3.2.1 Number of papers published per teacher in the Journals notified on UGC website during the year

Title of paper	Name of the author/s	Department of the teacher	Name of Journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
Reduce the Frequency Amplitude and Road Condition Implement on Vehicle Chassis	Yeduru Jaya Santhoshi Kumari	Mechanical Engineering	International Jounral of Innovative Research in Science, Engineering and Technology	May-24	2319-8753	28_Reduce.pdf
Design of Symmetrical and Unsymmetrical Aerofoil Using CFD Analysis	K. Nagaraju	Mechanical Engineering	International Jounral of Innovative Research in Science, Engineering and Technology	Apr-24	2319-8753	426_Design.pdf
Structural Analysis of an Off-Road Vehicle Suspension System Using CATIA and ANSYS	K. Sandhyn	Mechanical Engineering	International Journal of Scientific Research in Engineering and Management (IJSREM)	May-24	2582-3930	https://www.research gate.net/publication/3 80357795_Structural_ Analysis_of_an_Off-Road_Vehicle_Suspens ion_System_Using_CA TIA_and_ANSYS
Drone for Agricultural Monitoring Using Drone for Agricultural Monitoring Using CATIA and ANSYS	K. Sandhya	Mechanical Engineering	International Jounral of Innovative Research in Science, Engineering and Technology	Apr-24	2319-8753	419_Design_NEW.pdf
Parametric Modelling and Optimization of Cam Mechanism Using CATIA and ANSYS	B Rama Krishna	Mechanical Engineering	International Jounral of Innovative Research in Science, Engineering and Technology	Apr-24	2319-8753	424_Parametric.pdf
Thermal and Structural Analysis of an Electronic Cooling Fan using CATIA and ANSYS	A N S Surya Prakash	Mechanical Engineering	International Jounral of Innovative Research in Science, Engineering and Technology	Apr-24	2319-8753	411_Thermal.pdf

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Avanthi Institute of Engg. & Technolog
Tamaram, Makavarapalem Md.,
Anakapalli District., Pin: 531 113

Title	Author	Department	Journal/Conference	Date	ISSN/ISBN	Link
SIMULATION AND OPTIMIZATION MATERIAL OF WIND TURBINE BLADE PROFILES USING CATIA AND ANSYS	A. N S SURYA PRAKESH	Mechanical Engineering	International Journal of Scientific Research in Engineering and Management (IJSREM)	May, 2024	2582-3930	SIMULATION AND OPTIMIZATION MATERIAL OF WIND TURBINE BLADE PROFILES USING CATIA AND ANSYS
Fabrication of Voice Controlled Robotic ARM	V Hari Kiran3 V Mounika1.	Mechanical Engineering	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY	June, 2024	2349-6002	IJIRT165214_PAPER.pdf
Gear Train Optimization of High Speed Machinery by using CATIA and ANSYS	Y.Jaya Santhoshi Kumari 1, K.SriRama Kumar 2	Mechanical Engineering	International Journal of Scientific Research in Engineering and Management (IJSREM)	May-24	ISSN: 2582-3930	
Implementation of Five Level Inverter for Single Stage Grid connected 1MW PV System	Dr T Srinivasa Rao1, Varahala Dora Petla2	Electrical & Electronics Engineering	Neuro Quantology	Jul-22	ISSN:1303-5150	https://www.neuroqu antology.com/open-access/Implementatio n+of+Five+Level+Inver ter+for+Single+Stage+ Grid+connected+1MW +PV+System_11209/?d ownload=true
Design of Five-level inverter with TSK based Single Stage controller for a Grid-connected PV System	Dr T Srinivasa Rao1, Varahala Dora Petla2	Electrical & Electronics Engineering	NCDT 2023	1st National Conference on Design Thinking: Trans-Disciplinary Challenges & Opportunities		7-8 July 2023	ISBN: 978-93-5915-224-0	https://exams.andhrau niversity.edu.in/filesto rage/aut-hub/conference-papers/NC236478996F 2514A.pdf
NATURE'S PHARMACY: A DEEP LEARNING APPROACH FOR IDENTIFICATION OF MEDICINAL PLANTS	UPPE NANAJI	COMPUTER SCIENCE AND ENGINEERING	i-manager's Journal on Future Engineering & Technology	Jun-24	Vol. 19 No. 4	https://doi.org/10.266 34/jfet.19.4.20869
PERFORMANCE EVALUATION WITH SCALABILITY VARYING ON ENERGY CONSUMPTION IN S-DYMO, M-DYMO AND FB-B-DYMO ROUTING ALGORITHM IN MANETS	UPPE NANAJI * MOHAN RAO C. P. V. N. J. ** CHIRANJEEVI M. ***	COMPUTER SCIENCE AND ENGINEERING	i-manager's Journal on Wireless Communication Networks	23/05/2024	Vol. 12 No. 2	https://doi.org/10.266 34/jwcn.12.2.20853

SECURITY-ANODR FOR PROVISIONING OF NEIGHBOUR SECURITY IN MANET	UPPE NANAJI * MOHAN RAO C. P. V. N. J. **	COMPUTER SCIENCE AND ENGINEERING	i-manager's Journal on Wireless Communication Networks	30/05/2024	Vol. 12 No. 2	https://doi.org/10.266 34/jwcn.12.2.20868
A STUDY ON ENERGY CONSUMPTION AND IMPACT ON NETWORK LIFETIME USING ANODR AND DYMO ROUTING PROTOCOL IN MANETS USING QUALNET SIMULATOR	UPPE NANAJI	COMPUTER SCIENCE AND ENGINEERING	i-manager's Journal on Communication Engineering and Systems.	23/05/2023	Vol. 13 No 1	https://doi.org/10.266 34/jcs.13.1.20854
AN IMPACT DATA ANALYTICS AND DBMS ON HRM POLICIES AND BUSINESS PERFORMANCE	Polavarapu Ganesh 5	MBA	International Research Journal of Modernization in Engineering Technology and Science	06-01-2024	Volume:06/Issue:06/June-2024 e ISSN: 2582-5208	https://www.irjmets.c om/uploadedfiles/pap er//issue_6_june_2024 /59100/final/fin_irjmet s1718292208.pdf#~te xt=This%20study%20ex plores%20the%20impa ct%20of%20integrating %20data,HR%20profes sionals%20and%20qua ntitative%20analysis% 20of%20performance %20metrics.
Floorplanning for optimizing area using sequence pair and hybrid optimization	T. Pattalu Naidu	ELECTRONICS AND COMMUNICATION ENGINEERING	springer Multimedia Tools and Applications	17/10/23	Volume 83, pages 57199–57221	10.1007/s11042-023-17575-0
Medical image segmentation using an optimized three-tier quantum convolutional neural network trained with hybrid optimization approach	K. Ravi Kumar 4	ELECTRONICS AND COMMUNICATION ENGINEERING	springer Multimedia Tools and Applications	11-Sep-23	Volume 83, pages 38083–38108	Medical image segmentation using an optimized three-tier quantum convolutional neural network trained with hybrid optimization approach. I Multimedia Tools and Applications
Research Article ESP32 BASED SMART INFORMATION FOR THE ATM SYSTEM	K. Ravi Kumar 6	ELECTRONICS AND COMMUNICATION ENGINEERING	International Journal of Recent Scientific Research	December, 2023	Vol. 14, Issue. 12, pp.4448-4452	a-ailable at www

