



**SUSTAINABLE
DEVELOPMENT
GOALS**

**Sri Krishna
College of Technology**

An Autonomous Institution
Affiliated to Anna University and Approved by AICTE
Accredited by NAAC with 'A' Grade
KOVAIPODUR CAMPUS, COIMBATORE - 641 042.

**VOL 24 - ISSUE 25
01 DEC - 07 DEC 2024**

SKCT supports the Sustainable Development Goals

SKCT DIGEST

THE PRIDE OF OUR REFLECTION

ISBN NUMBER



978-93-5895-815-7

Everything is theoretically impossible,
until it is done

- **Robert A. Heinlein**

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ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Audit

SKCT Academic and Administrative Audit (AAA)

A step towards excellence! The opening meeting, hosted by IQAC on 06.11.2024, was presided over by our Principal, Dr M G Sumithra, at Sri Krishna College of Technology, Coimbatore. Setting the stage for evaluating and enhancing standards, processes, and opportunities for growth.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Audit

Dr K Ramesh Kumar, Professor & Head, Department of Mechanical, Amrita Deemed University, Coimbatore, as a part of the Academic Administrative Audit visited R&D cell to assess the institute research and Development aspects. Insights on funding agency guidelines and institutional policies were reported.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Audit

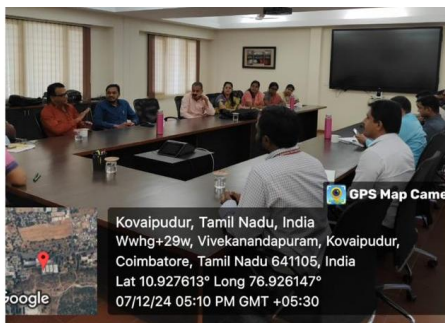
Controller of Examinations **Dr R.Sathyannarayan Sridhar**, Professor, Department of Civil Engineering from Coimbatore Institute of Technology audited Controller of Examinations office as part of Academic Administrative Audit to assess the Pre Examination and Post Examination processes.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Audit

SKCT Academic and Administrative Audit (AAA) Exit Meeting: A comprehensive review over two impactful days. Meeting assessed research initiatives, syllabus alignment, placement success, and academic outcomes. Key recommendations were made to further enhance academic rigor and placement strategies



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Placement

Mr Arun Kumar M, Student of Final B.Tech. ADS, received placement offer from **“WNS Vuram.”**



Mr Arun Kumar M
(727821TUAD006)
Batch : 2021 - 2025

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Student Participation

Ms Anushalakshmi S, Student of Second B.Tech. ADS, completed entrance test of Daksh Gurukul - IIT Guwahati.

Daksh Gurukul, IIT Guwahati

Entrance test

✓ Pay & Schedule ✓ Complete Test 3 Test Results

Congratulations Anushalakshmi S!

Congratulations! You have been invited to a one-on-one counselling session with the IIT Admissions team. If you are a student, please attend this session with your parents.

Wednesday, 4 December

15:30 16:00 16:30

Navigation icons: menu, home, back

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Students' Participation

Ms Anushalakshmi S and **Ms Lavanya N**, Students of Second B.Tech. ADS, planted trees in order to claim AICTE points.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Faculty Participation

As a part of the Academic Administrative Audit (AAA), the Department of Artificial Intelligence & Data Science at Sri Krishna College of Technology hosted **Dr Nagaraj P**, Assoc. Professor, Department of Computer Science and Engineering, Kalasalingam Academy of Research and Education.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Student Achievement

Ms Divya Dharshini, Student of Second B.Tech. ADS, has been selected for **One-year Minor Course in Artificial Intelligence (online mode)** at the **Indian Institute of Technology, Ropar**. Out of 18,000 students (approx) who participated in the qualifying Entrance Examination, only a few got selected, and Ms Divya Dharshini is one of them.



Ms Divya Dharshini N
727823TUAD030

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Students' Achievement

Ms Anusha Lakshmi S and Ms Lavanya N, Students of Second B.Tech. ADS, have been selected for **One-year Minor Course in Computer Science and Engineering & Artificial Intelligence (online mode)** at the **Indian Institute of Technology, Guwahati**. Out of 50,000 students (approx) who participated in the qualifying Entrance Examination, only a few got selected, and Ms Anusuya Lakshmi S and Ms Lavanya N were two among them.



Ms Lavanya N
727823TUAD051



Ms Anusha Lakshmi S
727823TUAD011

CSE (CYBERSECURITY)

Student Achievement

Mr Manoj S, Student of Third B.E. CSE (CYS), got selected in **One-year Minor Course on Artificial Intelligence** at Indian Institute of Technology, Ropar.

The certificate features a header with logos for Sri Krishna Institutions, Sustainable Development Goals, NAAC, NBA, NIRF, and the Institution's Innovation Council. The word "Congratulations" is written in a blue cursive font. Below it is a purple-bordered card for the Indian Institute of Technology Ropar, containing a photo of Manoj S, his name, course details, ID number, and valid date. The card also includes a signature and the name "Manoj S Card Holder". Below the card, the student's name "MANOJ S" is printed in bold, followed by his course and the reason for the award. At the bottom, there is a "DEVELOPED INDIA MISSION" logo and social media links for SKCT.

