has highlighted the critical need for innovative solutions to ensure academic integrity during virtual examinations. This project presents a cutting-edge Proctored Online Examination System that employs deep learning and computer vision to enhance security and streamline the examination process. The system is managed by super admins and provides distinct functionalities for both faculty and students. Faculty members access the system via manual login, while students undergo secure registration and authentication. The student interface includes a dashboard with access to courses and exams, as well as a coding compiler supporting languages like C, C++, SQL, Python, and Java. Utilizing advanced deep learning algorithms, such as OpenCV's LBPH (Linear Binary Pattern Histogram), the system ensures continuous face detection and recognition to verify student identities throughout the exam. Preliminary results indicate a high accuracy rate in identity verification, significantly mitigating cheating. This innovative system offers a secure and user-friendly platform for online exams, promoting robust identity verification and enhancing the overall learning experience. By ensuring exam integrity and fostering trust in online education, this system has the potential to transform the landscape of virtual learning and assessment.

Keywords: Online Learning, Proctored Exams, Deep Learning, Computer Vision, Academic Integrity, Face Recognition, LBPH, Identity Verification, OpenCV, Interactive Learning

BLOOD DONATION ANDROID APPLICATION

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ABSTRACT

Prana is a cutting-edge mobile application designed to revolutionize the blood donation process by simplifying donor registration and employing advanced matching systems. Users can easily sign up as blood donors, providing essential details such as blood type, contact information, and donation history. Utilizing GPS technology, Prana matches donors and recipients based on their location and blood group, presenting potential matches in ascending order of proximity to ensure the nearest donors are prioritized. Recipients can contact matched donors through WhatsApp in case of emergencies, facilitating swift communication. Additionally, Prana notifies donors about nearby blood donation camps, encouraging increased participation. Its advanced search functionality enables hospitals, blood banks, and individuals to find suitable donors based on diverse criteria, such as blood type, proximity, and availability, thus accelerating the process of acquiring critical blood supplies. By integrating real-time location tracking and comprehensive matching capabilities, Prana significantly enhances the efficiency and responsiveness of blood donation networks.

Key Words*:* Mobile application, Notification System, Matching, Blood Camp, GPS, Donor, Recipient, Location, whatsapp

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NECN INTEGRATED PROJECT ALLOCATION SYSTEM

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ABSTRACT

Our project Allocation System is a solution geared towards making the whole process of assigning projects to students in academic institutions become more efficient, fair and satisfactory. It utilizes cutting-edge matching algorithms that examine several parameters such as student preferences, skills, academic performance and project requirements. This intricate assessment guarantees that projects are well-matched with the abilities and interest of students thus creating individualized and interactive studying modes. The system has an easy-to-use interface which allows for seamless interaction between students, teachers and administrators thereby facilitating openness while allocating tasks among them. With real-time data processing and analysis, the system can adapt to changes as they occur thus allowing it to offer valuable insights used for continuous improvement efforts. By automating the allocation process, administrative burden is reduced through minimizing potential bias in allocation thus ensuring equal access to appealing projects by all students. In summary; therefore, this system aims at improving academic achievements, enhancing student satisfaction, while enabling educators to deliver high-quality customized educational experiences.

KEYWORDS: Reviews, Add project details, Assign guides, Marks Allocation, Automated processes, Proposal submission.

ANDROID BASED COLLEGE FACULTY LEAVE MANAGEMENT SYSTEM

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ABSTRACT

Our project aims to modernize faculty leave management in educational institutions through an innovative Android application. Recognizing the inefficiencies of the current manual process, we offer a flexible, mobile-centric solution that allows faculty to request leaves anytime and anywhere. This app simplifies the leave application process, reduces the administrative workload, and ensures accurate leave record management. Key features include applying for leave, checking leave status, assigning staff, and calculating loss of pay, all designed to streamline administrative tasks. With an intuitive interface and robust security, our app provides a user-friendly experience while maintaining data confidentiality. By digitizing leave management, we enhance efficiency, transparency, and convenience, creating a responsive environment that meets the diverse needs of faculty and optimizes administrative processes. Over all, our project seeks to revolutionize leave management practices in educational institutions by introducing a modern, mobile-centric approach. By empowering faculty members with the ability to request leave on-the-go and simplifying administrative tasks through automation, we aim to enhance efficiency, transparency, and convenience in managing faculty leaves. Through this endeavor, we aspire to create a more agile and responsive environment that supports the diverse needs of faculty members while optimizing administrative processes.

KEYWORDS – Leave Application Form, Leave Tracking, Notification Messages, Firebase Integration, User Interface (UI), User Experience (UX), Data Security

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BUS TICKETING OPTIMIZATION THROUGH QR CODE TECHNOLOGY

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ABSTRACT

The Android-based smart bus ticketing system leveraging QR code technology aims to digitalize the public bus transportation ticketing process. This project focuses on developing a mobile application that allows passengers to purchase, store, and manage bus tickets digitally. By generating unique QR codes for each ticket, the system eliminates the need for physical tickets and enables quick, secure, and efficient validation by bus conductors using a dedicated scanning application. The backend infrastructure includes a robust server and database to handle user authentication, ticket management, and secure payment processing. Real-time data collection and analysis provide valuable insights for optimizing bus routes and schedules, enhancing operational efficiency. This app addresses several critical issues found in traditional ticketing systems, such as long queues, lost or damaged tickets, and inefficient manual ticket checks. By streamlining the ticketing and boarding processes, the app significantly reduces waiting times and enhances the overall passenger experience. The app's robust security measures protect user data and ensure secure transactions, fostering trust and reliability among users. Additionally, the digital nature of the system promotes environmental sustainability by reducing paper usage. This project effectively addresses the inefficiencies, security concerns, and inconvenience associated with traditional bus ticketing methods, offering a scalable and user-friendly solution that benefits both passengers and transit operators.

KEYWORDS: Passenger, Conductor, QR code, Ticket, Bus

ATTENDANCE ANALYTICS: UNLOCKING PATTERNS FOR ACADEMIC SUCCESS

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ABSTRACT

This project develops an Android-based Student Attendance Analysis Application designed to streamline attendance management in educational institutions. It offers a centralized, role-specific interface for Administrators, Heads of Departments (HODs), Class In-Charges, Mentors, and Parents, each equipped with functionalities for managing records, tracking attendance, and generating absence notifications. Using Firebase for real-time data synchronization ensures accurate and timely updates. Advanced analytics provide insights into attendance trends, while secure authentication and data encryption protect sensitive information. Developed with Android Studio, the application integrates seamlessly with existing school systems, enhancing efficiency and communication. Real-time data synchronization through Firebase ensures immediate and accurate updates to attendance records, while advanced analytics provide actionable insights into attendance patterns. The application's secure architecture includes robust authentication and data encryption, ensuring privacy and compliance with standards. Developed using Android Studio, the user-friendly interface facilitates seamless integration with existing school management systems, improving operational efficiency and communication. The scalable design allows for future enhancements to meet evolving institutional needs.

KEYWORDS: Student Attendance Management, Attendance Tracking, User Authentication, Parent Notifications, Mentor Monitoring, Automated Notifications, Attendance Analysis.

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INSTITUTIONAL FEEDBACK HUB: A MODERN APPROACH TO EDUCATIONAL FEEDBACK FOR OUR INSTITUTE

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ABSTRACT

The purpose of this project is to develop a web application that will enhance how feedback is collected within learning institutions. The system offers a single platform for students, teachers, administrators and others to give their thoughts freely and handle such sessions. Conventional ways of gathering feedback majorly through papers have been proven time consuming since they are marred by inaccuracies as well as fragmented data which lead to increased workload on the administration. This has however been addressed through NECN Feedback Hub by automating it thus improving accuracy and efficiency in the whole process. It is an online platform called NECN Feedback Hub that can be accessed via any web browser hence eliminating paper forms, manual entries among others. Some notable features include customizable survey templates, instant broad-based data capture and reporting possibilities which help ensure convenience and availability of information required for strategic planning and decision-making based on received feedback. Furthermore, system administrators can export this information into excel spreadsheets or reports for further analysis thereby ensuring structured utilization.

KEYWORDS – Response, Schools/Colleges/Universities, Concerned Parties, Web Application.

ADVANCED MENTOR COLLABORATION AND DEVELOPMENT

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ABSTRACT

Mentoring is a classic and complex teaching tool with significant potential for enhancing learning through educational technology. Emphasizing motivation and encouragement, an Electronic Mentoring System (EMS) provides an interface between mentors and mentees, replacing traditional face-to-face interactions. This client-server-based model is particularly useful in undergraduate programs, where each faculty member (mentor) is assigned 18-20 students (mentees). The primary goal of this program is to foster positive relationships between mentors and students. The EMS utilizes online software that comprises three main components: the Admin Module, the Mentor Module, and the Mentee Module. The Admin Module includes an administrative dashboard for user management, assignment of mentor-mentee pairs, feedback monitoring, and reporting. The Mentor Module allows mentors to view their assigned mentees, ask questions, update progress, and access resources. The Mentee Module offers students a simple interface to view their details, ask questions, leave comments, and share helpful information. This can be achieved using online software that consists of three major components: the Admin Module, the Mentor Module, and the Mentee Module. The Admin Module includes an administrative dashboard for user management, assignment of mentor-mentee pairs, feedback monitoring, and reporting. The Mentor Module allows mentors to view their assigned mentees, ask questions, update progress, and access resources. The Mentee Module provides students with a simple interface to view their details, ask questions, leave comments, and share helpful information.

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NECN QUESTION PAPER GENERATION SYSTEM

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ABSTRACT

Generating examination papers in academic institutions has traditionally been a manual, time-consuming, and repetitive process, making it prone to corruption and unfairness. To address this issue, a Randomized Question Paper Generator has been developed. This system automates the workflow of question submission, approval, and exam paper generation, thereby enhancing the efficiency, reliability, and fairness of the question paper creation process in academic institutions. Teachers input questions tagged with Bloom's Taxonomy levels into the system, which are then vetted and approved by the Heads of Departments (HODs). The Exam Cell sets exam parameters such as dates and modules using a dynamic academic calendar. To ensure uniqueness and adherence to curriculum requirements, randomized question papers are generated from a pool of approved questions. This system has resulted in reduced manual workload for faculty members and administrative staff, decreased errors when preparing assessment materials, and the creation of unique question papers for each evaluation.

KEYWORDS: Examination Management System, Question Repository, Review and Approval Process, Flexible Scheduling, Collaborative Question Contribution, Automated Paper Creation, Question Randomization.

NEXT-GEN LAB MANAGEMENT: DEVELOPMENT AND INTEGRATION OF AN EVALUATION SYSTEM

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ABSTRACT

Evaluating and managing lab experiment marks in academic institutions often rely on manual methods that are prone to errors and inefficiencies. As modern labs grow in complexity and data volume, these traditional methods become increasingly inadequate, highlighting the need for a robust digital solution. This report introduces the Lab Evaluation Management System (LEMS), designed to streamline lab mark management through advanced technology. Built using the ASP.NET framework, C#, and an Oracle database, LEMS enhances efficiency, accuracy, and accessibility in lab data management. It offers detailed reporting for student-wise, faculty-wise, and experiment-wise evaluations, providing stakeholders with critical insights for informed decision-making. The development of LEMS involved a comprehensive analysis of academic requirements, iterative design, and agile implementation to ensure it met user needs. Key components of the system include Campus Configuration, Faculty Configuration, Lab Marks Head Entry, Experiment Entry, and Lab Marks Entry, all featuring extensive reporting capabilities. Rigorous testing ensured reliability, performance, and security. Results show marked improvements in efficiency and accuracy, with automated processes significantly reducing evaluation time and errors. Positive user feedback highlights the system's intuitive interface, streamlined administrative tasks, enhanced data accuracy, and improved transparency and accountability. As a scalable and customizable solution, LEMS revolutionizes lab evaluation management in academic institutions, contributing to the advancement of educational technology and best practices.