Reduce the Frequency Amplitude and Road Condition Implement on Vehicle Chassis

Yeduru Jaya Santhoshi Kumari[1], Piradi Dhanaraju[2], Nandipalli Venkata Sai Vivek[3],

Nambala Sitharam[4], Nadampalli Venkata Narsimha Raju[5], Malla Pradeep[6]

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology ,

Tamaram, Narsipatnam, India[1]

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology , Tamaram,

Narsipatnam, India[2,3,4,5,6]

ABSTRACT: The chassis stands as a crucial and integral component within the framework of a vehicle. The primary objective of this undertaking revolves around conducting static structural analysis as well as harmonic analysis to explore the fundamental characteristics of a truck chassis. In the realm of stationary response, the focus is on identifying the location of failure zones and areas with high stress concentrations. Simultaneously, this analysis aims to determine the extent of deformation experienced by the truck chassis.For a comprehensive understanding of the dynamic response of the truck chassis, factors such as natural frequencies and mode shapes are meticulously planned through the utilization of the Finite Element Analysis (FEA) technique. The ensuing numerical analysis is then devised to validate the results obtained from the FEA models.To enhance the design and performance of the chassis, strategic modifications are envisaged. This involves the incorporation of a tuned mass damper to optimize the vibrations associated with the truck chassis and, in turn, mitigate the likelihood of failure. The ultimate objective is to curtail the frequency amplitude, particularly under favorable road conditions. Through these interventions, the goal is to achieve a chassis design that not only meets structural integrity requirements but also minimizes vibrations and enhances overall performance on the road.

KEYWORDS: Truck Chassis,Lader Frame,Stress, Strain, Deformation,Finite Element Analysis, CATIA,ANSYS. Structural Strength design, Structural interaction with fluid runs, Analysis of shock (underwater & in materials), Mass diffusion, Buckling problems, Dynamic analyses, Electromagnetic evaluations, Metal forming, Coupled analyses

I. INTRODUCTION

The truck chassis serves as a foundational structure for business vehicles, enduring significant loads and forces. Dynamic analysis is crucial to prevent resonance and structural failure during operation, minimizing vibration and noise issues. The chassis typically consists of longitudinal and cross members, with an upswept frame to accommodate axle movement and maintain low height. The front overhang extends beyond the front axle, while the rear overhang extends past the rear axle. Commercial vehicles often employ framed construction for higher ground clearance and steering flexibility. The engine, clutch, and transmission form a rigid assembly mounted at the front end of the frame, isolated from shocks and vibrations by rubber blocks. Various cross-sections, such as channel and square box sections, provide bending stiffness for side members, often joined by riveting or lap welding for heavy-duty applications.

II. RELATED WORK

M. Ravi Chandra etal says here existing TATA 2515EX vehicle is taken for displaying and examination of an overwhelming vehicle body. The three different composite substantial vehicle skeleton structure have been displayed for three diverse cross-areas. For example, C, I and Box type cross areas And likewise with regards to different composite materials named as Carbon/Epoxy, Eglass/Epoxy and S-glass/Epoxy. After experienced examination with the assistance of ANSYS 12.0 they found that whole outcomes said as polymeric composite substantial vehicle undercarriage of I area for a similar burden conveying limit a decrease in weight of 73%~80%, common recurrence of PCHVC overwhelming vehicle case are 32%~54% higher than substantial vehicle steel body and 66~78% stiffer than the substantial vehicle steel skeleton.

Design of Symmetrical and Unsymmetrical Aerofoil Using CFD Analysis

K. Nagaraju, Gulla Vivek, Nakkina Jaya Sai Vinay, Kampati Srinivas, Koneti Siva sai ,

Chadaram Venkat Anand

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Tamaram, Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology, Tamaram,

Narsipatnam, India

ABSTRACT: This project explores aerofoil design and analysis using CATIA for design and ANSYS for Computational Fluid Dynamics (CFD). Aerofoils are crucial in aerodynamics, impacting lift, drag, and overall performance in aerospace, automotive, and wind energy. Differentiating between symmetrical and asymmetrical aerofoils, the study compares NACA 0012 and NACA 4421, concluding that the asymmetrical NACA 4421 performs better. This analysis aids in understanding aerodynamic forces and optimizing design for various applications.

KEYWORDS: Aerofoil, CATIA V5, ANSYS, CFD.

I. INTRODUCTION

Aerodynamics studies the movement of air around objects like aerofoils. It's crucial for understanding flight, with origins dating back to the 18th century. Engineers use a standard atmosphere for simplification, representing average air conditions. Flight is governed by four forces: lift, weight, thrust, and drag. Flow is classified based on velocity, from subsonic to hypersonic. Incompressible aerodynamics assumes constant density, while compressible aerodynamics considers density changes.