Indian Institute of Technology Ropar
भारतीय प्रौद्योगिकी संस्थान रोपर

Manoj S
Course : Minor in Artificial Intelligence
ID No : IITRPR_AI_20240123
Valid Upto : January 2026

MANOJ S
III Year B.E. CSE (Cybersecurity)
for getting selected to pursue
One Year Minor course in Artificial Intelligence
at
Indian Institute of Technology - Ropar

DEVELOPED INDIA MISSION
1947 TO 2047

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skct.edu.in

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CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

Faculty Participation

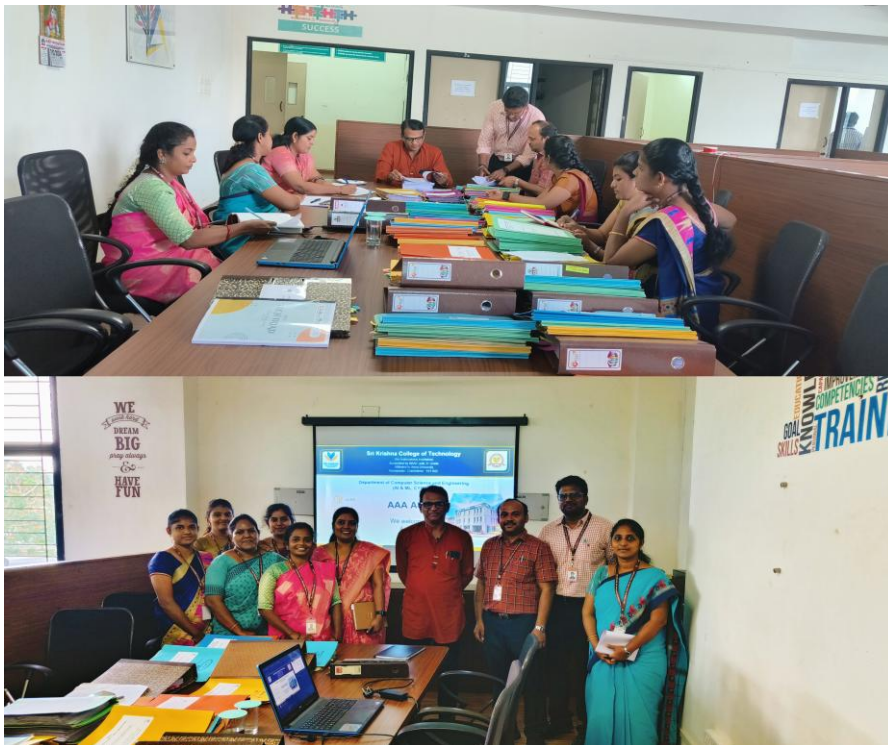
Ms Pavithra S, Asst. Professor, published & filed a patent on “**Smart Multi Control Autonomous Vehicle**” in IPR.

(12) PATENT APPLICATION PUBLICATION	(21) Application No.202441090849 A
(19) INDIA	
(22) Date of filing of Application :22/11/2024	(43) Publication Date : 29/11/2024
(54) Title of the invention : SMART MULTI-CONTROL AUTONOMOUS VEHICLE	
(51) International classification :G05D0001000000, G06Q0010080000, G06Q0010063100, G01C0021340000, G06V0020560000	(71)Name of Applicant : 1)M.ArunKumar Address of Applicant :Associate Professor,Department of Mechatronics Engineering Hindusthan College of Engineering and Technology (Autonomous),Coimbatore-641032 ----- 2)S PAVITHRA 3)Dr.P.Vijayakumar 4)R. VIJAY 5)A.ARAVINDHAN 6)K.KATHIRESAN 7)K.SATHIVAKUMARAN Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)M.ArunKumar Address of Applicant :Associate Professor,Department of Mechatronics Engineering Hindusthan College of Engineering and Technology (Autonomous),Coimbatore-641032 ----- 2)S PAVITHRA Address of Applicant :Assistant Professor Department Of Internet of Things. Sri Krishna College of Technology, Coimbatore-641042 Coimbatore ----- 3)Dr.P.Vijayakumar Address of Applicant :Assistant Professor Department of Aeronautical Engineering Nehru Institute of Technology Coimbatore - 641105 Coimbatore ----- 4)R. VIJAY Address of Applicant :Assistant Professor Department Of Mechanical Engineering, Arulmugan College Of Engineering, Thennilai, Aravakurichi Taluk, Karur District-639206, Karur ----- 5)A.ARAVINDHAN Address of Applicant :Assistant Professor, Department Department Of Robotics And Automation Engineering, Dhirajlal Gandhi College Of Technology , Salem. - 637503 Salem ----- 6)K.KATHIRESAN Address of Applicant :Lecturer, Department Of Mechanical Engineering, Mahendra Polytechnic College,(Namakkal,Di)- 637503. Namakkal ----- 7)K.SATHIVAKUMARAN Address of Applicant :Lecturer Department Of Automobile Engineering, K.S.R Polytechnic College . KSR Kalvi Nagar, Tiruchengode Namakkal-637215 Namakkal -----
(86) International Application No :NA Filing Date :NA (87) International Publication No :NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	
(57) Abstract : The advent of smart multi-control autonomous vehicles represents a revolutionary leap in transportation technology, promising to reshape urban mobility and road safety. This cutting-edge innovation combines advanced sensors, artificial intelligence, and multi-modal control systems to create vehicles capable of navigating complex environments without human intervention. Recent market projections underscore the rapid growth and potential of this sector. The global autonomous vehicles market is estimated to grow by USD 974.5 billion from 2024-2028, with a remarkable CAGR of 58.78%1. This explosive growth is driven by increasing demand for vehicle autonomy from OEMs and the development of autonomous vehicles for cab and parcel delivery services. The market for near-autonomous passenger cars is similarly poised for significant expansion, with an estimated growth of USD 962.1 billion from 2024-2028 and a CAGR of 60.29%5. This growth is fueled by the rising popularity of semi-autonomous vehicles and increased fundin No. of Pages : 8 No. of Claims : 4	

CSE (AIML CYS & IoT)

AAA Audit

As a part of Academic and Administrative Audit (AAA) Dr B Thiagarajan, Joint Registrar, IIT Palakkad visited the Computing Clusters (AIML CYS & IoT) on 07 December 2024. He discussed regarding the process followed and provided valuable suggestions to strengthen the same with the Members of Faculty.



CIVIL ENGINEERING

Faculty Achievements

Dr P Subashree and Mr R Ramesh, published a paper on **“Ceramic Tile Mix Optimization: Green Innovations with Red Mud, Fly Ash and Ceramic Waste”** in the Journal of Environmental Protection and Ecology.