Keywords: Lab Evaluation Management System (LEMS); Academic Institutions; Digital Solution; ASP.NET Framework; Oracle Database; Academic Institutions; Automated Processes

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PHARMACY PROCUREMENT MANAGEMENT SYSTEM

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ABSTRACT
The pharmacy purchase management system is an elaborate solution intended to modernize manual procurement methods and legacy systems in medical institutions. The mentioned management system upgrades traditional procurement processes in medical institutions. The procurement cycle broadly encompasses ordering the generation of purchase orders pos goods received notes GRNS and price changes for medical commodities. However, the major feature that sets the system apart is its ability to search for buyers and choose the most suitable one effectively the pharmacy purchase management system is compatible with existing inventory. This integration provides real-time updates and accurate stock management and maintains a report that the pharmacy staff has accurate information about the inventory level to overcome the situation of overstock or out-of-stock medical products. Real-time data updating helps in stock management more efficiently and boosts overall operational effectiveness.

Keywords: Pharmacy Purchase Management, Inventory Control, Procurement Process, Healthcare Facilities, Resource Management, Integration Capabilities, Ajax, jQuery, Purchase Orders, Goods Received Notes, and Stock Management.

Android based Real Time College Bus Tracking System Using Driver GPS

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ABSTRACT
College bus tracking system is an Android application to tracks college bus locations using GPS from the driver's smartphone, offering a cost-effective alternative to traditional hardware-based systems. This method reduces costs and improves communication between buses, students, and college management. Real-time tracking helps students avoid long waits due to traffic or bus issues, optimizing their daily schedules. The College Bus Tracking System is an Android application designed to track college bus locations using GPS from the driver's smartphone, offering a cost-effective alternative to traditional hardware-based systems. This approach significantly reduces costs and enhances communication between buses, students, and college management. Real-time tracking enables students to avoid long waits due to traffic or bus issues, optimizing their daily schedules. Additionally, by integrating machine learning algorithms, such as the Random Forest algorithm, the system can predict bus arrival times more accurately by analyzing historical data and real-time traffic conditions. Incorporating a feedback mechanism for students and parents can further improve the system's responsiveness and reliability. Expanding the application to support multiple platforms, including iOS, will increase accessibility. Moreover, integrating emergency response protocols can further ensure student safety. Parents also benefit from timely updates on bus whereabouts, enhancing confidence in their child's safety. By integrating modern technology, our project aims to improve the efficiency, communication, and safety of the college transportation system.

Keywords: Real-time, Robust Communication, GPS, Smartphone

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ENHANCING CUSTOMER ENGAGEMENT IN VEHICLE INSURANCE APP

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ABSTRACT

The appearance of versatile applications within the protections industry has revolutionized the conveyance of personalized protections items, altogether improving client engagement and fulfillment. These apps utilize advanced calculations and information analytics to prepare tremendous sums of data rapidly and precisely, empowering safeguards to tailor their offerings to meet person client needs. By leveraging information from IoT gadgets, social media, and verifiable claims, safeguards pick up profound experiences into client behavior, inclinations, and chance profiles, which permits for the creation of interestingly suited protections items with custom-made suggestions, proactive hazard administration arrangements, and real-time help. Prescient analytics offer assistance expect client needs, guaranteeing convenient and important administrations that boost fulfillment and dependability. Moreover, AI-powered chatbots and virtual collaborators in portable apps give moment back, direction, and personalized suggestions all through the protections prepare, making communication consistent and fortifying the bond between safeguards and clients. This integration of versatile innovation in protections cultivates long-term connections built on believe and straightforwardness, driving higher fulfillment, devotion, and trade development.

Keywords: Mobile Applications, Insurance, Personalized, Customer Engagement, Review

ENSURING DATA SECURITY AND EFFICIENCY IN CLOUD STORAGE THROUGH DEDUPLICATION

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ABSTRACT

In cloud storage, data deduplication is crucial to improving data security and resource efficiency. This article provides a thorough methodology for safe and effective data deduplication that lowers storage costs and boosts system performance in general. The system guarantees that only unique data is saved by utilizing sophisticated algorithms to detect and remove redundant data, hence greatly reducing storage footprint. Strong encryption techniques preserve the confidentiality and integrity of data while it is in transit and at rest. The system uses parallel processing and scalable designs to provide smooth performance even as data quantities increase, making it capable of handling big datasets. The framework also includes easy-to-use tools for simple administration and secure key management. Strong encryption mechanisms are incorporated into the architecture to safeguard data while it is in transit and at rest, ensuring data integrity and confidentiality. Data is encrypted before it leaves the user's property thanks to client-side encryption, and secure key management procedures are in place to stop unwanted access. This guarantees that the data will be unreadable by unauthorized parties even in the case of a data breach. With cutting-edge deduplication methods like content-defined chunking and hash-based fingerprinting, the system is designed to be as efficient as possible. By minimizing the quantity of data that has to be processed and transported, these techniques enable the rapid and precise identification of duplicate data segments, increasing the speed at which data may be retrieved. The system is also extremely scalable, meaning it can adjust to growing data quantities without sacrificing efficiency. The suggested methodology for effective and safe data reduplication in cloud storage provides a thorough answer to contemporary storage issues. Through the integration of sophisticated reduplication methods, resilient security protocols, and expandable architecture, the framework guarantees data preservation and integrity while simultaneously lowering storage expenses and enhancing system efficiency. This method satisfies the needs of end users and companies by offering a dependable, affordable, and secure solution for handling massive amounts of data in cloud settings.

Keywords: Data Reduplication, Cloud Storage, Data Security, Storage Efficiency, Redundancy Elimination, Data Integrity, Scalability, Encryption, Cloud Computing, Storage Optimization, Performance Enhancement, Data Management.

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ENHANCING TRANSACTION MANAGEMENT WITH SECURE LEDGER APPLICATION

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ABSTRACT

Ensuring secure and transparent communication channels across businesses is increasingly important in today's digital age, which has led to the demand for advanced laser technology. This study examines the creation and development of a secure ledger application that meets the critical needs of an effective behaviour management system. Incorporating user-friendly interfaces and efficient methods, the application aims to provide comprehensive insights through transaction tracking and report generation features, increasing user productivity The aim of this study is to evaluate the effectiveness of secure ledger applications in maintaining data integrity and transparency. A prototype laser application was developed and tested using sophisticated cryptography techniques. Performance metrics were analysed under controlled conditions to evaluate the performance of the intervention. Our research shows that a secure ledger application effectively maintains data integrity and security, showing the strengths of the cryptographic measures used but the study also highlights scalability challenges that need to be addressed for widely accepted emphasis. The implications from these findings are substantial, suggesting that secure ledger implementation has the potential to transform data usage across industries This study highlights the importance of continuing to explore scalability solutions to deliver the benefits of a ledger secure technology has played a full role in financial services and beyond.

Keywords: Financial record keeping, expense tracking, biometric authentication, transaction tracking, report generation, transaction tracking, user-friendly interfaces.

FACIAL RECOGNITION ENABLED VOTING SYSTEM FOR ANDROID

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ABSTRACT

This project focuses on developing a secure and efficient Android voting system using face recognition technology. The proposed system ensures that users can cast their votes securely while protecting their identities. The administrator has the capability to create polls and manage users effectively. The Android voting system employs facial recognition to authenticate users by using Microsoft Cognitive API, thereby ensuring that only authorized individuals can vote. This method of biometric verification enhances security and prevents fraudulent activities during the voting process. The system is designed to be user-friendly, with an intuitive interface that allows users to vote for their favourite candidates with ease. The administrator dashboard provides comprehensive management tools for creating polls, monitoring voting activities, and managing user accounts. This project utilizes a Windows 64-bit operating system, with the front end developed using Android UI and the back end supported by a Firebase database. The programming language used is Java, and development is conducted using Android Studio. Through modeling and simulation, the performance of the Android voting system has been tested extensively. Overall, the Android voting system with face recognition is a robust, secure, and user-friendly solution that protects user identities and ensures the integrity of the voting process.

KEY WORDS: Microsoft Cognitive Face API, Firebase Database, User Authentication, Poll Creation, User Management, Android UI, Java, Android Studio, Administrator Dashboard, User-Friendly Interface.

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FESTIVAL COORDINATION AND HELPER MANAGEMENT MOBILE APPLICATION

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ABSTRACT

Designed to simplify festival and event organization while efficiently managing volunteers, the Fest Organize and Volunteer Monitoring App is a comprehensive mobile solution. Through this platform, event organizers can create and manage detailed festival schedules, coordinating seamlessly with volunteers. The app enables organizers to outline comprehensive event schedules, specifying dates, times, and locations for each activity. Additionally, tasks can be assigned to volunteers, whose progress can be tracked in real-time. Volunteers, on the other hand, can use the app to sign up for shifts, view their assigned tasks, and communicate with organizers. Furthermore, the app's monitoring system allows organizers to track volunteer performance, providing detailed reports on volunteer activity, including hours worked and tasks completed. This information helps organizers manage their volunteers more effectively, ensuring that all tasks are completed efficiently.

KEYWORDS: Festival organization, event organization, volunteer management, mobile app, event scheduling, volunteer scheduling, task management, volunteer tracking, communication, performance monitoring

ROADSIDE REFUELING APPLICATION

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ABSTRACT

Offering a streamlined, efficient, and convenient method for ordering fuel and tracking deliveries, the Road Side Refueling Application transforms how vehicle owners interact with fuel stations. By leveraging mobile device GPS functionality, the app accurately identifies the user's location, displays nearby fuel stations, and simplifies the fuel request process. In emergencies where a vehicle unexpectedly runs out of fuel, this app becomes a crucial service. Traditionally, such situations require a stressful search for the nearest petrol station, causing significant delays and inconvenience. With this app, users can effortlessly request fuel, which is then delivered straight to their location. Catering to various user needs in both urban and remote areas, the app enables users to view and select nearby fuel stations to request fuel from. Moreover, the Fuel Delivery application offers real-time tracking, allowing users to monitor the progress of their fuel delivery. Its user-friendly interface ensures that anyone can effectively use its features, enhancing the overall user experience.

Keywords: Location, Fuel stations, Real-Time location Tracking, Maps, GPS fuel tracking.