The boundary layer is a thin layer of air over surfaces like aircraft wings, transitioning from slow to fast-moving air. It can be smooth (laminar) or chaotic (turbulent), affecting aerodynamics. An aerofoil is a streamlined shape generating lift when air flows over it, crucial for aircraft wings. Its asymmetric shape creates lift by altering air pressure. The NACA aerofoil series transformed design with systematic equations defining camber, thickness, and position. The four-digit series, like NACA 2412, denotes key parameters, aiding aircraft wing design since the mid-20th century
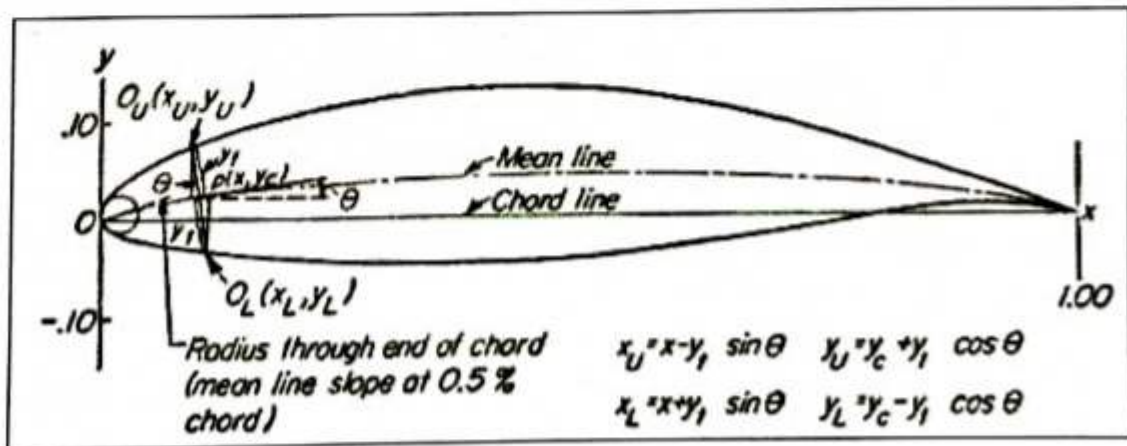
NACA Aerofoil Geometrical Construction

Article

Structural Analysis of an Off-Road Vehicle Suspension System Using CATIA and ANSYS

Authors:

Sandhya K

References (5)

Abstract

This project delves into the structural analysis of an off-road vehicle suspension system, employing cutting-edge software tools such as CATIA and ANSYS. Off-road vehicles necessitate robust suspension systems capable of withstanding harsh terrain conditions while ensuring vehicle stability, manoeuvrability, and passenger comfort. The study focuses on evaluating the structural integrity, performance, and behaviour of the suspension system under diverse load conditions and terrain scenarios. This project focuses on conducting a comprehensive structural analysis of an off-road vehicle suspension system using advanced engineering software tools, specifically CATIA and ANSYS. CATIA is a powerful computer-aided design (CAD) software known for its capabilities in creating detailed 3D models, while ANSYS is a leading finite element analysis (FEA) software used for simulating structural behaviour and analyzing mechanical systems. Keywords: suspension system, CATIA v5, ANSYS, iterations, FEA.

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Anakapalli District., Pin: 531 113

Design and Simulation of an Autonomous Drone for Agricultural Monitoring Using CATIA and ANSYS

K. Sandhya, Gangiredla Siva Ganesh, Mamidi Gunnayya Babu, Grandhi Srinivas,

Nammi Lathan Chand, Kinthada Manoj Kumar

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

UG Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

UG Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

UG Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

UG Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

UG Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,

Makavarapallem, Anakapalle, Andhra Pradesh, India

ABSTRACT: This project is all about creating a special kind of drone that can help farmers keep an eye on their fields more easily. Farmers need good data to make their farms work better, and drones can help with that.

First, we use computer programs like CATIA to design the drone. We think about things like how it flies, how strong it needs to be, how much it can carry, and how easy it is to fix. We make sure it's really good for flying over farms, even when the weather isn't perfect, and that it can move well in tight spaces. We also make sure it can work with different tools for sensing things in the fields.

Once we have the design, we use another program called ANSYS to test it out. We check if it can handle flying in different situations without breaking, and if it's good at staying stable and efficient. We also make sure it doesn't get too hot when it's flying for a long time by material varying steel, Aluminium, Carbon Fiber, Titanium Alloys and E glass are check with wing of drone. Then, we work on making the drone smart. We teach it to fly by itself, avoid obstacles, and follow instructions precisely.

KEY WORDS: DRONE, FARMERS, CATIA, ANSYS

I. INTRODUCTION

The current project "multi-purpose agriculture drone" is totally aimed to design, analyze and test a multi-functional drone for the agricultural uses to be submitted to a manufacturing company, according to the customer needs in a more optimized way. This internship was held mostly online by AIE company, located in Lugo, employing both employees, students and interns with different majors in different teams.

The ultimate purpose of developing the smart agriculture means and tools is to find an approach to meet the human needs as the global population is growing overwhelmingly. Furthermore, the protection of the environment is becoming

Parametric Modelling and Optimization of Cam Mechanism Using CATIA and ANSYS

B. Rama Krishna, P. Ramana Babu, Alugolu Ganesh, T. V. B. Subramanyam

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,
Makavarapalem, Narsipatnam, Anakapalli, India

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology,
Makavarapalem, Narsipatnam, Anakapalli, India

Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology, Makavarapalem,
Narsipatnam, Anakapalli, India

Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology, Makavarapalem,
Narsipatnam, Anakapalli, India

ABSTRACT: Cam mechanisms are widely employed in numerous applications including automotive engines, robotics, and manufacturing machinery due to their ability to convert rotary motion into reciprocating or oscillating motion. The first phase of the t involves the parametric modeling of the cam mechanism using CATIA, a powerful computer-aided design (CAD) software. Parametric modeling allows for the creation of a flexible and adaptable design that can be easily modified to accommodate different specifications and requirements. Various parameters such as cam profile, follower type, and operating conditions are defined and optimized within the CATIA environment to achieve the desired performance characteristics. Once the parametric model is established, the next phase involves the analysis and optimization of the cam mechanism using Ansys, a leading finite element analysis (FEA) software. Ansys enables engineers to simulate real-world operating conditions and evaluate the performance of the cam mechanism under different loads, speeds, and environmental factors. Through advanced FEA techniques, the stress distribution, deformation, and dynamic behavior of the cam mechanism are analyzed to identify areas of improvement and optimize the design for enhanced performance and reliability. The optimization process aims to maximize the efficiency, minimize wear and tear, and optimize the overall performance of the cam mechanism while ensuring compliance with design constraints and specifications.

KEYWORDS: Parametric modelling, optimization cam mechanism, CATIA, ANSYS

I. INTRODUCTION

"Parametric Modelling and Optimization of a Cam Mechanism Using CATIA and ANSYS" represents an interdisciplinary approach that harnesses the power of advanced computer-aided design (CAD) and finite element analysis (FEA) software to address the challenges inherent in the design, simulation, and optimization of cam mechanisms. Cam mechanisms are fundamental components in numerous mechanical systems, playing pivotal roles in engines, automotive applications, robotics, and manufacturing equipment. They facilitate the conversion of rotational motion into linear motion, or vice versa, thereby enabling precise control of motion and timing within a mechanism. Given their critical functions, the optimization of cam mechanisms is paramount to enhancing efficiency, reliability, and overall performance. CATIA (Computer-Aided Three-dimensional Interactive Application) stands out as a robust CAD software solution widely embraced across industries for its comprehensive suite of tools tailored for product design and development. Through CATIA, engineers can engage in parametric modelling, which allows for the creation of intricate geometries and assemblies while preserving design intent through the establishment of parameters and relationships. This parametric approach facilitates iterative design processes and enables the exploration of various design alternatives with ease and efficiency.