CERAMIC TILE MIX OPTIMISATION: GREEN INNOVATIONS WITH RED MUD, FLY ASH, AND CERAMIC WASTE

Journal: *Journal of Environmental Protection and Ecology* 25(7) (2024) Pages: 2224 - 2233

▼ Authors

SUBASHREE, P., RAMESH, R., THENMOZHI, S., KUMAR, D. PRADEEP, VIVEK, S.

▼ Abstract

This study investigates the effect of numerous blend ratios on the residences of tiles through incorporating crimson dust, fly ash, and waste ceramic powder. A total of 9 mix ratios have been explored, with purple dust content ranging from 10 to 20(%) in increments of 5(%), fly ash various from 10 to 20(%) in 5(%) increments, waste ceramic powder starting from 60 to 80(%) addition to its alkali activators with 4 morality is also delivered. The objective changed into to perceive the most effective aggregate of those substances to enhance the overall performance of tiles. Experimental effects revealed that the M20 mix, including 20(%) red mud, 15(%) fly ash, and 65(%) waste ceramic powder, exhibited superior quality. The comprehensive analysis blanketed assessments of compressive energy, durability, and workability. The M20 mix validated an outstanding stability between strength and sustainability, showcasing the capacity of incorporating industrial by using-products like red mud and fly ash in tile formulations. These findings make a contribution to the continuing efforts to broaden environmentally friendly and economically feasible tile mixes with advanced performance characteristics.

▼ Keywords

fly ash, red mud, waste ceramic powder and alkali activators

▼ Cite this article

SUBASHREE, P., RAMESH, R., THENMOZHI, S., KUMAR, D. P., & VIVEK, S. (2024). CERAMIC TILE MIX OPTIMISATION: GREEN INNOVATIONS WITH RED MUD, FLY ASH, AND CERAMIC WASTE. In *Journal of Environmental Protection and Ecology* (Vol. 25, Issue 7, pp. 2224–2233).

CIVIL ENGINEERING

Placement

Mr Dhavanesh, Student of Final, B.E. Civil Engineering, has been recruited by **M/s Drsti Precast**, for both an internship and a full-time job opportunity.



The certificate features the following content:

- Logos for Sri Krishna Institutions, Sustainable Development Goals, NAAC, NBA, nirf, and Institution's Innovation Council.
- Sri Krishna College of Technology**
An Autonomous Institution | Affiliated to Anna University
KOVAIPODUR CAMPUS, COIMBATORE – 641 042.
- Congratulates*
- Portrait of **DHAVANESH** (727821TUCV007)
- Batch 2021-25/CIVIL**
- for getting Placement offer with **DRSTI** (GENE TO CONCRETE)

CIVIL ENGINEERING

Placement

Mr Jaya Krishna, Student of Final, B.E. Civil Engineering, has been recruited by Blackstone Group Technologies Pvt. Ltd. for the position of CAD Engineer.



BLACKSTONE GROUP TECHNOLOGIES PVT. LTD.,

Kochi: Technology Park, Door No. SP-31A, 1st Floor, 2nd Main Road, Amtham Industrial Estate, Chennai - 600 056.
Tel: (+91) 44 4596 5100 E-mail: info@bgtk.com Website: www.bgtk.com CDN #: U72200TN200001C344549

REF/BGT/5000-02/REC/122024-02

4th Dec 2024

Mr. Jaya Krishna, D
No: 228/2, Sinthalakarai,
Elthiparam,
Thoonkudi-628902
Ph No: 6385468556

Sub: Recruitment - "CAD Engineer"

Mr. Jaya Krishna,

Further to the discussions you had with us recently, we are pleased to offer you a position as "CAD Engineer" with us on the following terms and conditions.

1. You will be under training for a period of 6 months from the date of joining. During the training period your performance will be evaluated periodically. You are expected to achieve the minimum required performance level set by the company, failing which the company will have the option to extend your training period on the same salary for a further period. On satisfactory completion of your training, you will be considered as confirmed.
2. Your place of posting will be in Chennai. You will have to work in shifts as per the timings of the company if asked to do so.
3. You will be paid a CTC of Rs.213216/- per annum (Rupees Two Lakh Thirteen Thousand Two Hundred and Sixteen only) as per Annexure, subject to statutory deductions and Income Tax if applicable as per norms. The CTC shall be reviewed during the annual Performance review.
4. During the training period you will be eligible for one and half days per month of casual leave. After the training period the leave rules of the company will be applicable.
5. During your working with us, you shall maintain strict confidentiality and not disclose or divulge any trade secrets, policies or any other confidential information of which you gain knowledge during the course of your employment, to any other person or company.
6. During your tenure of employment you shall be governed by the rules and regulations of the company.



JCH

COMPUTER SCIENCE AND ENGINEERING

Faculty Publication

Ms M Kavitha Margret M, Asst. Professor, published an article on **“Blockchain-enabled Resilient Byzantine Fault Tolerance Consensus Mechanism For Supply Chain Management”** in the International Journal of Web and Grid Services with an Impact Factor of 4.3, Q1 Journal, Inderscience Publishers, vol no 20, issue 4 pp 438-459.