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FIREBASE ENABLED SAFE LIFT ANDROID APPLICATION

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ABSTRACT

In times of disaster, the swift and accurate distribution of information is crucial for helping affected communities navigate challenging circumstances. The project at hand delves into the creation and execution of Safe-Lift, a sophisticated Service Oriented System engineered to provide urgent aid to disaster survivors. This system harnesses mobile services to collect real-time data about users and their immediate surroundings, enabling it to generate service agents, known as 'servants,' that proactively assist mobile users. These 'servants' play a pivotal role in the operation of Safe Lift, constantly engaging with a range of intelligent services within the system. These interactions empower the 'servants' to deliver timely and pertinent assistance by utilizing various public services offered by government bodies and other public organizations. The seamless blend of real-time data acquisition and intelligent service engagement ensures that Safe-Lift can dynamically adapt to the changing needs of individuals affected by disasters, offering immediate and tailored assistance to the specific context. Tapping into the extensive resources available through public service infrastructures, Safe Lift strengthens its ability to provide crucial aid, making it an indispensable tool in disaster response and relief efforts. This innovative approach enhances the effectiveness of emergency response initiatives and emphasizes the significance of leveraging technology to build resilient support systems during crises.

Keywords: Safe Lift, Service Oriented System, Real time, Servants, Admin, Agents.

AUTHENTICATION OF GENUINE PRODUCTS USING QR CODE

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ABSTRACT

Counterfeit products have become increasingly prevalent in recent years, significantly impacting the manufacturing industries. This phenomenon adversely affects companies' names, sales, and profits. Counterfeiting and duplication pose significant risks to any product, potentially damaging brand names, reputations, revenues, and customer satisfaction across all developmental stages. The rapid trade and marketing of counterfeit products have led to substantial financial losses for many individuals. In this paper, we explore how Quick Response (QR) codes, leveraging the emerging trends in mobile and wireless technology, offer a robust solution to combat product counterfeiting. By using QR code scanners, counterfeit products can be identified. Each product's QR code is linked to its specific details. When customers scan the QR code, they can instantly determine the product's authenticity. If the product is genuine, its details are displayed; otherwise, no product information is shown.

Keywords: Product verification, Fake product identification, QR code scanning.

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SMART FILE ACCESS CONTROL: A QR CODE AND FIREBASE APPROACH

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ABSTRACT
The Quick Response (QR) code system, originally designed for the automotive industry, has seen widespread adoption due to its fast readability and superior storage capacity over traditional UPC barcodes. This technology is increasingly being used in academic settings to address the inefficiencies, lack of user-friendliness, and environmental concerns associated with traditional methods of sharing lecture notes. This paper presents the development of an Android application aimed at facilitating the effective distribution of academic notes and materials from faculty to students. The application leverages QR codes to enable students to quickly and easily access digital copies of notes, significantly reducing the need for physical printouts. This approach not only enhances the efficiency and convenience of note-sharing but also promotes eco-friendly practices within the academic community. The application employs Firebase for backend management and QR codes for user authentication to enhance security and user experience. By leveraging QR codes for quick access to materials, the system provides a user-friendly solution that also ensures data integrity and confidentiality. The methodology includes using Firebase for secure file storage and access control, with QR codes providing encrypted authentication. The application was tested for security and usability through vulnerability assessments and user feedback.

Key Words: Quick Response, UPC barcodes, QR Code, Android Application.

NEARBY CAREER NETWORK

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ABSTRACT
The Android based Local Job Finder project aims to develop a comprehensive Local Job Finder App, designed to bridge the gap between job seekers and local employers. The application leverages advanced geolocation technology and a user-friendly interface to provide a seamless job search experience tailored to local opportunities. Key features include a real-time job listing feed, personalized job recommendations based on user profiles, and integrated application tracking. Employers can post job openings and receive applications directly through the platform, while job seekers can filter jobs by various criteria such as distance, industry, and required qualifications. Additional functionalities include resume building tools, interview preparation resources, and notifications for new job postings. By focusing on local employment, the app intends to support community growth, reduce commuting times, and enhance the local economy. This project will involve comprehensive market research, user experience design, and iterative development cycles to ensure the app meets the needs of both job seekers and job providers effectively. This project mainly aimed at enhancing the connection between job seekers and local employers. The primary objective is to facilitate a streamlined and efficient job search process within local communities, thereby promoting local employment and economic growth. The app will utilize advanced geolocation technology to present job seekers with opportunities in their immediate vicinity, minimizing commuting time and supporting local businesses. This project will involve extensive market research to understand the needs of both job seekers and employers in local communities. The development process will be iterative, incorporating user feedback to continuously improve the app's functionality and user experience. By focusing on local employment opportunities, the Local Job Finder App aims to foster stronger community ties, reduce unemployment rates, and contribute to the overall economic development of the regions it serves.

Keywords: Local Employment, Geolocation Technology, Real-Time Job Listings, Personalized Job Recommendations, Application Tracking, Job Search Filters, Notifications and Alerts, Job Seeker Support, Hiring Process Optimization, Employment Platform, Recruitment Solutions, Proximity-Based Job Search.

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GPS ENABLED SECURE TRACKING OF LOST OR THEFT MOBILE

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ABSTRACT

Mobile device theft and loss pose significant security and privacy risks to individuals and organizations. This paper presents a comprehensive solution for GPS-enabled secure tracking of lost or stolen mobile devices. The proposed system integrates advanced GPS technology with robust security protocols to provide real-time location tracking and recovery options. Key features include remote activation of tracking, encryption of location data to prevent unauthorized access, and an intuitive user interface for ease of use. The system also employs geofencing to alert users when the device crosses predefined boundaries and includes mechanisms for remotely wiping sensitive data to protect user privacy. Through this solution, users can effectively mitigate the risks associated with mobile device theft or loss, ensuring enhanced security and peace of mind. Experimental results demonstrate the system's accuracy in location tracking and its resilience against common security threats.

KEYWORDS: Mobile Security, GPS enabled, Secure Tracking, Location Tracking, Coordinates, Firebase based, Theft Prevention, Device Recovery.

APPRENTICESHIP AND BOOTCAMP ADMINSTRATION THROUGH AN ANDROID-BASED APPLICATION

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ABSTRACT

The Apprenticeship and Bootcamp Administration App is designed to streamline the process for organizing and participating in Apprenticeship and Boot camps. The app allows them to update event details and send reminders or important information to participants, ensuring everyone stays informed. The digital platform supports event planning from start to finish, simplifying tasks such as venue and resource booking through an efficient online system. Event organizers can easily create and manage events using fields like title, date, time, location, and description This reduces the need for manual coordination and enhances overall event Administration. Participants can also engage with the app by sharing their thoughts and feedback on the events they attend. Participants can share their feedback on events, helping to improve future activities which is valuable for improving the quality of future events, making the app a tool for continuous improvement. The app functions as a central hub where students, teachers, lecturers, and professors can connect and collaborate more effectively. By digitizing the event planning process, it supports organizers at every stage, from the initial setup to the event's conclusion. The app serves as a central hub for students and educators to connect and collaborate effectively. This digital platform simplifies event planning by supporting every stage, from initial setup to completion. It also makes venue arrangements easier, as users can book spaces and resources online, reducing the need for manual coordination.

Keywords: Bootcamp Administration, Apprenticeship administration, Mobile application, Profile management, Checking Apprenticeship and Bootcamp details, Applying for Apprenticeships and Bootcamps.

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ENHANCED ENERGY OPTIMIZATION SYSTEM OF EV BICYCLE

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ABSTRACT

In India, the demand for electric motor bicycles is rising since they use less energy, produce less noise, and require less maintenance. The goal of this research project is to create a basic, affordable electric motor model. A bicycle equipped with an intelligent controller. The motor, battery, and controller are the three components of the electric motor bicycle. This unique wheel's rim holds a fixed BLDC motor. To regulate the motor's speed and current, the controller is connected to the battery and motor. The electric motor bicycle can be powered by pedaling or by a battery charge. The simulation results were produced by ELECTRIC BIKE SIMULATOR. The hardware assembly kit also displays the experiment findings. Electric cycles use rechargeable batteries and the lighter varieties can travel up to 25 to 32 km. Batteries used in this vehicle are lithium-ion batteries. The mechanical design of a two-wheeler electric vehicle (EV) encompasses a multidisciplinary approach to create a vehicle that balances performance, efficiency, safety, and cost- effectiveness. This paper outlines the key considerations in designing such a vehicle, including frame or frame, motor, drivetrain, battery, braking system, controls and instrumentation, safety features, ergonomics, materials, and manufacturing processes.

KEYWORDS: Bicycle, Electric Motor, BLDC Motor, Electric Bike Simulator.

CONTROLLING STRATEGY OF ELECTRIC MOTOR OF TWO WHEELER

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ABSTRACT

Electric two-wheelers (e-bikes) are emerging as a key solution for sustainable urban mobility. Powered by electricity, they feature advanced technologies for efficient control and connectivity. E-bikes offer significant environmental benefits, including zero tailpipe emissions and reduced noise pollution, making them a cleaner alternative to traditional internal combustion engine (ICE) vehicles. They are also simple in structure, leading to lower maintenance costs and greater convenience for urban travel. However, challenges such as the need for extensive charging infrastructure, public acceptance, and consistent regulations need to be addressed. Despite these hurdles, e-bikes hold great promise for reducing air pollution and easing urban congestion, contributing to a more sustainable and efficient transportation system.

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DESIGN OF SERIAL PERIPHERAL INTERFACE MASTER CORE

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ABSTRACT
This project presents the design of the SPI master core. It is a commonly used communication protocol that allows serial data transfer between a master and multi-slave device over a short distance. In this project, we will focus on block-level architecture and develop RTL code for the same. This controller is developed using Verilog HDL based on the IEEE standards and also verified using Verilog HDL code. The main part of the SPI master core is to generate the serial clock which will be derived from the wishbone master clock. The SPI protocol works with Master-Slave configuration, in full duplex mode. This is a 4-wire transmission that includes "SCLK, MOSI, MISO, SS". MOSI will transfer the bit serially from the SPI master core to the SPI slave and MISO will receive the serial bit from the SPI slave to the SPI master.

A NOVEL SQUARE WAVE GENERATOR BASED ON THE TRANSLINEAR CIRCUIT SCHEME OF SECOND GENERATION CURRENT CONTROLLED CURRENT CONVEYOR-CCCII

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ABSTRACT
A robust square wave generator employing a sole capacitor and two resistors has been presented in this study. Low power as well as popular translinear circuit scheme of Second generation current controlled current conveyor-CCCII has been taken as an active element to implement the proposed square wave generator. CCCII inhibits promising features like availability of three mutually independently and electronically adjustable parameters corresponding transconductance (gm), intrinsic resistance (r) of the current input terminal and current gain between two terminals) that are very prevalent for control applications accepted currently. The operating frequency of the proposed model has been analyzed with respect to the passive components present there, with no exposure of output signals to the thermal voltage (VT). Electrical/Device properties (like Noise, Threshold, area etc.) of the proposed circuit have also been discussed in this work. The simulation work was carried out on Synopsis Hspice tool (v-2008.03) from Avant. Satisfying results with anticipation of theoretical and simulated results, including precision (consistency assessment) with Pareto analysis (Ist order Best Test flavored by Decision making analysis) were observed during the study. The 45 nm BSIM CMOS modelling parameters were adopted to prove the theory. The elementary purpose of using such parameters is to maximize the circuit drive and lowering the leakage current. Another purpose of using these modelling parameters is to enhance the realization of the proposed circuit in the form of chip die and further get it fabricated in custom Integrated circuit (IC) form, from a Standard local foundry. Maximum power consumption of the circuit is 600 μW, with ± 1 V rail to rail operating voltages.