Cam is a mechanical member for transmitting a desired motion to a follower by direct contact. The driver is called cam

Thermal and Structural Analysis of an Electronic Cooling Fan using CATIA and ANSYS

A.N.S.Surya Prakash, Kasetty Venkatesh, Jerripothula Pavan Kumar, Kammireddy Rajesh,

Karimi Dilip Kumar, Salapu Chaitanya Kumar

Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology ,
Tamaram, Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology , Tamaram,
Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology . Tamaram,
Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology . Tamaram,
Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology . Tamaram,
Narsipatnam, India

U.G. Student, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology . Tamaram,
Narsipatnam, India

ABSTRACT:The thermal and structural management of electronic devices is crucial for maintaining optimal performance and reliability. This project focuses on the thermal analysis of an electronic cooling fan using CATIA for design and subsequent analysis. The project begins with the comprehensive design of the cooling fan using CATIA, considering factors such as airflow dynamics, geometry optimization and material selection.

The intricate modelling capabilities of CATIA ensure precise representation of the fan's components, facilitating efficient heat dissipation. Model of 4, 6 & 8 Nos blade design made.Subsequently, the cooling fan undergoes thermal analysis using advanced analysis techniques to simulate its performance under various operating conditions. Finite Element Analysis (FEA) is employed to assess temperature distribution, thermal gradients, and heat transfer efficiency within the fan assembly. By Varying Materials like Carbon Fiber & Kevlar Fiber .The results of the thermal and static analysis provide valuable insights into the fan's thermal and structural behaviour, aiding in the identification of potential hotspots and optimization with material change.

KEYWORDS:Electronic cooling fan, Thermal analysis, Airflow dynamics, Geometry optimization, Finite Element Analysis, CATIA.

INTRODUCTION

Industrial electronic cooling fans are integral to maintaining optimal operating temperatures for various electronic devices and equipment across industries. They are crucial components in applications like computers, HVAC systems, and thermal energy equipment, where efficient heat dissipation is essential to prevent overheating and ensure reliable performance. Despite their widespread use, there is still a need for a deeper understanding of electronic cooling fan systems, particularly in terms of thermal analysis and optimization.

This project focuses on conducting thermal analysis of electronic cooling fans using CATIA for design and subsequent analysis. By leveraging advanced modeling and simulation techniques, the study aims to enhance understanding of the thermal behavior and performance characteristics of electronic cooling fans under different operating conditions. Investigating the thermal dynamics of cooling fan systems is crucial for optimizing their performance, reliability, and

Article

SIMULATION AND OPTIMIZATION MATERIAL OF WIND TURBINE BLADE
PROFILES USING CATIA AND ANSYS

Authors:

A. N S SURYA PRAKESH

Abstract

I Wind energy is a fast-growing way to
make power from wind, and it's good
for the environment. Wind turbines have
big blades that catch the wind to make
electricity. This project is all about
making those blades work better and
cost less money. First, we use special
computer programs called CATIA and
ANSYS to design and test the blades.
CATIA helps us design the shape and
size of the blades, while ANSYS helps
us see how strong they are and how
well they catch the wind. We start by
making different blade shapes in
CATIA, changing things like length,
width, and twist. Then we use ANSYS to
test them. We look at things like how
much stress they can handle, how
much they bend, and how well they
catch the wind. After testing, we try to
make the blades even better. We use
special tools in ANSYS and CATIA to
find the best combination of blade
features. We want blades that are
super-efficient at catching wind, strong
enough to last a long time, and don't
cost too much to make. By varying
material to blade profile checking
strength and mode shapes for
Aluminium, Carbon fibre and E glass

Principal
Avanthi Institute of Engg. & Technology
Tamaram, ...alem Md.,
Anakapalli District., Pin: 531 113

Fabrication of Voice Controlled Robotic ARM

V Mounika[1], Chikkam Anandini [2], V Hari Kiran[3]

[1]Assistant Professor, Department of Mechanical Engineering, Avanthi Institute of Engineering and Technology, Makavarapalem, Anakapalli District, Andhra Pradesh, India-531113
[2]Student, Department of Mechanical Engineering, Andhra University, Visakhapatnam, Visakhapatnam District, Andhra Pradesh, India -530003
[3]Associate Professor, Avanthi Institute of Engineering and Technology, Makavarapalem, Anakapalli District, Andhra Pradesh, India-531113

Abstract: This work "voice controlled robotic arm" was designed and developed in such way that the arm movement has four degrees of freedom and is controlled by the voice commends using an opensource android mobile application. The arm control board consists of Arduino [2] uno, PCA9685 16 channel servo driver and trans receiver Bluetooth module. The movement of arm is facilitated by the four servo motors connected with servo driver at the receiver side. The voice commands from the application is converted into digital signals by blue tooth RF transmitter for an appropriate range of 100 meters to the robot arm. At the receiver end data gets decoded by the blue tooth trans receiver and is fed into micro controller which performs the required task by the listening to the voice commands of the user. The software code is written in embedded C and uploaded to micro controller. The kinematic structure of robot arm 3D CAD model has been done in 3D CAD software (Auto cad).All CAD models are 3D printed with PLA material, assembled and tested. The kinetics and analysis of the structural components has to be carried out for further evaluation. This robotic arm is used in various industrial applications such as handling of hazardous materials in the areas where the greatest imminent threat to humans.

Key Words: voice-controlled robot, Arduino uno, PCA9685, 3D CAD, servo driver, hazardous material

INTRODUCTION

Robotic is defined as the study, design and use of robotic systems for manufacturing. With the rise in manufacturing industrial activities, a robotic arm[7] is invented to help various industries to perform a task or work instead of using manpower [1].Robots are generally used to perform unsafe, hazardous, highly repetitive, and unpleasant tasks. Robot can perform material handling[21], assembly, arc welding, resistance welding, machine tool load and unload function, painting and spraying, etc. It is very useful because it possesses high precision, intelligence and endless energy levels in doing work compared to human being. For an example, a robotic arm is widely used in the assembling or packing line by lifting the small objects with repetitive motion that human couldn't bear to do in a long period of time. The light material lifting task can be done by the robotic arm efficiently and time-saving because it is not restricted by fatigue or health risks which man might experience.