INDERSCIENCE PUBLISHER
Linking academia, business and industry through research

International Journal of Web and Grid Services - 2024, Vol 20, No 4

Title: Blockchain-enabled resilient Byzantine fault tolerance consensus mechanism for supply chain management

Authors: M. Kavitha Margret, E. Golden Jubin, V. Harold Robinson

Addresses: Department of Computer Science and Engineering, Sri Krishna College of Technology, Coimbatore, India
Department of Computer Science and Engineering, Anna University Regional Campus, Tirunelveli, India
Department of Computer Science and Engineering, Francis Xavier Engineering College, Tirunelveli, India

Abstract: A blockchain is a shared ledger that keeps track of all the transactions in a network. This evolving technology plays a major role in enhancing smart city services, including food tracking and supply-demand synchronization. We proposed a smarter resilient fault tolerance consensus mechanism working on the principle of state machine replicas to solve supply chain management issues and ensure the blockchain's strength, resilience, reliability, and durability. In the proposed approach, the consensus mechanism of blockchain provides exclusive track histories of transactions. In the smarter resilient practical Byzantine fault tolerance (SR-PBFT) approach, nodes are divided into two major categories: trust and faulty nodes with high and low node reputations. An SR-PBFT algorithm achieved high efficiency and scalability and reduced communication overhead. Finally, SR-PBFT algorithm performance was evaluated with trustworthy practical Byzantine fault tolerance (TPBFT), enhanced practical Byzantine fault tolerance (ePBFT), fast Byzantine fault tolerance (FBFT), and redundant Byzantine fault tolerance (RBF-T).

Keywords: blockchain, supply chain, consensus mechanism, practical Byzantine.

DOI: 10.1504/IJWGS.2024.143175
International Journal of Web and Grid Services, 2024 Vol 20 No 4, pp 438 - 459
Received: 08 Apr 2024
Accepted: 29 Jun 2024
Published online: 05 Dec 2024

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COMPUTER SCIENCE AND ENGINEERING

Faculty Publication

Ms G Sandhya, Asst. Professor, received a certificate of appreciation in recognition of an outstanding contribution in Peer-Reviewing the papers submitted to 2024 - IEEE International Conference on Intelligent Systems, Smart and Green Technologies (ICISSGT-2024) held during 02-03 November 2024 organised by IEEE Vizag Bay Section at Dr Y V S Murthy Auditorium, Andhra University, Visakhapatnam.



COMPUTER SCIENCE AND ENGINEERING

Faculty Participation

Dr N Saranya, Asst. Professor, completed a course on **“Network and Security”** through Infosys Springboard.



COMPUTER SCIENCE AND ENGINEERING

Student Participation


Ms K Thilagavathi, Student of Third B.E. CSC, participated in India's largest skill contest on **"Introduction to Generative AI"** and achieved a top score of 1% (99.51), and won a merit certificate through AWS.



COMPUTER SCIENCE AND ENGINEERING


Student Participation

Dhiyanesh S, Student of Second B.E. CSE, completed NPTEL online certification on “**Cloud Computing**” with Elite score of 73%.



Elite

NPTEL ONLINE CERTIFICATION
(Funded by the MoE, Govt. of India)



Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to
DHIYANESH S
for successfully completing the course


Cloud Computing

with a consolidated score of **73** %


Online Assignments	24.06/25	Proctored Exam	48.89/75
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Total number of candidates certified in this course: **30816**


Jul-Oct 2024
(12 week course)




Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



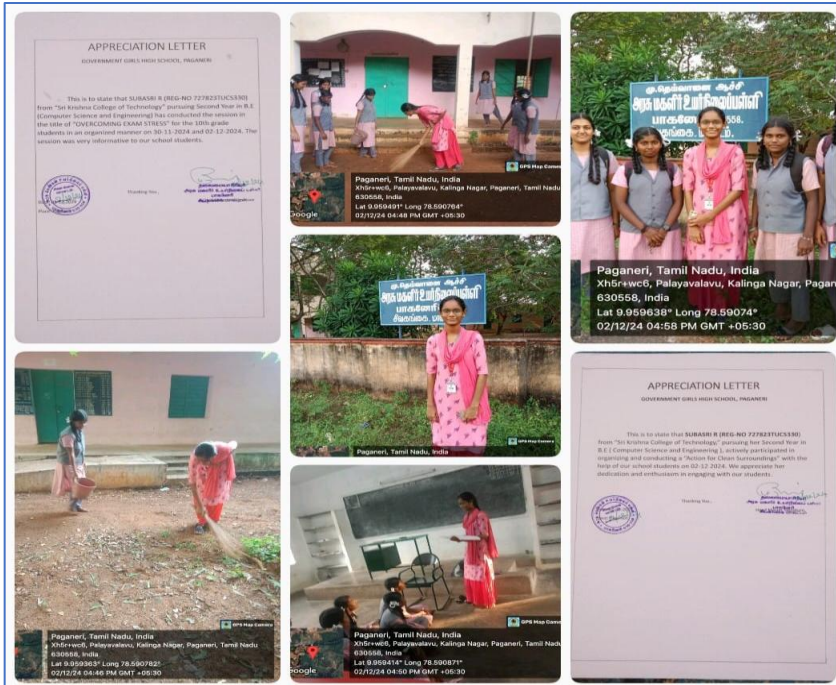
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Free Education. Zero Fees.

Roll No: NPTEL24CS118S1051001205 To verify the certificate  No. of credits recommended: 3 or 4

COMPUTER SCIENCE AND ENGINEERING

Student Participation

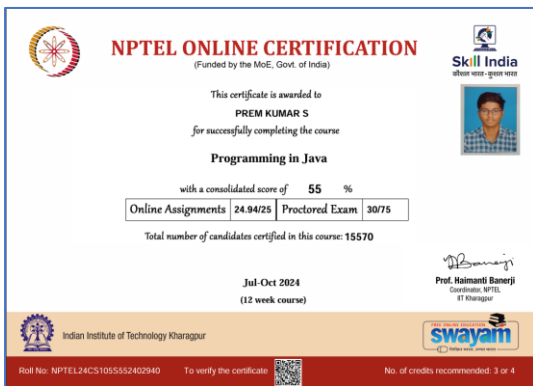
Ms Subasri R, Student of Second B.E. CSE, conducted a session on **“Overcoming Exam Stress”** for 10th-grade students and initiated a session on **“Action of Clean Surroundings”** as part of AICTE activity points.