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CRAFTING A LOW-POWER, HIGH-PRECISION APPROXIMATE MULTIPLIER WITH ADAPTABLE TRUNCATION CAPABILITIES

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ABSTRACT

Multipliers are among the most critical arithmetic functional units in many applications such as digital signal processing (DSP) and multimedia processing. These applications often require numerous multiplications, leading to significant power consumption. High power consumption presents a challenge, particularly for mobile devices. One way to reduce the power consumption of a multiplier is to approximate multiplication if the targeted applications allow for error tolerance. For such applications, employing an approximate multiplier is an emerging method to reduce critical path delay and power consumption. An approximate multiplier can trade off accuracy for lower energy consumption and higher performance. In this paper, we propose an approximate 4-2 compressor with high accuracy, along with an adjustable approximate multiplier that dynamically truncates partial products to achieve variable accuracy requirements. Additionally, we introduce a simple error compensation circuit to reduce error distance. The proposed approximate multiplier can adjust accuracy and power consumption for multiplications at run-time based on user requirements. Moreover, we demonstrate the suitability and reconfigurability of our proposed multiplier in Cadence Virtuoso to meet different requirements at each layer.

SYNTHESIS AND SIMULATION OF DIGITAL ALARM CLOCK BY USING VERILOG

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ABSTRACT

This project presents the design of a digital alarm clock running at a clock frequency of 256 Hz. In this project, we will focus on block-level architecture and develop RTL code for the same. The design is developed using RTL using Verilog HDL based on the IEEE standards and also verified using Testbench using Verilog HDL code. The main part of the design is to take the BCD key as an input and with the support of control inputs like alarm button, time button we can set the alarm time and current time. Then with the help of a stopwatch mode, we can make the clock run faster. The output of this project is a sound alarm which is asserted based on current time and alarm time values. Apart from this, the time values are displayed in LCD format. In this project, you will explore how to implement timers using counters and implement the time-out state of the clock.

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DESIGN OF VGA CONTROLLER FOR THE APPLICATION OF SCREEN SAVER

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ABSTRACT

This project aims to design a VGA controller for the screen saver application and implement it on a Spartan3 FPGA kit. A video adapter provides the interface between the computer and the monitor. VGA (Video Graphics Adapter) is still used to refer to a baseline graphics display capability supported by virtually every video adapter on the market today. The project requires to design of a VGA controller to drive a VGA display with 640 x 480 resolutions and to display the moving geometric objects.CRT-based VGA displays use amplitude-modulated, moving electron beams to display information on a phosphor-coated screen. Electron beams transverse the display surface in a raster pattern, horizontally from left to right and vertically from top to bottom. Information is only displayed when the beam is moving in the forward direction i.e. left to right and top to bottom. Much of the potential display time is therefore lost in blanking periods when the beam is reset and stabilized to begin a new horizontal or vertical display pass. The size of the beams, the frequency at which the beam traces across the display, and the frequency at which the electron beam is modulated determine the display resolution.

MAXIMIZING SOLAR ENERGY UTILIZATION -TRENDS AND INNOVATIONS IN INVERTER TECHNOLOGY

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ABSTRACT

This paper deals into the advances in solar power inverters, focusing on power electronic packaging and the integration of functional and packaging elements. Efficiency, losses, mean time between failures (MTBF), and cost are critical indicators in inverter technology. High integration levels correlate with increased reliability, extended lifespan, and reduced costs. The paper examines the current state and trends in inverter design, emphasizing higher functional and packaging integration. Various generations of medium power inverters are analyzed based on their integration levels, described through different indicators.

Keywords: IGBT, Micro-Controller, Mean time between failures, Maximum power point tracking

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@1568Integrating Deep Learning with Model Predictive Control for Enhanced Torque estimation in Permanent Magnet Synchronous Motors

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ABSTRACT

Precise torque control is vital for the optimal performance of Permanent Magnet Synchronous Motors (PMSM) in various industries. Traditional Model Predictive Control (MPC) methods encounter limitations due to inaccurate motor models, leading to performance degradation from real-world complexities, and high computational demands, which hinder real-time implementation. Furthermore, precise torque control often necessitates mechanical sensors for rotor speed and position, increasing costs and potential failure points. This paper proposes a novel approach that integrates deep learning with MPC for PMSM to achieve highly accurate torque estimation, essential for rotor position balancing. The method leverages deep learning's capability to learn complex relationships from data. The deep learning model uses d-q axis currents, voltages, and rotor angleas inputs, eliminating the need for complex motor parameter identification and reducing inaccuracies. The model predicts the electromagnetic torque generated by the motor. This integration enables the MPC strategy to adapt to system variations and uncertainties without requiring a highly accurate physical model. In essence, deep learning allows the control system to learn the motor's behaviour directly from data, resulting in more precise torque control and improved rotor position balancing.

Keywords: Model Predictive Control (MPC), Permanent Magnet Synchronous Motors (PMSM), Deep learning.

POWER QUALITY IN MICROGRIDS: A CRITICAL EXAMINATION OF PRINCIPLES, GUIDELINES, AND CASE STUDIES

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ABSTRACT

In recent years, the integration of renewable energy sources into the power grid has emerged as a crucial area of research. A possible solution for integrating scattered generation and enabling the broad use of grid-connected renewable energy is microgrid technology. It can be difficult to guarantee adequate power quality (PQ) in microgrids, nevertheless. To achieve energy efficiency and ensure that equipment is operating properly, high PQ is essential. This thorough research article provides an overview of PQ problems in microgrids, including the main characteristics of the many kinds of PQ disturbances and the most pertinent PQ standards. It also offers a thorough case study examination of published studies on PQ analysis of systems based on renewable energy and microgrids. Each case study's main conclusions and the methodology used for the inquiry are highlighted. The report delves further into the various methodologies and frameworks utilized in these investigations to evaluate PQ concerns. Energy storage systems, electric cars, solar and wind systems, and a wide range of microgrid systems with different topologies, sizes, and configurations are discussed. Overall, the study highlights how crucial it is to keep microgrid PQ high and offers scholars and practitioners who are interested in this subject a useful resource.

INDEX TERMS: Distributed generation, converter-based resources, microgrid, photovoltaics, power electronics, power quality, renewable energy sources, and wind turbine.

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USING IOT FOR POLLUTANT DETECTION IN AQUATIC ENVIRONMENTS

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ABSTRACT

The primary goal of this project is to use Internet of Things (IoT) devices like Node MCU to continuously monitor water quality. Water quality monitoring sensor, cloud and Web UI, IOT Node MCU ESP8266, temperature, PH, turbidity, and TDS sensors, Arduino, fast alerts, and buzzer are all used in this system. Water pollution is a major environmental problem in India. In India, the primary source of contaminated water is untreated sewage. The majority of Indian lakes, rivers, and surface waterways are contaminated by unauthorized small-scale industrial activity. In traditional systems, the monitoring process entails physically collecting water samples from multiple locations, which are then tested and analyzed in a laboratory. This approach is ineffective since it requires a lot of work, takes a while, and produces effects gradually. Rather, use wireless sensor networks to develop a low-cost real-time water monitoring system (WSN). A built-in Wi-Fi module on the Node MCU allows for internet connectivity and transmits sensor data measurements to the systems. Numerous sensors are used to monitor a range of parameters, including temperature, water level, turbidity, TDS, and Ph value, in order to assess the quality of the water from aquatic bodies. The data are kept in the cloud. If any contaminated water is discovered, a warning message is delivered to the PWD department and the master kit via WSN for monitoring.

Keywords: DHT11; WSN; NODEMCU-ESP8266

DEVELOPMENT OF AN 8-BIT VEDIC MULTIPLIER WITH HIGH PERFORMANCE

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ABSTRACT

The multiplier is a core microprocessor functional block that is frequently utilized in scientific computations. Therefore, it is crucial to create quick and low-power binary multipliers, especially for digital signal processing. The Urdhva- Tiryakbyham sutra of Vedic multiplication is implemented by an 8-bit multiplier architecture that is quick and low-power, as described in this project. Tiryakbyham denotes multiplication crosswise, and Urdhava denotes multiplication vertically. The basic building sources of this Vedic multiplier are adders. The Verilog HDL is used to generate these adders. Verilog HDL and Xilinx ISE are used for the synthesis and implementation of the design. The Project is exploring the speed- related advantages of Vedic multiplication.

Index terms: Tiryakbyham, Urdhva, and VHDL

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ASSESSMENT OF THE DECOY'S LOCATION FOR MISSILE RADAR'S FUNCTIONAL DECEPTION

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ABSTRACT

Soft kill options are more elegant and less costly in a military engagement situation than hard kill choices like missile interception. The best location for an active decoy that fires in the shape of a cartridge from the target's platform is documented in this project. Different jammer and radar characteristics are tested in order to successfully lure the missile away. Computer simulations are used to demonstrate that ordinary monopulse radars can achieve miss distances of at least half a kilometer. The most dangerous threats are missile ones, and valuable assets like ships and land-based installations are now the most easily targeted. To fend off single or multiple missile strikes, using terminal phase homing radar While hard kill choices like missile interception can be used in a military engagement scenario, soft death options are more elegant and less costly. This project reports on the best location for an active decoy that fires in the shape of a cartridge from the target's platform. Different jammer and radar settings are tested to successfully entice the missile to flee. Through computer simulations, miss distances of at least half a kilometer are demonstrated to be achievable for standard monopulse radars. The greatest threat comes from missiles, and the most vulnerable targets these days are valuable platforms like ships and land-based installations. Using radar terminal phase homing, to counter single or multiple missile attacks

DETECTION OF ROAD CRACKS USING VIDEO IMAGE PROCESSING

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ABSTRACT

The lifespan of a road is shortened by surface deterioration. In this study, pavement detection and recognition based on video pictures are examined to enhance the efficiency of road maintenance and management. To create a library of road surface conditions, we first gather a large number of photos of the road surface in each of the three circumstances—transverse crack, longitudinal crack, and turtle crack—separately. Second, use gray, gray transform, and picture smoothing to address the road-damaged image. Next, deal with the crack image and projection to determine the crack category using the mathematical morphological approach. Lastly, create the MATLAB-based pavement crack recognition software. The results demonstrate that this identification system can correctly identify the category of fracture by choosing the pavement samples for the experiment.

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USING IOT FOR VERTICAL AGRICULTURE

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ABSTRACT

In order to maximize the functioning of energy systems inside smart grids, the primary goal of the project is to develop new mathematical optimization models for greenhouses and a novel hierarchical control approach that can be easily integrated into energy hub management systems. In vertical farming, we keep an eye on the system's temperature, humidity, and soil moisture content. In particular, the indoor temperature and humidity levels should be maintained within reasonable bounds. The goal is to minimize overall energy expenditures and demand charges while taking critical greenhouse characteristics into account. Benefits of vertical farming are numerous. With the use of the Internet of Things, a vertical farm may grow an abundance of superior crops without requiring the usage of pesticides, fertilizers, sunshine, soil, herbicides, or human labor. There are numerous crop cycles in a year for IoT-connected vertical farms. There are just three on traditional farms. Compared to conventional farming, this kind of farming produces no runoff and consumes 95% less water. More efficient than any other agricultural method, vertical farming also has a lower environmental impact. The primary goal of this project is to develop a vertical farming monitoring system that will aid in monitoring the physical state of crops. This system will use a variety of sensors to identify the physical conditions that exist right now. The data will then be sent, either digitally or analogically, to a Raspberry Pi microcontroller. This system uses sensors for temperature, humidity, and soil moisture; the condition of each sensor is shown on an LCD. fter that, the controller will process the data and upload it to the Thingspeak Cloud. Additionally, the system offers a rudimentary remote capability that allows users to switch the watering system on and off. In order to facilitate understanding, the web-based application will also be made to analyze and present data collected in the form of graphs, charts, or figures. The yield and quality of crops are predicted to rise sharply with the improvements made to the vertical farming culture.