An industrial robot is a re-programmable multifunctional manipulator design to move material, parts, tools, or specialized devices through variable programmed motion for performance of a variety of tasks. This is the definition from the Robot Institute of America to reflect main features of modern robot systems. An industrial robot system can include any devices or sensors together with the industrial robots to perform its tasks as well as sequencing or monitoring communication interfaces.

PARTS OF THE ROBOT ARM IN FABRICATION:

The various parts considered for assembly are:

1. Servo motor mg946r – 3 no's
2. Arduino Uno – micro controller
3. Voltage regulator – 12 volts to 5 volts
4. Terminal Board
5. Arms
6. Servo Drive
7. The Stepper motor with pulley
8. G2T IDLER Pulley
9. G2T Timing belt
10. Linear motion bearing
11. Stepper driver module
12. AVG 28 Silicon wire

Gear Train Optimization of High Speed Machinery by using CATIA and ANSYS

Y.Jaya Santhoshi Kumari,M-Tech(Ph.D), K.SriRama Kumar,M-Tech, J.Sai Charan Kumar,J.Ganesh,Y.Vamshi Krishna,
CH.Shanmukha Sarath Chandra,M.Govardhan Naidu

Department of Mechanical Engineering, Avanthi Institute of Engineering & Technology, Makavarapalem 531113.
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ABSTRACT: *This project aims to optimize gear trains for high-speed machinery using CATIA and ANSYS. Gear trains are crucial in various mechanical systems, especially in high-speed applications where efficiency and reliability are essential. The objective is to combine CATIA for designing and modelling gear trains with ANSYS for analysing their performance under high rotational speeds.*

Helical gear train use for Reverses Motion design as per requiment of power and motor speed. Same design check for maximium load by load on pinion taken as step of 13K, 15K, 20K, 25K and 30K Newtons are applied on helical gear and check the stress and other parameters material High speed steel. Dynamic analysis model also be carried for mode frequency

Keywords: Gear trains, Finite element analysis, CATIA, ANSYS.

1. INTRODUCTION

A gear train or gear set is a machine element of a mechanical system formed by mounting two or more gears on a frame such that the teeth of the gears engage.

Gear teeth are designed to ensure the pitch circles of engaging gears roll on each other without slipping, providing a smooth transmission of rotation from one gear to the next. Features of gears and gear trains include:

- The gear ratio of the pitch circles of mating gears defines the speed ratio and the mechanical advantage of the gear set.
- A planetary gear train provides high gear reduction in a compact package.
- It is possible to design gear teeth for gears that are non-circular, yet still transmit torque smoothly.
- The speed ratios of chain and belt drives are computed in the same way as gear ratios.

The transmission of rotation between contacting toothed wheels can be traced back to the Antikythera mechanism of Greece and the south-pointing chariot of China. Illustrations by the Renaissance scientist Georgius Agricola shows gear trains with cylindrical teeth. The implementation of the involute tooth yielded a standard gear design that provides a constant speed ratio.
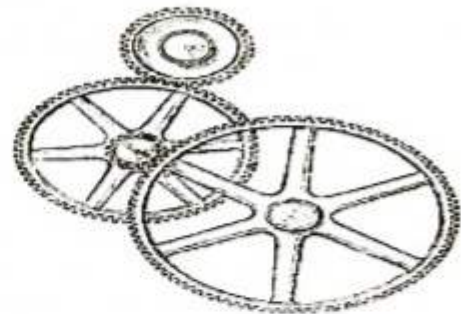
2. LITERATURE REVIEW:

Gear trains are fundamental components in mechanical systems, playing a critical role in transmitting power and motion. Research in optimizing gear trains for high-speed machinery has been a subject of interest in mechanical engineering and aerospace industries.

Previous studies have explored various methodologies for optimizing gear trains to enhance efficiency and reliability. The integration of computer-aided design (CAD) and finite element analysis (FEA) tools has been widely recognized as an effective approach in this endeavour.

CATIA, a prominent CAD software, has been extensively utilized for designing gear trains. It offers advanced features for

Implementation of Five Level Inverter for Single Stage Grid connected 1MW PV System

*Anguluri Santhi Swarup[1], T. SrinivasaRao[1], G.Sandhya rani[2], P.V.Dorababu[1]

[1] Department of EEE, Avanthi Institute of engineering and technology, Visakhapatnam, A.P., INDIA

2 Vasavi College of Engineering, Department of Electrical and Electronics Engineering, Hyderabad, India

ABSTRACT

In this paper, a simple and low-cost solar-power-based induction motor drive is implemented using constant V/F ratio. The inverters also can be using to extract maximum power from PV systems through new controlling techniques in power electronics devises. Therefore an extra DC to DC converter is not required to make PV at its maximum power point condition. However, this technology can be used for small scale solar power plants since all PV arrays in solar power plant cannot be received same irradiance. Takagi-Sugeno-Kang (TSK) fuzzy controller is having significant priority than proportional plus integral controllers when rapid changes are having in input. Hence, TSK based single stage controller is developed in this paper for grid connected 1MW solar plant.

Keywords–Solar PV array, Constant V/F, SVPWM technique, voltage source inverter, MPPT, P&O, Takagi-Sugeno-Kang(TSK)controller.

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I. INTRODUCTION

Many countries are currently suffering from a major shortage of electricity generation capacity. Lack of electricity is one of the main hurdles in the development of rural areas of many countries. Over one third of India's rural population does not have electricity [1]. The world is concerned with fossil-fuel exhaustion and environmental problems caused by conventional power plants. In order to overcome the energy shortage, reduce the air pollution and mitigate the green house effects; the demand of renewable energy sources has increased significantly. Therefore, renewable energy sources, particularly solar and wind are becoming more popular and demanding.

In many countries there are remote communities where connection with power grid is too expensive or impractical and diesel generators (DG) are often the source of electricity. For example many of the remote railway stations in India are operated with DG [2]. Under such circumstances, a locally placed small scale off-grid renewable energy system can be a feasible solution. Such systems may be referred as remote area power supply (RAPS) systems. Some of the examples of stand-alone (or off-grid) hybrid generation system are: 'Photovoltaic (PV)-Wind-DG' system located in Tirumala Tirupati, India [3], 'PV-Diesel' hybrid system of 50kWh/day existed in Arbaminch town in the southern region of Ethiopia [4], etc. Typical off-grid or stand-alone power system includes one or more sources, energy storage and their regulation. Generally, in stand-alone systems the renewable generations are located close to the connected loads.