COMPUTER SCIENCE AND ENGINEERING

Student Participation

Mr Premkumar S, Student of Second B.E. CSE, completed NPTEL online certification course on **“Programming in Java”** with a score of **55%** and attended a workshop on **“Generative AI”** organised by Amrita Vishwa Vidyapeetham, Coimbatore.



COMPUTER SCIENCE AND ENGINEERING

Students' Certification

Ms Divyadharshini S, Student of Second B.E. CSE, completed NPTEL online certification course on **“Cloud Computing”** with a Elite score of 70%.



Ms Gowshika R S, Student of Second B.E. CSE, completed NPTEL online certification course on **“Cloud Computing”** and with a Elite score of 63%.



COMPUTER SCIENCE AND ENGINEERING

Students' Certification

MS Shalini K, Student of Second B.E. CSE, completed NPTEL online certification course on **“Programming in Java”** with score of 55%



Ms Srimathi V, Student of Second B.E. CSE, completed NPTEL online certification course on **“Programming in Java”** with score of 61%.



COMPUTER SCIENCE AND ENGINEERING

Students' Certification

Ms Dharshini N , Student of Third B.E. CSE, completed NPTEL certification course on **“Python for Data Science”** with **Elite**.



Mr Anish Ram A, Student of Third B.E. CSE, completed NPTEL certification course on **Theory of Computation** with **Elite + Silver**.



Ms Gayathri T, Student of Third B.E. CSE, completed NPTEL certification course on **“Python for Data Science”** with **Elite**.



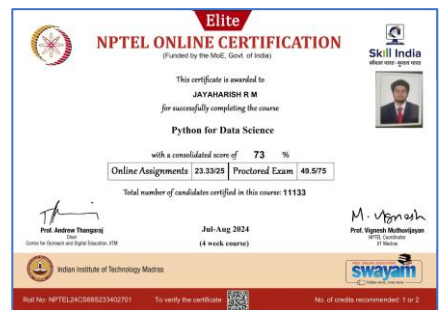
COMPUTER SCIENCE AND ENGINEERING

Students' Certification

Mr Harinarayanan N, Student of Third B.E. CSE, completed NPTEL certification course on **“Python for Data Science.”**



Mr Jayaharish R M, Student of Third B.E. CSE, completed NPTEL certification course on **“Python for Data Science”** with **Elite**.



Computer Science and Engineering

Student Participation

Ms K Thilagavathi, Student of Third B.E. CSE, has been awarded with the Certificate of Membership, as an active member of the Global Society For Technical Education and attended a one-day workshop on **“Exploring Higher Studies Opportunities in Universities in UK and France.”**



Computer Science and Engineering

AAA Audit

The Department of Computer Science and Engineering attended Academic and Administrative Audit (AAA) on 07 December 2024, presided by **Dr.B.Thiyagarajan**, Joint Registrar, IIT Palakkad.





SKCT supports the Sustainable Development Goals



SUSTAINABLE DEVELOPMENT GOALS



NAAC



NBA NATIONAL BOARD OF ACCREDITATION CSE | CIVIL | EEE | ECE MECH | IT



nirf Band 151-200 Engineering 2024



INSTITUTION'S INNOVATION COUNCIL (University of Education Institute) ★★★★★

SKCT DIGEST

VOL 24 - ISSUE 25

01 DEC - 07 DEC 2024

ELECTRONICS AND COMMUNICATION ENGINEERING

Student Participation

Mr R Sivagunanithi, Student of Third B.E. ECE, completed a 12-week course on “**Data Structure and Algorithms using Java**” through NPTEL and secured **ELITE** distinction.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



Skill India
कौशल भारत - कुशल भारत

This certificate is awarded to

SIVAGUNANITHI R

for successfully completing the course



Data Structure and Algorithms using Java

with a consolidated score of **60** %

Online Assignments	22.47/25	Proctored Exam	37.5/75
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Total number of candidates certified in this course: **5081**

Jul-Oct 2024

(12 week course)

Banerji

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL24CS96S252401445

To verify the certificate



No. of credits recommended: 3 or 4

ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr P Rajasekar, Professor, published a research article on “**Realization of Energy Efficient GF Xtime Multiplier using Quantum Dot Cellular Automata (QCA) for AES-MixColumn**” in the Journal of Computational Electronics (Springer), 2024.

Journal of Computational Electronics (2025) 24:4
<https://doi.org/10.1007/s10825-024-02248-4>



Realization of energy efficient GF Xtime multiplier using quantum dot cellular automata (QCA) for AES-MixColumn

P. Rajasekar¹ · H. Mangalam² · K. H. Shakthi Murugan³ · K. Kalaiselvi⁴

Received: 19 December 2023 / Accepted: 24 October 2024
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Abstract

Recent advances in VLSI technology have led to the introduction of Quantum dot Cellular Automata (QCA) technology as a possible alternative to CMOS technology. This is owing mostly to its tiny feature size, high operating frequency, and low power consumption. During the preliminary research stage, QCA has been used to execute diverse models of combinatorial and sequential circuits, which serve as the fundamental functional components in a wide range of applications. Currently, research is focusing on the implementation of application-oriented architectures using QCA. The motivation behind this research work is to incorporate Galois Field (GF) functions into the AES Mix-Columns operation. We have proposed an Xtime multiplier implemented using QCA technology and analyzed the multiplier using various XOR models of QCA.

Keywords AES MixColumn · Reversible logic · Quantum cost · Cryptography · GF multiplier · Quantum dot cellular automata · QCA designer

1 Introduction

Recent advances in VLSI technology have resulted in the introduction of quantum dot cellular automata (QCA) technology as an alternative to CMOS technology. Quantum-dot

cellular automata (QCA) can build terahertz-frequency integrated circuits (ICs) that have high density and low power consumption. This is achieved by combining QCA cells to form logic gates and wire. QCA-based circuits provide high performance, high reliability, and low power consumption [1–7]. During the preliminary research stage, QCA has been used to execute diverse models of combinatorial and sequential circuits, which serve as the foundational components in a range of applications [8–13]. Currently, scholars are directing their attention toward the execution of application-oriented designs utilizing QCA. Cryptography is the primary enabler of secure data transfer in the information and communication fields. These cryptography methods are classified into different categories based on their operation, key used for encryption and decryption process. A stream cipher and block ciphers are two major categories based on their data and key taken. In block cipher, based on the key methods, it is called symmetric and asymmetric methods, also known as private key and public key methods.