Keywords: cloud data storage, sensor monitoring, and vertical farming.

DCT REALIZATION USING THE CORDIC ALGORITHM

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ABSTRACT

Many academics are finding it difficult to design hardware architectures for trigonometric and exponential computations that are less complex. The last ten years have seen the development of the CORDIC algorithm, which offers effective trigonometric, exponential, and logarithmic calculation capabilities. The CORDIC algorithm is an appropriate computing technology to handle multimedia applications since they require high speed and parallel data crunching. The goal of this study was to demonstrate a hardware-efficient discrete cosine transform (DCT) algorithm. Verilog HDL has been used to implement the suggested method and capture its design parameters, including area and speed. The goal of the suggested approach is a higher throughput than the current one.

Keywords: Verilog, Discrete Cosine Transform (DCT), hardware efficiency, and CORDIC algorithm.

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HARDWARE DESCRIPTION LANGUAGE-BASED MODULAR DESIGN APPROACH FOR THE IMPLEMENTATION OF GENERAL PURPOSE VENDING MACHINE

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ABSTRACT

This project investigates the use of modular design to build a multipurpose vending machine that can dispense different goods. For control and implementation, the suggested system makes use of a hardware description language (HDL), most especially Verilog HDL. This covers the control methods, applicable architecture, and effective module implementations. Because they provide easy access to snacks, drinks, and other goods, vending machines are essential to modern civilization. Traditionally, choices are made by pushing tactile or capacitive buttons. Nonetheless, new developments have allowed vending machines to accept electronic goods like iPods and digital cameras. By using a modular design approach and HDL for effective control and management, our project seeks to improve the practical implementation of such devices. Using this method, we develop an adaptable vending machine architecture that can handle various product kinds. Our system may dispense a variety of items, including nibbles, hot beverages, coffee, and desserts. The modular design also makes scaling, updates, and maintenance simple.

Keywords: Hardware description language (HDL), vending machine, and Verilog.

THE CREATION OF A SOLAR-POWERED, MULTIPURPOSE AGRICULTURAL ROBOT

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ABSTRACT

Agriculture has served as the economy's backbone and will continue to do so. Agriculture is the science and practice of farming, which includes soil cultivation, crop production, and livestock management. In general, crop cultivation consists of several procedures such as plowing, seed sowing, cutting, and watering. Farmers must use a variety of agricultural equipment and labor to complete these steps; our goal is to combine all of the individual tools to provide farmers with multipurpose equipment that implements all scientific farming techniques and specifications, suitable for all types of seed to seed cultivation at the lowest possible cost. This versatile agricultural machine is wirelessly remote controlled and was designed and built to be used in agricultural activities. Controlling the robot requires some form of communication. One of the communication methods is wireless Bluetooth connectivity. HC-05 and HC-06 are Bluetooth modules used to control the robot via smartphone. The Bluetooth program is simple to use, and data exchange between robots and smartphones occurs in a methodical manner. The created robot is intended for agricultural applications such as plowing, seed sowing, water spraying, and grass cutting. This equipment works in both directions; when driven forward, it ploughs the land using a furrow. The motor is directly connected to the shaft via holes. When we push the agriculture machine backward, we may take the plow up from the ground, and the pump attached to the front shaft will begin pumping water from the tank and sprinkle it over the field. Index Terms - Agricultural, Multipurpose Robot, ploughing, seed sowing, grass cutting, water spraying.

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REAL-TIME WIRELESS SYSTEM FOR SOLIDER SURVEILLANCE

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ABSTRACT

The paper discusses the design, building, and operation of the Real Time Wireless system for Solider Security. Army personnel serve a significant and vital function in defending a country. Every year, soldiers become separated or injured, making search and rescue efforts time-consuming. This work describes a WSN-based environmental and health monitoring approach in which sensor data is processed using a robust and reliable algorithm implemented in the controller. These processed data are then delivered to the base station using low-cost, low-power, and secure communication lines provided by an RF network infrastructure, rather than cellular networks, which are either unavailable or do not allow data transmission in warzones or isolated locations. We measure environmental aspects like temperature, humidity, air pressure, and air quality; physical factors like motion, posture, and geographic location; and health indicators like ECG (electrocardiogram), blood oxygen level, and body temperature. Furthermore, a camera and microphone are employed to monitor any bad circumstance involving a soldier. The system's goal is to minimize response time for crises by utilizing embedded systems and WBASN, while remaining power efficient.

Keywords: NODEMCU-ESP8266, WSN, ECG, DHT11.

DEEP LEARNING MODELS-BASED AUTOMATED KIDNEY STONE DETECTION SYSTEM.

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ABSTRACT

Kidney stone illness (nephrolithiasis) is a common urological condition with a high recurrence rate. This disease is a progressive sickness that causes kidney damage, resulting in a permanent and undone problem. As a result, it is critical to diagnose kidney stone illness before serious harm occurs. Kidney disease can be successfully treated if the stone problem is detected early. As a result, stone detection is critical not only for renal disease treatment, but also for the management of recurring stones. Hence, early identification of kidney stone is vital. Ultrasound imaging is one of the imaging modalities used to diagnose kidney abnormalities, which might include changes in shape and position, as well as swelling of the limb. During surgical procedures, it is critical to determine the real and accurate position of the kidney stone. Detecting kidney stones via ultrasonic imaging is a difficult undertaking due to their low contrast and speckle noise. This problem is overcome by utilizing appropriate image processing techniques. The ultrasound image is initially preprocessed to remove speckle noise using the image restoration method. The restored image is smoothed using a Gabor filter, and the subsequent image is improved with histogram equalization. To detect the stone region, the preprocessed image is segmented using level sets. The segmentation procedure is used twice to achieve better results: once to segment the kidney section and again to segment the stone portion. Results are examined using MLP-BP ANN algorithms for categorization and type of stone.

Keywords: ultrasound imaging, image processing, picture segmentation, artificial neural networks.

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HUMAN IDENTITY RECOGNITION USING THE IRIS

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ABSTRACT

Iris recognition is one of the most used biometric identification technologies, and it is widely employed in a variety of fields. Many deep learning algorithms have recently been applied in biometric recognition due to its advantages such as autonomous learning, high accuracy, and excellent generalization capability. The deep convolutional neural network (CNN) is a popular image processing approach in many fields, although it has low anti-noise capacity and is quickly influenced by minor disturbances. CNN also requires a huge number of samples for training purposes. The recently developed capsule network not only has good recognition accuracy in classification tasks, but it can also learn part-whole correlations, boosting the model's robustness. It can also be trained with a small number of samples. In this paper, a deep learning strategy based on the capsule network architecture for iris detection is proposed. The network's structural detail is altered, and a modified routing strategy based on dynamic routing between two capsule layers is presented to adapt this technique to iris recognition. Migration learning enables deep learning even when the number of samples is low. As a result, three cutting-edge pretrained models—VGG16, InceptionV3, and ResNet50—are introduced. The three networks are separated into subnetwork topologies based on the number of major constituent blocks. In the capsule network, they are employed as the convolutional component to extract primary features, rather than a single convolutional layer. Our investigations were conducted on three iris. datasets, datasets, JluIrisV3.1, JluIrisV4, and CASIA-V4 Lamp, to analyze the performance of different network structures. he proposed solutions are tested in simulated strong and weak light situations, demonstrating that networks with capsule architecture are more robust than those without.

Keywords: iris recognition, deep learning, capsule network, and transfer learning.

DESIGN AND ANALYSIS OF A 7.5 GHZ MICROSTRIP PATCH ANTENNA FOR X-BAND VSAT APPLICATION

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ABSTRACT

An antenna is a necessary component in radio broadcasting domains such as television, two-way radio, radar, cell phones, and so on. Microstrip patch antennas have a relatively flat profile and can be integrated onto the surfaces of consumer products, aircraft, and missiles. There is a growing demand for smaller and cost-effective antennas for both business and personal use. The proposed approach uses a tiny strip patch antenna that operates at 7.5GHz. The frequency is selected based on the x-band frequency, which is suitable for satellite communication. The designs are created using Ansys HFSS software. The antenna is made of RT/duroid 5880 substrate with a dielectric constant of r=2.2.

Keywords: Microstrip Patch Antenna, HFSS, VSAT.

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IDENTIFYING COUNTERFEIT CURRENCY USING IMAGE PROCESSING

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ABSTRACT
Counterfeiting of paper currency is a big problem around the world. This has had a considerable impact on nearly every country, and it is now a major concern. The major goal of this inquiry is to find Indian paper money. We downloaded a collection of money notes from the internet, which comprised both legitimate and counterfeit notes of various denominations. Using a feature extraction approach on the front of the money note to detect whether it is real or counterfeit. In this study, we used the Support Vector Machine (SVM) technique to evaluate whether a money note is real or not. The MATLAB image processing package was utilized. Image processing is a technique that improves visual information in Abstract: Counterfeiting of paper currency is a big problem around the world. This has had a considerable impact on nearly every country, and it is now a major concern. The major goal of this inquiry is to find Indian paper money. We downloaded a collection of money notes from the internet, which comprised both legitimate and counterfeit notes of various denominations. Using a feature extraction approach on the front of the money note to detect whether it is real or counterfeit. In this study, we used the Support Vector Machine (SVM) technique to evaluate whether a money note is real or not. The MATLAB image processing package was utilized. Image processing is a technique that improves visual information in perception. This is an automated system that sorts a collection of currencies using classifiers into specified groups.

Index Terms: SVM (Support Vector Machine), Brisk Features, Image Processing, Denomination, Currency Identification

SOIL PREDICTION, CROP SUGGESTION, AND DETECTION OF LEAF DISEASE USING MACHINE LEARNING METHODS

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ABSTRACT:
India is the land of agriculture, ranking among the top three global producers of numerous crops. The Indian farmer is at the center of the agricultural sector, but most Indian farmers remain at the bottom of the social hierarchy. Furthermore, farmers struggle to determine which crop is best suited and profitable for their soil, despite the few technical options available today, due to the variance in soil types between geographical regions. This study provides a crop recommendation system that employs a machine learning model to forecast the best crop to grow by considering a variety of criteria such as region, soil type, yield, selling price, and so on. Agriculture is the backbone of India and plays a crucial part in the Indian economy by producing a specific percentage of domestic products to maintain food security. However, food production and prediction are currently being depleted owing to unnatural climatic changes, which will have a negative impact on farmers' economies by resulting in a low yield and will also cause farmers to become less comfortable with anticipating future crops. Agriculture's productivity is largely influenced by economic conditions. Diseases in plants are more widespread in agriculture, and disease detection in plants has grown more practical as a result of the aforementioned reasons. Plant disease detection is becoming increasingly important in shriveling crops across a wide range of areas. Farmers face substantial challenges when transitioning from one disease management strategy to another. We can discover or recognize tomato leaf diseases for surveillance and monitoring, which is the typical strategy for identification. If effective control is not implemented, the plants' quality and productivity would suffer significantly.