According to a 2011 projection by the International Energy Agency [5], solar power generators may produce most of the world's electricity within 50 years, dramatically reducing the emissions of greenhouse gases that harm

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Tamsa... ...arapalem Md.,
Anakap... ...distnict., Pin: 531 113

Design of Five-level inverter with TSK based Single Stage controller for a Grid-connected PV System

Varahala Dora Petla
A.U. TDR-HUB, Visakhapatnam

T. Srinivasa Rao
A.U. TDR-HUB, Visakhapatnam

ABSTRACT: In this paper, a simple and low-cost solar-power-based induction motor drive is implemented using a constant V/F ratio. The inverters can also extract maximum power from PV systems through new controlling techniques in power electronics devices. Therefore an extra DC-to-DC converter is not required to make PV at its maximum power point condition. However, this technology can be used for small-scale solar power plants since all PV arrays in a solar power plant cannot be received the same irradiance. Takagi-Sugeno-Kang (TSK) fuzzy controller has significant priority over proportional plus integral controllers when rapid changes are having in input. Hence, TSK based single-stage controller is developed in this paper for a grid-connected 1MW solar plant.Keywords–Solar PV array, Constant V/F, SVPWM technique, voltage source inverter, MPPT, P&O, Takagi-Sugeno-Kang(TSK)controller.

I. INTRODUCTION

Many countries are currently suffering from a significant shortage of electricity generation capacity. Lack of electricity is one of the main hurdles in the development of rural areas in many countries. Over one-third of India's rural population does not have electricity [1]. The world is concerned with fossil-fuel exhaustion and environmental problems caused by conventional power plants. To overcome the energy shortage, reduce the air pollution and mitigate the greenhouse effects; the demand for renewable energy sources has increased significantly. Therefore, renewable energy sources, particularly solar and wind, are becoming more popular and demanding.

In many countries, there are remote communities where the connection with the power grid is too expensive or impractical, and diesel generators (DG) are often the source of electricity. For example, many of the remote railway stations in India are operated with DG [2]. Under such circumstances, a locally placed small-scale, off-grid renewable energy system can be feasible. Such systems may be called remote area power supply (RAPS) systems. Some of examples of standalone (or off-grid) hybrid generation systems are: the 'Photovoltaic (PV)-Wind-DG' system located in Tirumala Tirupati, India [3], 'PV-Diesel' hybrid system of 50kWh/day existed in Arbaminch town in the southern region of Ethiopia [4], etc. The typical off-grid or standalone power system includes one or more sources, energy storage, and their regulation. Generally, the renewable generations are located close to the connected loads in standalone systems.

According to a 2011 projection by the International Energy Agency [5], solar power generators may produce most of the world's electricity within 50 years, dramatically reducing the emissions of greenhouse gases that harm the environment. The worldwide installed capacity of solar-based generations is 40,000 MW and more than 100 countries use solar power [5, 6]. India has huge potential for PV systems because of availability of many sunny days throughout the year. In India, many solar-based systems have been installed in unelectrified areas or areas having intermittent electric supply. The total installed capacity of solar plants is approximately 110 MW. The recently launched Jawaharlal Nehru National Solar Mission of Govt. of India has planned to achieve off-grid solar applications of 1,000 MW by 2017.

Among the PV systems, water pumping system for irrigation purpose is very popular, for example, there are more than 10,000 solar-powered water pumps in use in the world today [7]. A hybrid 'PV-DG' system is very popular to supply telecommunication towers, emergency power supplies in industries and

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Nature's Pharmacy: A Deep Learning Approach for Identification of Medicinal Plants

Uppe Nanaji*

Avanthi Institute of Engineering & Technology, Mandal, Telangana, India.

Abstract

The discovery and use of medicinal plants are essential for both conventional and modern health systems. This study introduces a unique deep learning technique using Effici and extraction of medicinal plants. For the chemical models, the version is trained on specialized datasets, including various plant species, to ensure classification accuracy. The technique provides a reliable and efficient solution for identifying medicinal plants based on specific characteristics. The EfficientNetB3 model demonstrates better overall perform with limited computing resources. The application of deep learning in plant chemical identification holds promise in fields such as medicine, ethnobotany, and conservation bi professionals, and enthusiasts to quickly catalog medicinal plants and gain insights into their healing properties. In particular, the EfficientNetB3 model facilitates the efficient medicinal plants, thereby advancing plant research and improving health practices.

Keywords

Medicinal Plants, EfficientNetB3, MongoDB, Django, ChatBot Messenger, Deep Learning.

How To Cite This Article?

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Principal
Avanthi Institute of Engg. & Technology
Tamaram .... aealem Md.,
Anaka......, ...,, Pin: 531 113

Performance Evaluation with Scalability Varying on Energy Consumption in S-DYMO, M-DYMO and FB-B-DYMO Routing Algorithm in M

Uppe Nanaji*, Mohan Rao C. P. V. N. J.**, Chiranjeevi M.***

*-*** Avanthi Institute of Engineering and Technology, Visakhapatnam, Andhra Pradesh, India.

Abstract

Mobile Ad Hoc Networks (MANETs) are dynamic and self-configuring networks characterized by node mobility and decentralized operations. Efficient routing protocols play communication while optimizing resource usage, particularly energy consumption. This paper presents a comparative performance evaluation of three prominent routing algor and FB-B-DYMO, focusing on their scalability and energy efficiency in MANET environments. This study utilizes simulation-based experiments to assess the performance metri DYMO. Key parameters evaluated include packet delivery ratio (PDR), end-to-end delay, routing overhead, and energy consumption under varying network sizes and mobility so scale with network size and maintain performance under dynamic conditions is analyzed to understand its suitability for real-world MANET deployments. The results indi scalability and efficient energy utilization in small to medium-sized networks, leveraging its proactive route discovery approach. Conversely, M-DYMO demonstrates competitive p to its reactive route maintenance strategy, which balances energy efficiency with scalability challenges. FB-DYMO, integrating feedbackbased mechanisms, shows promising res and energy consumption but exhibits sensitivity to network dynamics. The findings provide insights into the trade-offs between scalability and energy consumption inherent in S routing algorithms, offering guidance for selecting appropriate protocols based on specific MANET deployment scenarios. Future research directions include enhancing protoc conditions and optimizing energy-efficient routing strategies tailored for evolving MANET environments.