Today's modern secure cryptography algorithms use more complex functions such as permutation, substitution, and mixcolumns. These functions make encryption and decryption more secure compared to simple encryption algorithms.

In the history of cryptography, many algorithms have been proposed and implemented in various applications.

Communicated by Gyorgy Csaba.

H. Mangalam and K. H. Shakthi Murugan have contributed equally to this work.

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² ECE, Sri Ramakrishna Engineering College, Coimbatore 641022, Tamilnadu, India

³ ECE, Narayana Engineering College Gudur, Gudur 524 101, AndhraPradesh, India

⁴ ECE, Hindusthan College of Engineering and Technology, Coimbatore 641032, Tamilnadu, India

Published online: 02 December 2024



ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Achievement

Dr P Rajasekar, Professor, received a certificate of appreciation for peer-reviewing papers for ICISSTG-2024, organised by the Andhra University, Visakhapatnam during 02 - 03 November 2024.



ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Participation

Dr K Shanthi, Assoc. Professor, **Dr S Prema**, Asst. Professor, and **Dr M Tamil Nidhi**, Asst. Professor, attended an FDP on “**Emerging Technologies in Power Energy: Shaping the future of Sustainable solutions**” organised by the Dream Institute of Technology, Kolkata during 19 - 23 November 2024.



ELECTRONICS AND COMMUNICATION ENGINEERING

AAA Audit

As part of the Academic Administrative Audit (AAA), the Department of Electronics and Communication Engineering at Sri Krishna College of Technology hosted **Dr E Konguvel, Assoc. Professor, Department of ECE, VIT, Vellore.**



ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr K Bagyalakshmi, Asst. Professor, published a book on “Internet of Things (IoT for Engineers: Fundamental Approach)” in the Tech Discovery Hub.

TECH DISCOVERY HUB

(Registered Under MSME)

Government of India



PUBLICATION CERTIFICATE

The Tech Discovery Hub Publishing authority is hereby awarding this certificate to “Dr.K.BAGYALAKSHMI” in recognition of the text book entitled “INTERNET OF THINGS (IoT) FOR ENGINEERS: FUNDAMENTAL APPROACH” published as first edition.

ISBN: 978-81-975326-9-6

Year: 2024



Issuing Authority

ELECTRICAL AND ELECTRONICS ENGINEERING

Faculty Participation

Dr Abinaya N S, Ms Jeevitha K and Dr Priyadharshini J, the Members of Faculty, attended One-week FDP on “Recent Advancements in AI & IOT – Industry Perspective” organised by Periyar Maniammal Institute of Science & Technology, Thanjavur during 25-30 November 2024.



ELECTRICAL AND ELECTRONICS ENGINEERING

Faculty Participation

Dr Magdalin Mary D, Asst. Professor, published a Journal article on "Parameter Estimation of Three-Diode Photovoltaic Model using Reinforced Learning-Based Parrot Optimizer with an Adaptive Secant Method" in Sustainability Journal on 04 December 2024.



Article

Parameter Estimation of Three-Diode Photovoltaic Model Using Reinforced Learning-Based Parrot Optimizer with an Adaptive Secant Method

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Abstract: In the developing landscape of photovoltaic (PV) technology, accuracy in simulating PV cell behaviour is dominant for enhancing energy conversion efficiency. This study introduces a new approach for parameter estimation in the three-diode PV model, a basis in the representation of PV cell characteristics. The methodology combines a reinforced learning-based parrot optimizer (RLPO) with an adaptive secant method (ASM) to fine-tune the parameters governing the PV model. The RLPO algorithm is inspired by the mimetic ability of parrots, i.e., foraging, staying, communicating, and fear noticed in trained Pyrrhura Molinae parrots, as it influences reinforced learning mechanisms to adaptively explore and exploit the search space for optimal parameter sets. Simultaneously, the ASM enhances the convergence rate through an iterative adjustment mechanism, responding to the curvature of the objective function, thereby ensuring accuracy in parameter estimation. The combination of the RLPO and ASM addresses the complexities and non-linearities inherent in the PV model, offering a robust framework for parameter estimation. Through extensive simulations, the proposed method demonstrated superior performance in terms of accuracy, convergence speed, and reliability when compared to existing algorithms. The empirical results emphasize the effectiveness of integrating a reinforced learning strategy with an adaptive method in handling the details of PV model parameterization. These outcomes show that the algorithm can handle issues related to optimization in PV systems, opening the door to progress in sustainable energy technologies.

Keywords: adaptive secant method; non-linear optimization; parameter estimation; reinforced learning-based parrot optimizer



Citation: Kullampalayam Murugayan, N.; Chandrasekaran, K.; Devapitchai, M.M.; Senjyu, T. Parameter Estimation of Three-Diode Photovoltaic Model Using Reinforced Learning-Based Parrot Optimizer with an Adaptive Secant Method. *Sustainability* **2024**, *16*, 10603. <https://doi.org/10.3390/su162310603>

Academic Editor: Pablo Garcia Trivino

Received: 21 October 2024

Revised: 22 November 2024

Accepted: 30 November 2024

Published: 3 December 2024



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1. Introduction

The global shift towards renewable energy sources highlights the importance of photovoltaic (PV) technologies in meeting the world's increasing energy demands. The transition to renewable energy is essential to achieving global sustainability goals, and PV systems are at the forefront of this transformation. At the heart of these technologies lies the need for accurate PV models that can predict the performance of PV cells under various environmental conditions. Such models are crucial for designing and optimizing PV systems for maximum energy conversion efficiency [1–3]. Among the array of PV models developed, the single-diode model (SDM), double-diode model (DDM), and three-diode model (TDM) are key in understanding and simulating PV cell behaviour [4,5]. The SDM provides a basic representation, focusing on essential semiconductor physics to simulate

ELECTRICAL AND ELECTRONICS ENGINEERING

Students' Achievement

Mr Vashishdsdh Ravichandran, Mr Mohana Sundaram S, Ms Shwetha M, Mr Ravi Raaghav P, Mr Sri Hari Durgas B and Ms Siva Shankari R, Students of Third B.E. EEE, have been selected for "Smart India Hackathon 2024 (SIH) Hardware Edition" for the problem statement given by Ministry of Jal Shakti, Department of Water Resources, RD & GR, Govt. of India.