Keywords: Random Forest Classifier, Decision Tree Classifier, SVC, Logistic Regression, Gaussian Neural Network, and MLP Classifier. Crop: Random Forest Classifier, Decision Tree Classifier, SVC, AdaBoost, and XG

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IMAGE ENCRYPTION AND DECRYPTION USING CHAOS AND DNA ALGORITHMS

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ABSTRACT

In recent years, the demand for secure image transmission over public networks has grown dramatically. To meet this requirement, this study introduces a novel technique to image encryption and decryption based on chaotic and DNA algorithms. The suggested method takes advantage of the chaotic qualities of chaotic maps to generate pseudo-random encryption sequences, while DNA encoding techniques are used to improve the encryption process's security and robustness. During the encryption process, the original image is turned into a chaotic domain using a chaotic map before being further encrypted with DNA-based algorithms. The decryption technique employs the reverse transformation, in which the encrypted image is decoded using the same DNA encoding strategy and chaotic map to recover the original image. The experimental results show the effectiveness and The suggested approach is secure against a variety of cryptographic attacks, such as statistical analysis and brute force assaults. Furthermore, the approach has significant computational efficiency, making it ideal for real-time image encryption applications. Overall, the suggested approach represents a potential alternative for secure image communication in applications that need high degrees of confidentiality and fidelity. Future research directions could involve investigating optimization approaches to improve the performance and scalability of the suggested technology. This abstract summarizes the model's objectives, methods, results, and potential implications in a clear manner for readers.

Index Terms: Encryption, Decryption, Cryptography, Chaotic, DNA Encoding.

SMART BLOOD BANK SYSTEM BASED ON IOT

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ABSTRACT

A blood bank is the unit in charge of administering and managing blood requisition and distribution. The primary goals of blood banks are to provide blood to patients while minimizing blood transfusion errors. Blood is a crucial medical supply, hence it should be well regulated. Because blood bank administration consists of a number of manual tasks, it will be challenging for blood banks to provide a high level of precision, reliability, and automation in the blood storage and transfusion procedures. The proposed system is divided into three segments. The first segment consists of a temperature sensor, IR sensor nodes mounted in the rack of the blood bank, and a GSM module for sending blood requests to donors and blood banks are all connected via Raspberry Pi Pico. The second part has a wi-fi module for data transfer to the server, while the third segment displays the status of available blood stock. All real-time statuses relating to the blood bank's available blood stock are shown on the website, allowing blood seekers to obtain blood from their local blood bank.

Keywords: blood donor, LCD display, infrared sensors, and automated blood bank.

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INTRUSION DETECTION SYSTEM USING REGULATED PATROL ROBOT FOR APARTMENTS

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ABSTRACT

The primary goal of this project is to create a robot capable of conducting domestic surveillance. Nowadays, robots play an important part in our daily activities, eliminating human labour and error. Robots can be controlled manually or automatically, depending on the requirements. This robot's objective is to walk around and offer audio and video information from the provided environment, which it then sends to the user. In this project, one may operate the robot with the assistance of a smartphone or laptop through Internet of Things (IoT), and also get the live streaming of footage both during the day and at night with the help of a wireless camera from the robot. The robot can be operated manually or automatically using the Arduino microcontroller. This robot also has a variety of sensors that collect data and communicate it to the Arduino microcontroller, which controls the robot's activity. Along with the live streaming video output, the user may determine the existence of object detectors. Thus, surveillance can be undertaken. Further advancements in our project will enable surveillance even in defense sectors.

Keywords: Node MCU, smart camera, ESP-8266 microcontroller, motordriver.

ROBA MULTIPLIER ENABLES FAST AND ENERGY-EFFICIENT DSP APPLICATIONS

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ABSTRACT

The major goal of this study is to present an approximate multiplier that is both fast and energy efficient. The method is to round the operands to the nearest exponent of two. This way, the machine-intensive element of the multiplication is eliminated, increasing speed and energy efficiency. The effectiveness of the planned multiplier factor is assessed by comparing its performance to that of some approximation and correct multipliers with varied design characteristics. The proposed method is suitable for both signed and unsigned multiplications. We offer three hardware implementations of the approximation multiplier: one for unsigned and two for signed operations. The technique works for both signed and unsigned multiplications. We offer three hardware implementations of the approximation multiplier: one for unsigned and two for signed operations. To produce imprecise multiplication, simple addition and shift operations are performed on rounded and original input operands. Approximate multipliers perform better in terms of speed, power, and area than exact multipliers. The RoBA multiplier parameters for use in DSP voice or image smoothing applications. The FIR Filter's convolution process is extended with a RoBA multiplier.

Keywords: VLSI, DSP, XILINX Software.

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MACHINE LEARNING FOR THE REAL-TIME PREDICTION OF HUMAN GENDER AND AGE

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ABSTRACT
Using facial analysis, substantial efforts have been made in the areas of gender recognition and age assessment in recent years. Advanced pattern recognition systems can decipher a variety of information from human faces, including age and gender. This aspect of computer vision is essential for automating face detection and gathering demographic information. These technologies enable systems to anticipate age and gender with accuracy, improving a range of applications from security to customized services. The automated study and interpretation of facial traits is made possible by pattern recognition in computer vision, which is essential to these developments. With the use of technology that imitates human perception, machines are now able to precisely recognize and categorize a variety of face features. The ability of contemporary artificial intelligence is demonstrated by the automatic facial detection and subsequent analysis to ascertain age and gender. These systems becoming more precise and dependable over time through ongoing learning and development. This study pushes the limits of real-time facial analysis by utilizing live face captures to predict age and gender. The system's ability to dynamically determine an individual's age and gender through the capture of live photos renders it highly relevant in a variety of real-world circumstances. This covers industries where real-time data processing is essential, such as social networking, retail, and security. The system's capacity to provide predictions instantaneously guarantees both accuracy and efficiency while managing substantial amounts of data.

Keywords: Live face captures, intelligence, automated analysis, facial analysis, human face, and pattern recognition.

SYSTEM FOR MEASURING VEHICLE DENSITY IN TRAFFIC

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ABSTRACT
Counting the number of automobiles that travel on highways these days requires human labor. It is suggested that the automated vehicle density measurement system replace the requirement for human labor. Using segmentation with initial background subtraction and the morphological operator to identify salient regions in the series of video frames, this system counts and detects automobiles in surveillance footage. It is possible to maintain effective traffic management using this technique. After the camera records a video, this system uses image processing algorithms to identify automobiles in the footage. This method uses two main techniques: morphological processing and background subtraction. Because of their extensive range of uses, morphological processing and background subtraction are significant applications in image processing. Context To make the things in the picture stand out, subtract is utilized. Morphological operations are used to both reduce noise and modify images so that objects may be detected in them. One powerful scientific tool, MATLAB (Matrix Laboratory), is used to simulate this technique.

Index Terms: MATLAB, density, segmentation, morphological operations, image processing.

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ARCHITECTURE FOR A 4–16 SRAM DECODER WITH HIGH PERFORMANCE, LOW POWER, AND SPACE EFFICIENCY

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ABSTRACT
A novel approach to designing CMOS decoder circuits was put forth in this paper. The following design solutions have been merged to reduce power consumption and improve design performance: transmission gate logic, dual-value logic, pass-gate transistor, and CMOS logic, as well as the mixed-logic design technique. In the publication, two new schematics that were used to develop 2-4 decoders are described. The first method reduces the size and power consumption of digital VLSI ICs by designing a circuit based on 14-FETs. Although it uses more power than the 14-FET based solution, the 15-FET based circuit was also suggested as a way to improve the performance of digital integrated circuits. The subsequent, more sophisticated digital decoders have been created using the aforementioned cells: 14-FET inversion-based decoder, inverting 15-FET based decoder, noninverting and inverting 4-16 decoders. In comparison to the ones being utilized in digital designs now, all of the aforementioned suggested solutions have demonstrated improved performance, lower power consumption, and less necessary silicon space. Tanner S-edit has been used to assess the suggested solutions.

Keywords: decoder, high performance, low power VLSI design, random access memory, and area efficiency.

BINOCULAR DISPARITY-BASED AUTOMATIC IDENTIFICATION OF 3D QUALITY ISSUES IN STEREOSCOPIC VIDEOS

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ABSTRACT
As 3D video content becomes more widely available, mostly through 3D cinema but also through 3D television, there are recognized 3D video quality difficulties that could interfere with the human visual system and negatively affect the 3D watching experience. In this research, we offer four methods that detect unsettling stereoscopic phenomena: stereoscopic window violations (SWV), bent window effects, UFO objects, and depth jump cuts on stereo films. These algorithms take advantage of the available stereo disparity information. The suggested algorithms identify these problems and then classify them according to how much strain they put on the viewer's visual system. A parameter sensitivity research, quantitative experimental results on a specially created video dataset, qualitative representative samples, and remarks on the computational complexity of the methods are included. Abstract: As 3D video content becomes more widely available, mostly through 3D cinema but also through 3D television, there are recognized 3D video quality difficulties that could interfere with the human visual system and negatively affect the 3D watching experience. In this research, we offer four methods that detect unsettling stereoscopic phenomena: stereoscopic window violations (SWV), bent window effects, UFO objects, and depth jump cuts on stereo films. These algorithms take advantage of the available stereo disparity information. The suggested algorithms identify these problems and then classify them according to how much strain they put on the viewer's visual system. A parameter sensitivity research, quantitative experimental results on a specially created video dataset, qualitative representative samples, and remarks on the computational complexity of the methods are included in order to assess the accuracy and performance of stereoscopic quality defect detection.

Index Terms—Visual discomfort, 3D quality, stereoscopic video, binocular disparity

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USING VEDIC MATHEMATICS, A HIGH PERFORMANCE 64-BIT ALU IS DESIGNED

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ABSTRACT

All processor cores are going to integrate into a single chip in the modern day due to the increasing demand for better processor performance in handling sophisticated algorithms and multifunctioning. despite the fact that the processor's workload is increasing. To mitigate this, coprocessors—which carry out numerical operations such as addition, multiplication, DSP applications, and so forth—should be made available to support the main processor's tasks. The coprocessors' speed will determine the processor's speed. Vedic mathematics is an old kind of mathematics with a special method of 16 formulas to quickly find solutions for a variety of applications. The design of a 64-bit ALU, inspired by Urdhva Tiryakbhyam and other Vedic Sutras, is described in detail in the paper. The findings demonstrate the applicability of the Vedic sutras for multiplication operations. Vedic sutras make the implemented arithmetic module the most efficient in terms of delay reduction. Here, we're utilizing Verilog HDL to design an ALU based on these calculations, which is then synthesized in Xilinx ISE, where we've discovered improved performance.