Keywords

Performance Evaluation, Scalability, Energy Consumption, S-DYMO, M-DYMO, FB-B-DYMO, Routing Algorithms, MANETS, Security.

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Principal
Avanthi Institute of Engg. & Technology
Tamaram bealem Md.,
Anaka Pin: 531 113

Security-ANODR for Provisioning of Neighbour Security in MANETs

Uppe Nanaji*, Mohan Rao C. P. V. N. J.**

*,** Avanthi Institute of Engineering and Technology, Visakhapatnam, Andhra Pradesh, India.

Abstract

MANETs are a type of wireless ad hoc network characterized by a wireless medium. The MANET's inherent characteristics, like dynamic change in topology and lack of central ad of provisioning security. Most of the studies have concentrated more on providing security than the computational cost of energy utilization. Neighbor security is proposed in th de facto ANODR protocol for provisioning security in ANODR. The design and implementation of FB-NTT-S-ANODR to minimize energy consumption, thereby enhancing the netw computing technique for optimizing the performance of FB-NTT-S-ANODR is attempted. From experimental results, the proposed FB-NTT-S-ANODR minimizes the total energy c proposed method is more suitable for provisioning security and enhancing the network lifetime.

Keywords

ANODR, Security-ANODR, FB-NTT-S-ANODR, Fuzzy, Neighbor Security, MANETS.

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Avanthi Institute of Engg. & Technology
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A Study on Energy Consumption and Impact on Network Lifetime using ANODR and DYMO Routing Protocol in MANETs using QualNe

Uppe Nanaji*

Avanthi Institute of Engineering and Technology, Andhra Pradesh, India.

Abstract

This study examines energy consumption and the impact on network lifetime using ANODR and DYMO routing protocols in MANETs with the QualNet simulator. Both ANODR an but employ different approaches for establishing and maintaining routes among mobile nodes. ANODR adapts routing decisions based on neighborhood information, v establishing routes only when necessary. To investigate energy consumption and network lifetime, simulations or experiments should be conducted to compare the performanc scenarios. Analyzing these QoS metrics provides insights into the energy efficiency and impact on network lifetime of ANODR and DYMO in MANETs.

Keywords

ANODR, DYMO Routing Protocol, MANETS, QualNet Simulator, Energy Consumption, Network Lifetime.

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AN IMPACT DATA ANALYTICS AND DBMS ON HRM POLICIES AND BUSINESS PERFORMANCE

Naresh Kumar Bathala[*1], G Jayakar Johnson[*2], Mrs. Humera Firdous[*3],
Madhubabu Tadee[*4], Polavarapu Ganesh[*5], SVN Kumar[*6], Satya Pavan Kumar Voleti[*7]

[*1]SDM, Amazon India.

[*2]Assistant Professor & Head Of Placements MBA Ashoka Women's Engineering College, Kurnool, India.

[*3]Assistant Professor Bachelor Of Business Administration BBA Anwarul Uloom College (Autonomous) Hyderabad, Telangana, India.

[*4]Assistant Professor, Management Studies Simhadhri Educational Society Group Of Institution Engg And Mba, India.

[*5]Assistant Professor, MBA Avanthi Institute Of Engineering And Technology Makavarapalem, India.

[*6]Research Scholar, FBMED National Institute Of Food Technology Management And Entrepreneurship (NIFTEMK), India.

[*7]Assistant Professor, EEE Department Simhadhri Educational Society Group Of Institution Engg And Mba, India.

ABSTRACT

In today's highly competitive business environment, the role of data analytics and database management systems (DBMS) in shaping human resource management (HRM) policies and enhancing business performance cannot be overstated. This study explores the impact of integrating data analytics and DBMS into HRM practices and how it influences organizational outcomes.

The research employs a mixed-methods approach, combining qualitative interviews with HR professionals and quantitative analysis of performance metrics. Findings indicate that organizations leveraging advanced analytics and DBMS in HRM experience improved decision-making, streamlined operations, and enhanced employee engagement. Specifically, data analytics enables HR departments to predict workforce trends, optimize recruitment processes, and personalize employee development programs.

Moreover, the study identifies challenges, including data privacy concerns and the need for upskilling HR teams to effectively utilize these technologies. Practical implications highlight the importance of investing in robust data infrastructure and fostering a data-driven culture within organizations to fully capitalize on the benefits offered by analytics and DBMS.

In conclusion, this research underscores the transformative potential of data analytics and DBMS in HRM, emphasizing their critical role in driving business success through informed decision-making and strategic workforce management.

I.   INTRODUCTION

In recent years, the rapid advancement of data analytics and database management systems (DBMS) has significantly transformed various aspects of business operations. One area where these technologies are increasingly making an impact is in human resource management (HRM). The ability to collect, analyze, and leverage data has opened new possibilities for HR departments to enhance their policies and practices, ultimately leading to improved business performance.

Traditionally, HRM has been a field driven by qualitative insights and subjective decision-making. However, the availability of vast amounts of data and sophisticated analytical tools has enabled HR professionals to adopt a more evidence-based approach. This shift has empowered organizations to make informed decisions about their workforce, from recruitment and talent management to performance evaluation and employee engagement.

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Avanthi Institute of Engg. & Technology,
Tamara... ...aslem Md.,
Anako... ...Pin: 531 113

Scanned with ACE Scanner

Floorplanning for optimizing area using sequence pair and hybrid optimization

Pattalunaidu Tamarana[1] · A. Kamala Kumari[1]

Abstract

Physical design is major key processes in integrating the circuit into the chip area in VLSI circuit design. A netlist is accepted as input by a floorplanning stage, provided by the physical design phase of splitting the circuits. The floor planner creates the best positions for the circuit module. The dimensions, size, and connectivity details of the modules are contained in the netlist. It is crucial to create an optimum floorplan by creating metaheuristic optimization algorithms to increase the circuit performance by reducing chip size, wire length, and peak temperature. This scheme always has a complexity to allocate the weights and might consequence in adverse bias with a specific intention. Here, the non-slicing floor plan is studied through the sequence pair (SP) method. SP is a method for packing the blocks using a pair of modules termed sequences. Consequently, optimal parameter (area and wire length) tuning is performed by a new hybrid Integrated Bald Eagle and SMO (IBE-SMO) scheme that combined the approaches such as BES and SMO for optimal FP by means of tuning the wire length and area, taking into consideration as multi-objective. This validates the optimization of wire length and area utilizing IBE-SMO to reduce the length, width and height of the floor plan area. The standard MCNC benchmark circuits were used to test the suggested technique, and the findings show that it decreases the area by 0.7×10^4, and wire length by 0.84×10^5, compared to the existing methods.