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Meet the Selected #SIH
HARDWARE EDITION



Team Name: HEXA HUSTLES

Team ID: 10713



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Batch 22-26/EEE



MOHANA SUNDARAM S
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Batch 22-26/EEE



SHWETHA M
727822TUEE140
Batch 22-26/EEE



RAVI RAAGHAV P
727822TUEE129
Batch 22-26/EEE



SRI HARI DURGAS B
727823TUEE702
Batch 22-26/EEE



SIVA SHANKARI R
727822TUEE142
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MENTORS

Dr. Dilip Kumar S, AP/EEE
Dr. Suresh K P, AP/EEE

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ELECTRICAL AND ELECTRONICS ENGINEERING

Event Organised

The Department of EEE organised a Six-day ATAL FDP on “Next generation Smart Grids for Sustainable Power Systems: The Path from Industry 4.0 to 5.0” sponsored by AICTE, SKCT, Coimbatore during 02-07 December 2024.

AICTE Training and Learning Academy (ATAL)

 Sponsored One Week

 Online Faculty Development Programme

 on

 Next Generation Smart Grids for Sustainable Power Systems: The Path from Industry 4.0 to 5.0

 02.12.2024 to 07.12.2024

DAY 6 | SESSION 1 TITLE

"Digital Twin Technology and Smart Grid Operations"

Resource Person

Kinde Anlay Fante

 Associate Professor

 Faculty of Electrical and Computer Engineering

 Jimma University, Ethiopia

Date: 02.12.2024

Time: 09:00 pm to 02:00 pm

AICTE Training and Learning Academy (ATAL)

 Sponsored One Week

 Online Faculty Development Programme

 on

 Next Generation Smart Grids for Sustainable Power Systems: The Path from Industry 4.0 to 5.0

 02.12.2024 to 07.12.2024

DAY 5 | SESSION 1 TITLE

"Policy and Regulation for Sustainable Smart Grids"

Resource Person

Dr. Devaraj D

 Professor and Dean, Electrical and Electronics Engineering

 Kalasalingam Academy of Research and Education

 Virudhunagar

Date: 06.12.2024

Time: 06:00 pm to 02:30 pm

This are viewing: Dr. Prayabharati JITTANI's screen # 1 - 3102

Smart Grid & Smart City IoT Solutions

From source to load we make the grid efficient and reliable
From downtown to suburb, we deliver urban efficiency today

Smart Grid Operator
"T/O of integration from field to control center to enterprise"

Smart Generator
"Producing power efficiently"

Energy Services Provider
"Bridging supply & demand"

Renewable Operator
"Making renewables dispatchable"

Smart Buildings & Homes

Smart Energy

Smart Water

Smart Mobility

Smart Public Services

Smart Data Center

Smart Integration

INFORMATION TECHNOLOGY

Faculty Participation

Mr C Rajesh kumar, Asst. Professor, attended One-week National level FDP on “**Recent Advancements AI&IOT Industry Perspective**” organised by Periyar Maniyammai Institute of Science & Technology during 25-30 November 2024.



INFORMATION TECHNOLOGY

Placement

Ms Abi C and Ms Lavanya S B, Students of Final B.Tech. got selected for an Internship at **Datazoic.**



Ms Abi C



Ms Lavanya S B

INFORMATION TECHNOLOGY

Faculty Publication

Ms Sangeetha, Asst. Professor, participated in the 11th International Electronic Conference on “**Sensors and Applications**” during 26-28 November 2024.



INFORMATION TECHNOLOGY

Faculty Publication

Dr K Suresh Kumar, Asst. Professor, published a book chapter on “**Authentication and Access Control Schemes in 5g-based Healthcare Systems**” in the Book *Secure Big-data Analytics for Emerging Healthcare in 5G and Beyond: Concepts, Paradigms, and Solutions*.

The screenshot shows the IET website interface. At the top, there is a navigation bar with the IET logo and the text 'The Institution of Engineering and Technology'. To the right of the logo is a search bar with the placeholder text 'Enter words/phrases/DOI', a search icon, and a shopping cart icon. Further right are links for 'Login | Register'. Below the navigation bar is a menu with categories: 'Journals & magazines', 'Books', 'Conferences', 'Videos', and 'About'. On the far right of this menu is 'IET Sites'. The main content area shows a breadcrumb trail: 'Home / Books / Secure Big-data Analytics for Emerging Healthcare in 5G and Beyond: Concepts, paradigms, and solutions / Authentication and access control schemes in 5G-based healthcare systems'. Below this is a book cover image with the title 'Secure Big-data Analytics for Emerging Healthcare in 5G and Beyond: Concepts, paradigms, and solutions'. Underneath the cover are navigation links: '< Previous chapter' and 'Next chapter >'. The chapter details are listed: 'Chapter Item | 26 November 2024', 'Chapter 10', and the title 'Authentication and access control schemes in 5G-based healthcare systems'. At the bottom, the authors are listed: 'Authors: T. Ananth Kumar, A. Kathiravan, P. Kanimozhi, Sunday A. Ajagbe, K. Suresh Kumar, and R. Rajmohan | [Authors Info & Affiliations](#)'. The publication information is: 'Publication: Secure Big-data Analytics for Emerging Healthcare in 5G and Beyond: Concepts, paradigms, and solutions' with the DOI link 'https://doi.org/10.1049/PBHE063E_ch10'.