OFDM MODELING AND SIMULATION AS WELL AS THE APPLICATION OF PAPR REDUCTION STRATEGIES

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ABSTRACT

The technique known as orthogonal frequency division multiplexing, or OFDM, uses big subcarriers that are orthogonal to one another. The idea of OFDM is to divide high-bit-rate serial data into lower-bit-rate parallel data. The advantages of OFDM include intercell interference and straightforward equalization. Despite being the most widely used efficient transmission method, OFDM has a disadvantage due to its peak to average power ratio (PAPR) mode of transmission, which increases the complexity of both digital to analog and analog to digital converters and decreases the efficiency of RF amplifiers. Amplitude clipping, which specifies that an amplitude threshold value is set in this procedure and any sub-carrier having amplitude more than that, is one of the PAPR reduction strategies order to extract a lower PAPR score, any sub-carrier with amplitude greater than that value is either clipped or filtered. In a Partial Transmission Order transmitting only a portion of the signal's total amount of data, which is covered by different subcarriers. Particular Mapping In this case, a sufficient number of distinct data blocks that convey the same information as the original data blocks are chosen. It is appropriate for transmission when data blocks with low PAPR values are chosen. Based on the results, it can be concluded that the suggested technique without introducing distortion or requiring extra optimization algorithms can considerably improve the performance of OFDM systems by lowering the high PAPR. Overall, this project improves the performance of OFDM-based wireless communication systems by providing a workable and effective solution to the high PAPR problem.

Keywords: Amplitude clipping, PAPR, selective mapping, partial transmit sequence

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DESIGN OF A THREE-OPERAND BINARY ADDER'S HIGH-SPEED VLSI ARCHITECTURE

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ABSTRACT

The primary goal in all electrical devices, the arithmetic and logic unit has been the most important. As of late, an arithmetic and logic unit's significance has been attributed to its ability to perform efficient algorithmic operations, including addition and multiplication. The fundamental functional unit used in many cryptography and pseudorandom bit generator (PRBG) methods for modular arithmetic is the three-operand binary adder. Ladner-Fischer adder (LFA), Han-Carlson adder (HCA), and carry save adder (CS3A) are the two most used methods for performing three-operand addition. Evaluation of the adder's performance Furthermore, the three-operand adder that is suggested greatly lowers the critical path time. Thus, a new high-speed adder architecture is suggested that does the three-operand task by first performing pre-compute bitwise addition and then employing the KOGGE-STONE adder. Summary: The primary goal In all electrical devices, the arithmetic and logic unit has been the most important. As of late, an arithmetic and logic unit's significance has been attributed to its ability to perform efficient algorithmic operations, including addition and multiplication. The fundamental functional unit used in many cryptography and pseudorandom bit generator (PRBG) methods for modular arithmetic is the three-operand binary adder. Ladner-Fischer adder (LFA), Han-Carlson adder (HCA), and carry save adder (CS3A) are the two most used methods for performing three-operand addition. Evaluation of the adder's performance Furthermore, the three-operand adder that is suggested greatly lowers the critical path time. Therefore, a new high-speed adder architecture that significantly lowers adder latency and consumes significantly less power is proposed. It uses pre-compute bitwise addition followed by KOGGE-STONE adder to accomplish three-operand binary addition.

Index Terms: FPGA, VLSI, Verilog, XILINX ISE

MELANOMA SKIN CANCER DETECTION USING DEEP LEARNING

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ABSTRACT

This project's main goal is to create a solid deep learning model that can recognize melanoma lesions from dermoscopic pictures with accuracy. Skin cancer that is extremely treatable if caught in its early stages is called melanoma. Yet even with professional supervision, detecting it is difficult. In comparison to current methods, this research aims to improve the efficiency and reliability of melanoma detection through the use of deep learning techniques. The general strategy is to construct a network in two stages. The initial phase of the network aims to precisely identify the skin lesion from the thermoscopic pictures. A classification network is used in the second stage of the network to forecast if melanoma would be present in the sample. oth the U-NET and FCRN approaches were used during the network segmentation stage. We implemented the DRN architecture for the classification network. To improve the obtained results, learning rates were modified using the step-decay technique. The results obtained were enhanced by utilizing both binary cross-entropy and weighted binary cross-entropy, leading to increased detection accuracy. Because convolutional neural networks (CNNs) can automatically train hierarchical representations from picture data, they will be used for feature extraction and categorization. Standard measures including sensitivity, specificity, and area under the receiver operating characteristic curve (AUC-ROC) will be used to assess the model's performance. To demonstrate the efficacy of the suggested approach, comparison studies with currently used melanoma detection techniques will also be carried out.

Index Terms: deep learning techniques, fcrn techniques, dermoscopic.

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SPEECH SENTIMENT ANALYSIS EMPLOYING MULTI-LAYER PERCEPTRON

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ABSTRACT
One of the quickest and most natural ways for people to communicate with one other is through speech signals. Numerous researchers have created a variety of techniques to extract the emotions from the voice stream. Speech traits, in particular, are more helpful in distinguishing between distinct emotions, and their ambiguity makes it harder to discern emotions from a speaker's speech. Many datasets are available for speech emotions, speech modeling, and speech kinds that aid in identifying the type of speech. The categorization of speech emotions is a crucial step after feature extraction, and this study compares and reviews the various classifiers that are used to distinguish between emotions including sadness, neutrality, happiness, surprise, rage, and so on. The study also demonstrates how adding a deep neural network to an autonomous emotion recognition system improves its performance. Additionally, a variety of machine learning algorithms have been used to analyze the accuracy of speech emotion recognition in various languages.

Keywords: Multi-layer perceptrons, speech emotion recognition, machine learning, classification.

IDENTIFYING MEDICAL IMAGE FORGERIES FOR INTELLIGENT HEALTHCARE

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ABSTRACT
The primary goal of this system's development is to detect medical image fraud for the healthcare industry utilizing a revolutionary technique known as feature descriptor points and feature transform, noise map, and multi-resolution regression method. The healthcare industry has been transformed by next-generation network technologies like edge computing, cloud computing, and fifth generation (5G). The facilities in the healthcare industry have drastically improved recently. In an effort to increase user happiness, numerous new features have been implemented. With a variety of sensors, people may now check their emotions, heart rate, diabetes, voice abnormalities, and heartbeat without physically visiting a doctor. The healthcare industry is expanding, but in order to make the facility more private and secure, a few things need to be addressed. The development of new communication technologies has led to the addition of new features and amenities to the framework for smart healthcare. The facilities and features are designed to give customers smooth, user-friendly, accurate, and real-time healthcare services. Health is a delicate matter that needs to be handled with the highest security and care. This project used a noise map and a multi-resolution regression technique to offer a novel method for medical image forgery detection in the healthcare industry.

Index Terms: Multi-resolution regression filter, Noise map, feature transform, feature descriptor points

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IOT-BASED MOVABLE ROAD DIVIDER

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ABSTRACT
in general, road dividers are utilized to separate incoming and outgoing traffic on a road. This maintains the traffic flow. Typically, there are an equal number of lanes designated for inbound and outbound traffic. For instance, every city has an industrial or retail district where, during the morning or evening, traffic usually moves in one direction. Most of the time, the opposing side of the road divider is either unoccupied or seldom used. This applies to the busiest morning and evening times. This leads to underuse of available resources, traffic delays, and lost time for the owners of the cars. The goal of this project is to design an automated movable road divider mechanism that can change lanes, adding more lanes in the direction of traffic. The time and fuel savings that result from adding even an additional lane in the rush-hour direction will add up. The suggested smart application will also remove the need for human traffic coordination and intervention, allowing for the implementation of smarter traffic control throughout the entire city. Emergency vehicles and heavy traffic can both be alleviated with the use of an automated moving road barrier. IoT makes this possible.

Keywords: road divider, IoT, and traffic management.

A QUANTUM REVERSIBLE MULTIPLEXER WITH LOW COST AND EFFICIENCY FOR LOW POWER USES

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ABSTRACT
Low power architectures are becoming prominent in a variety of applications ranging from quantum computing to the Internet of Things. During processing incoming data, bit deletion occurs as a result of information loss in primitive combinational logic circuits, which wastes energy. Reversibility computations preserve input bits from output, hence mitigating information loss. The combinational circuits in the basic arithmetic and logic units are a major factor in determining the processor's performance. Reversibility design concepts are an emerging technology for ultra-low power applications. Reversible logic circuits provide quantum computing researchers a completely new avenue for advancement. In this paper, we provide a low power, energy-tolerant reversible multiplexer with the least amount of energy loss. additionally, the suggested multiplexer significantly lowers the quantum cost, trash outputs and ancillae.

Keywords: processor, reversibility, bit erasure, energy loss, and quantum computing.

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DESIGN, ANALYSIS, AND USE OF AN EFFECTIVE APPROXIMATE VEDIC MULTIPLIER IN IMAGE

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ABSTRACT

In the domain of error-tolerant applications, approximate computing has gained widespread recognition as a technique for creating energy-efficient arithmetic systems. The design and analysis of a 4-bit Urdhva Tiryagbhyam-based approximate Vedic multiplier (AVMT) are presented in this work. In terms of efficiency, this Vedic method—which involves both vertical and crosswise steps—performs better than conventional multiplication. With the help of AVM2, an approximate 2-bit multiplier (AVM2) is created, and an AVMT is suggested. Comparing the suggested architecture to existing traditional multipliers, it has a better propagation latency and uses less space. Compared to the identical Vedic multiplier, AVMT has a 12% boost in processing speed and an 11% decrease in area use. The suggested multiplier is incorporated into an image-blending program to evaluate its applicability in real-world situations. Based on the obtained results, it can be concluded that the system is appropriate for image processing applications that require error resilience, since it achieves an average Structural Similarity Index (SSIM) value of 0.91.

Index Terms: Image Blending, Approximate Computing, Vedic Multiplier

DEVELOPMENT OF A ROBOTIC ARM CONTROL MODEL FOR INDUSTRIAL USES

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ABSTRACT

The paper designs the device to support in industrial applications. Therefore, we present the research and development on the design of a robotic arm on 4-wheel robot that assists in picking up objects and moving them to a safe place in this paper. We divided it into parts, first one is manually identify the location of object. Second, the robot arm is placed on 4 wheel robot and it approach object using joystick control. The device with the goal of picking up and drop an object at any position. The paper consists of the block diagram design, the operating principle of the device, the results, and the development analysis.

RF AND IoT TECHNOLOGY-BASED INTELLIGENT SPEED BREAKER SYSTEM DESIGN FOR VEHICLES

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ABSTRACT

According to the paper, poor vision caused by wintertime fog or driving at night are the main reasons for traffic accidents in India. The main reason for these collisions is inadvertent ignorance of speed limiters, which can happen when a driver speeds too much or is unable to see them. The concept of an intelligent speed breaker system is presented in this study, which aids in the early detection of speed breakers to prevent such incidents. This device uses an RF module to alert the driver of the presence of a speed breaker nearby. If the driver does not act within the allotted time, the system will automatically lower the vehicle's speed. The GPS location (latitude and longitude) of a speed limiter can be transmitted to the cloud via the Internet of Things (IOT) and saved there for use in the future to prevent accidents.