Keywords Floor plan · SP method · Area · VLSI · IBE-SMO Algorithm

Nomenclature

BES	Bald Eagle Search
AI	Artificial Intelligence
BMO	Blue Monkey Optimization
BCSA	B*Tree Crossover Simulated Annealing Algorithm
2D	Two-Dimensional
CA	Coot Optimization
EHAFO	Energy And Heat-Aware Firefly Optimization

✉ Pattalunaidu Tamarana
naidu.tamarana1@gmail.com

[1] Department of Instrument Technology, Andhra University College of Engineering, Visakhapatnam, Andhra Pradesh 530003, India

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Medical image segmentation using an optimized three-tier quantum convolutional neural network trained with hybrid optimization approach

S. V. S Prasad[1] · B. Chinna Rao[2] · M. Koteswara Rao[3] · K. Ravi Kumar[4] · Srisailapu D. Vara Prasad[5] · Chappa Ramesh[6]

Abstract

Medical image segmentation is a crucial task in medical image analysis. The proposed method for medical image segmentation involves several steps. First, pre-processing techniques such as Gaussian filtering and contrast stretching are applied to the input image. Next, a region of interest (ROI) is identified from the pre-processed image using an optimized mask RCNN, with the weight function of the RCNN optimized via a new hybrid optimization algorithm- Cuckoo-Spider Optimization, combining Cuckoo Search (CS) and Social Spider Optimization (SSO). After ROI identification, feature extraction is performed, including texture features such as Gray-Level Run Length Matrix (GLRLM), Local rotation invariant Texture Pattern (LrTP), and an Augmented Local Directional Pattern (A-LDP) proposed in this work. Additionally, shape features such as area and perimeter, and color features such as color histogram are extracted. Finally, an optimized three-tier quantum convolutional neural network (O-TT-QCNN) is proposed for segmentation, which can handle complex and heterogeneous medical images. The experimental results demonstrate that the proposed method achieves state-of-the-art performance on several benchmark datasets.

Keywords Medical Image Segmentation · Optimized Mask RCNN · Hybrid Optimization Model · Improved LDP · Three-Tier Quantum CNN

1 Introduction

A crucial step in the analysis of medical imaging is often segmenting the images. Examples include segmenting the optic disc and spotting blood vessels in retinal imaging, segmenting cells in EM recordings, and segmenting the lungs and brain in CT and MRI scans [1, 2]. In the past, medical image segmentation was typically accomplished via edge detection and template matching. For instance, the optic disc is segmented using the circular or elliptical Hough transform. Both spleen segmentation in MRI sequence images and ventricular segmentation in brain CT images require template matching in the past, medical

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Extended author information available on the last page of the article

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Principal
Avanthi Institute of Engg. & Technology,
Tamaram arapalem Md.,
Anaka Pin: 531 113

Research Article

ESP32 BASED SMART INFORMATION FOR THE ATM SYSTEM

G. Karishma Rani[1], K. Anusha[2], D. Durga Prasad[3], A. Rohit Raj[4],
K. Janaki[5] and K. Ravi Kumar[6]

[1,2,3,4,5] UG Students, [6]Professor Department of ECE,
N.S. Raju Institute of Technology, Sontyam, Visakhapatnam, A.P, India

ARTICLE INFO

ABSTRACT

In today's global technology is strolling very fast. It is getting used anywhere in our everyday life to satisfy our requirements. We will increase the safety with right thoughts by way of using advanced era. This project objectives in designing a system which routinely detects the ATM cards and sends alerting message to the predefined quantity. Whilst a consumer lost his ATM card, he can notify the bank by using sending a message in order that he can notify the bank by using sending a message in order that he gets all of the facts where the card become operated formerly. Whilst any unauthorized person tries to perform the cardboard, an alert message can be sent to the pre-defined wide variety. That is executed by way of interfacing ATM machine with a GSM modem. GSM is used to tune the location wherein the cardboard is operated ultimate time so that the cardboard holder can get notified of the vicinity. We also can growth the safety with the aid of the usage of a vibration sensor that's attached to the ATM system. When an unauthorized man or woman attempts to thieve cash at night timea caution might be transmitted with the assist of vibration sensor and a message might be surpassed to the bank humans through GSM. The camera module ESP32 is used to capture the photos of the character during transactions and this picture could be uploaded to telegram routinely with this proposed device it is easy to get most security for this ATM card and also to ATM centres.

INTRODUCTION

In these days superior world, autonomous structures are enhancing rapidly. With this increasing generation protection-primarily based structures are also gambling a essential function within the gift world. In the current international ATM device is very crucial a part of our existence [1]. Anyone is dependent on this ATM device to run into their banking needs. ATM related crimes also are increasing daily, so to overcome this case GSM and GPS generation has been delivered in ATM gadget. The GSM component gives communication, allowing the users to know approximately the popularity in their misplaced ATM playing cards and also to send commands via SMS [2]. It facilitates to make our transactions less difficult which had been very hard in early instances. A GSM and GPS-based clever records device for the lost ATM cards should help the customers to track and block their cards through at once sending the cardboard info to the person. GPS machine is used for tracking the region, via a mobile app or SMS, customers can set off the GPS monitoring to find their card. A good way to tighten more safety in ATM centres we brought an ESP32 camera module for securing ATMs and to improve the security measures [3]. The ESP32 digicam affords real-time video feed which gives continuous surveillance of the ATM vicinity. It captures the pics every time a person enters into the ATM centre. We will access the digital camera feed via a cellular app or internet interface to reveal the surroundings, this stored photo could be uploaded to the server for future reference or for any research [4]. Here a vibration sensor is likewise added that is interfaced to the ATM to offer greater safety. at the side of GSM and GPS era we are combing ESP32 machine for non-stop monitoring to create a robust safety to the ATM gadget [5].

LITERATURE REVIEW

A complete literature overview became performed to explore the cutting-edge country of the ATM safety systems and pick out capability areas for improvement. The overview found out that most current structures depend upon proprietary software program and hardware additives, proscribing their scalability and compatibility with high protection. The evaluate revealed that most of the improvement has been accelerated for tracking the thefts and additionally for offering security to the ATM cards as well as ATM centers.

Corresponding author: **G. Karishma Rani**
N.S. Raju Institute of Technology, Sontyam, Visakhapatnam, A.P, India

Principal
Avanthi Institute of Engg. & Technology.
Tamaram Anakavarapalem Md.,
Anaka... Pin: 531 113