Keywords: Transmitter, Receiver, Motors, Breadboard, Sensors, Arduino

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AN INEXPENSIVE VENTILATOR WITH AN OXYGENATOR AND ADJUSTABLE BPM

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ABSTRACT

This study examines a low-cost ventilator that uses an Ambu bag, a manual resuscitation bag, to pump air into a patient's lung who isn't able to breathe on their own. as an intense therapy, to keep the oxygen pressure level stable in order to enhance the patient's breathing by controlling the oxygen flow in the lungs. A ventilator uses a pumping action that is paradoxical to force air into the lungs. Because it uses a traditional bag-valve mask to compress air to give breaths, the ventilator may operate without a human operator. It gets the energy it needs from an electrical motor with a three to twelve volt DC battery. Different functions got to be done for the objective of ventilation i.e. Pressure and the required range of breaths per minute are controlled by an easy-to-use button-based input board. The duration of the inhale to exhale ratio should be adjusted. The microcontroller is responsible for controlling the pressure and oxygen sensors in the low-cost ventilator system. This project focuses on giving the patient oxygen using a mechanical means. This project uses sensors to monitor and manage the temperature, pulse rate, oxygen level pressure, and other vital signs while providing the patient with pleasant care. The LCD module shows the data from the sensors.

Key words: Servo motor, LCD display, oxygen sensor, ventilator bag, and ATmega328 microcontroller.

USE OF MACHINE LEARNING ALGORITHM FOR SIGN LANGUAGE RECOGNITION

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ABSTRACT

In this paper, machine learning techniques are used to investigate the recognition of Indian Sign Language (ISL). The study focuses on input image processing and uses a dataset of ISL motions. After converting the photos to binary and grayscale formats, they undergo median filtering for noise reduction and modification for improved clarity. Edge detection methods are used to draw attention to important details. In order to efficiently capture form attributes, feature extraction combines the computation of Hu Moments features with contour-based and region-based shape representation techniques. A cohesive vector representation is created by combining these qualities. Gestures are classified using Support Vector Machine (SVM) classification into predetermined categories (A to Z). The efficacy of the model in precisely identifying ISL gestures is determined by analyzing the classification process' accuracy. By taking this technique, the research hopes to create a reliable system for real-time sign language gesture identification, which will enhance accessibility and communication for sign language users.

Index Terms: Machine learning, support vector machines, feature extraction, pre-processing, classification, accuracy, and Indian Sign Language (ISL).

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OPENING UP THE POTENTIAL OF MACHINE LEARNING FOR PREDICTING LIVER DISEASE

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ABSTRACT

The liver is one of the body's most important organs. Early disease recognition or diagnosis is crucial. This helps prevent disease at an early stage with less medicine. Test results and liver function tests are examples of conventional procedures. Liver disease is exceedingly difficult to diagnose early. This is due to the fact that disease symptoms don't show up until much later in the illness. This machine learning method helps diagnose diseases early by identifying the factors that contribute to liver dysfunction that can be fatal. Because of the seemingly sensitive signals, it is challenging for doctors and scientists to predict the disease in its early stages. The consequences won't show up until it's too late. The effort aims to overcome this problem and enhance the disease's victims through the use of machine learning techniques. Liver illness is difficult to detect and typically does not show symptoms until it is too late. This is because there are few indicators of the condition. The goal is to identify liver disease and healthy persons using a classification approach. If a person has liver disease, they will be further classed based on the kind and severity of their illness. Precautions are also given in case of any symptoms. As a result, liver illness has been detected in people using ML algorithms.

Index Terms: Support Vector Machine, Logistic Regression, Disease, Naïve Bayes, KNN, Liver Disease.

PREVENTING INTELLIGENT VEHICLE THEFT AND REMOTE ENGINE MANAGEMENT

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ABSTRACT

This study takes into account The Vehicle Theft Detection System with Remote Engine Locking is a cutting-edge security system that combines contemporary technologies to stop vehicle theft. This system offers real-time control and monitoring through the use of the Blynk application. It uses a network of sensors to identify anomalous vehicle movements and illicit access. The Blynk app on the car owner's smartphone receives an instant notice from the system when a possible theft is identified. The owner can then use the app to remotely shut the car's engine, therefore immobilizing it and stopping any more unauthorized movement. The system also has an audible alarm to warn neighbors and discourage criminals. Through a smooth connection with the Blynk platform, this initiative seeks to improve vehicle security, lower theft rates, and provide car owners more control and peace of mind.

Keywords: IR Sensor, Blynk Application, Remote Engine Locking, Unauthorized Access Detection.

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TARGET DESTROYER AND AUTONOMOUS MOTION DETECTOR

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ABSTRACT

This project suggests a sophisticated automated system that detects movements, identifies targets, and initiates a response using a Raspberry Pi. To identify and monitor activity inside a predetermined area, the system makes use of actuators, a camera module, and motion sensors. The system detects motion and sets off a series of actions to identify the target and launch a personalized response, including turning on a pointing laser or other mechanisms. The central processing unit, or Raspberry Pi, controls the whole operation and offers versatility for integrating with different peripherals. Because of its adaptability, the system may be customized for a variety of uses, making it a flexible solution. The main goal is to provide an affordable, dependable system that can be applied in various contexts, such as security systems to keep an eye on and react to unwanted access, and wildlife protection to keep animals out of particular locations.

Index Terms: Raspberry Pi, camera, actuators, pointing laser, sensors, automatic motion detection, and target elimination.

DESIGN OF INTELLGENT WEARABLE HEALTH MONITORING SYSTEM USING IOT

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ABSTRACT

Science and expertise have evolved in the modern healthcare environment, with a focus on wireless sensing nodes. Due to the specific cause of heart difficulties and attacks—that is, the lack of appropriate medical care provided to patients at the appropriate time—patients are facing a difficult position of unexpected death. This is to notify physicians and close relatives and to specifically monitor elderly people. Therefore, we are putting up a novel idea to prevent these unexpected mortality rates: Patient Health Monitoring. This system makes use of sensor technology and the internet to relay information to loved ones in the event of an emergency.

Keywords: esp8266 Wi-Fi module, Thinkspeak, Heart Pulse Sensor, Temperature Sensor, Node MCU, Jacke

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MULTI-SEEDING AGRICULTURAL ROBOT DESIGN AND IMPLEMENTATION

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ABSTRACT

This study looks at a multitasking robot for the agricultural industry. Automation in farming processes is highly helpful. Precision agriculture, which uses agricultural robots, is a rapidly emerging technology in the agriculture sector today. It saves time and energy squandered on repetitive farming activities. These kinds of robots require specific design considerations and a methodology tailored to the agricultural environment in which they will operate. An autonomous robot's operation depends on field factors, such as length and width. The "Agro-Bot" prototype is designed to do multiple tasks, including fertilization, cultivation, and harvesting using an independent irrigation system. It also has sensors to detect soil moisture, and the information is sent to our smart mobile with solar power. It's a four-wheeled vehicle with an Arduino nodemcu esp-8266 microcontroller acting as the master controller. Since it runs on batteries, it won't harm the environment or require as many non-renewable energy sources. Additional accessories are slaves that carry out particular tasks. The current strategy is to create increasingly intelligent devices that can function in a semi-natural or unaltered environment.

Keywords: microcontroller, robot, IoT, seed dropping, and surveillance

PCB FLAW DETECTION WITH A DEEP LEARNING APPROACH

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ABSTRACT

Defects on PCB Layout surfaces can be difficult to identify during manufacturing operations, which can lower the quality of the finished product. Conventional defect detection techniques could be laborious and prone to mistakes. This project proposes and uses MATLAB to construct a revolutionary Convolutional Neural Network (CNN) based fault detection system. The suggested method works by feeding high-resolution photos of PCB Layout surfaces into a CNN architecture. This CNN architecture has been trained to identify several kinds of defects, like voids, fractures, and impurities, as in image processing applications. By utilizing CNNs' innate ability for pattern recognition and visual feature extraction, the system is able to accurately identify and classify problems. Additionally, by using MATLAB's reliable computing capabilities, the system is suited for real-time industrial applications since it can analyze massive volumes of picture data effectively.

Keywords: High Resolution Images, CNN, MATLAB, PCB, Deep Learning, Defects Detection

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A REMOTE PATIENT HEALTH MONITORING SYSTEM BASED ON IOT

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ABSTRACT

An Internet of Things (IoT)-based patient remote health monitoring system may ascertain a person's or patient's health parameters at any time and from any location. The Internet of Things (IoT)-based remote health monitoring system uses IoT technologies to improve healthcare. Sensors such as the ECG (AD8232), temperature (MLX90614), heart rate, and spo2 (MAX30102) are affixed to the human body to measure vital signs including blood pressure, temperature, heart rate, and oxygen saturation in order to detect the health problems of the patient. An alarm will be issued to the user's mobile device if the measured health parameters exceed the predetermined threshold values. When a serious condition is identified, the parameters are also communicated to the clinician's server. A communication network and an ESP32 microcontroller are utilized to send and receive the information.

Index Terms: ESP32 Microcontroller, IOT cloud, AD8232 ECG sensor, MAX30102 heart rate and spo2 sensor, Arduino IDE 1.8.5, Sensor of temperature: MLX90614 OLED display, non-contact infrared temperature sensor, and power supply

A 4:2 APPROXIMATE COMPRESSOR-BASED LOW-POWER AND HIGH-ACCURACY COMPUTING METHOD

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ABSTRACT

The paper's goal is to construct an approximation multiplier by creating an approximate compressor that is more accurate than current approximate compressors. Using the right multiplier is a new way to minimize critical path time and power consumption for error-tolerant applications. Accuracy can be sacrificed for more performance and less energy with the right multiplier. In order to meet varying needs for precision, we not only provide a very accurate approximate 4:2 compressor in this article, but we also present an adjustable approximation multiplier that may dynamically truncate partial products. Depending on the needs of the user, the suggested approximate multiplier can modify the power and accuracy needed for multiplications at run-time.

Index Terms: 4:2 compressor, approximate compressor.

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SMART PIECE WITH GPS MOTIVATION

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ABSTRACT

The main objective behind developing this smart shoe with gps tracking is to provide safety to people. It helps in tracking the wearer's location and movements send it to the wearer's friends or family, in case of an emergency. It reduces the risk and helps them in need by identifying the location of person who is in danger. By using this smart shoe, the women can alert their family members and even harm the attacker. In this,GPS module is being used for location tracking and a SIM800L module is integrated with the circuit for sending it to the wearer's relative's smartphone. As soon as the device present in the shoe is triggered, the location of the wearer is captured and converted into a proper google maps hyperlink and sent to the remote smartphone. The mechanical stress created by these impressions is then converted into electrical energy, which is stored in a battery for later use. Piezoelectric sensor is a great invention that has numerous applications, and one of them is to convert mechanical stress to electrical energy. Keywords: Microcontroller, Piezoelectric Transducer Sensor, DC-DC Buck Converter, Charging Module, Rechargeable Backup Battery, GPS Module, GSM Module, embedded C, Arduino IDE.

CHARGE SHARING TECHNIQUE CHARGE EFFICIENT 8T SRAM CELL DESIGN

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ABSTRACT

The purpose of this work is to build and analyze an 8T SRAM cell that utilizes the Charge Sharing technique in situations where the performance of a regular 8T SRAM cell suffers with low power sources. Charge sharing between transistors is a design feature of the SRAM cell that strengthens its resistance to sounds resulting from low power supplies. Reusing the read discharge power has benefits beyond just reducing noise. The regular 6T, 8T, and 8T with charge sharing are compared. It demonstrates that 8T uses less power while using charge sharing than other devices. Charge power is recycled. The regular 6T, 8T, and 8T with charge sharing are compared. It demonstrates that 8T uses less power while using charge sharing than other devices.

Key words: 6T

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