INFORMATION TECHNOLOGY

Students' Activity

Mr Pranesh D P

Mr Pranav Raja N

Mr Pranesh S

Mr Sudhakar N

Students of Second B.Tech. IT conducted a session on “**Basics of Computer**” for the 9th grade students in GHS Mukasi Pidariyur, Chennimalai on 06 December 2024.



INFORMATION TECHNOLOGY

Faculty Participation

Ms T Sangeetha, Asst. Professor, completed a course on **“Basics of Python”** through Infosys Springboard on 07 December 2024.



COURSE COMPLETION CERTIFICATE

The certificate is awarded to

Ms. T. Sangeetha Ms. T. Sangeetha

for successfully completing the course

Basics of Python

on December 7, 2024



Issued on: Saturday, December 7, 2024
To verify, scan the QR code at <https://verify.onwingspan.com>



Congratulations! You make us proud!

Thirumala Arohi
Executive Vice President and Global Head
Education, Training & Assessment (ETA)
Infosys Limited

INFORMATION TECHNOLOGY

Student Outreach Activity

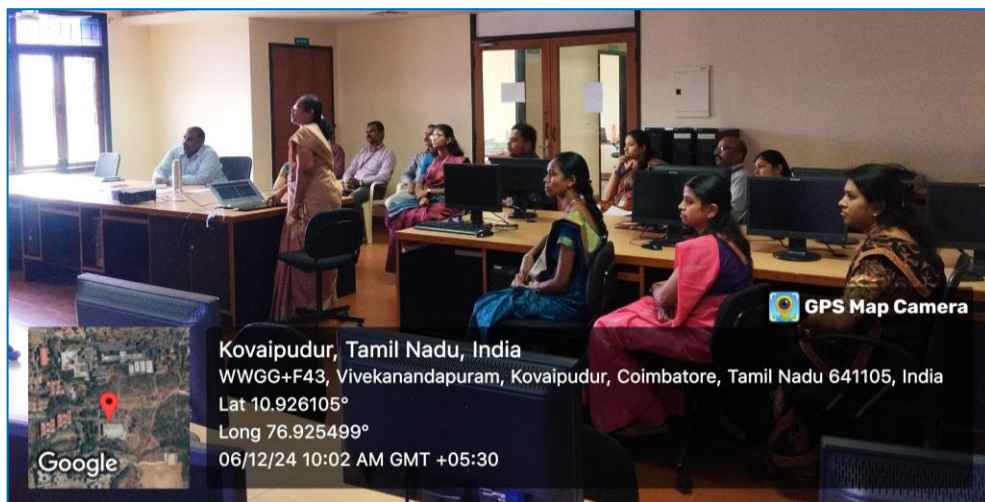
Mr Kesava Srri Tattha K A V, Student of Second IT, conducted a session on **“Road Safety”** to the Students of PUMS, Thirubhuvanam on 04 December 2024.



INFORMATION TECHNOLOGY

AAA Audit

Dr Nagaraj P, Assoc. Professor, Department of Computer Science and Engineering, Kalasalingam Academy of Research and Education visited the Department on 06 December 2024 as part of the Academic Administrative Audit to assess the department's curricular aspects, Teaching Learning Practices, research initiatives and to provide guidance on enhancing curriculum design and research quality. He suggested a few best practices that could be included to enhance the programming skills of the students.



MECHANICAL ENGINEERING

Faculty Participation

Dr V S Sreenivasan and Mr Prabhu M K the Members of Faculty, attended the ATAL Faculty Development Program on “**Digital Frontiers in Manufacturing Excellence**” at Sri Ramakrishna Engineering College, Coimbatore.



MECHANICAL ENGINEERING

Faculty Participation

Mr Prabhu M K, Asst. Professor, visited the AQUA Group Foundry Unit in Coimbatore to study robotics, AGVs, and ARAS technologies used in automation and material handling, enhancing his understanding of modern industrial practices.



MECHANICAL ENGINEERING

Students' Participation

Mr Aadhithya K, Mr Kabilan R, Mr Mohamed Ashwaaq K and Mr Vighnesh S, Students of B.E. Mechanical Engineering, visited Aalpha Systems and Engineering Pvt. Ltd., Bengaluru, as part of their project on Rear Axle Production. They interacted with **Mr Ananda Ganesh R, Supplier Quality Assurance**, to identify and analyse industrial challenges.



MECHANICAL ENGINEERING

Faculty Participation

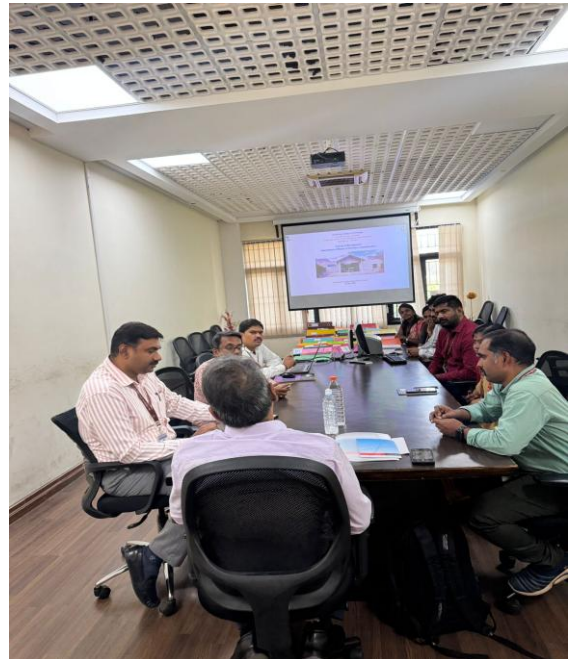
As part of the Academic Administrative Audit (AAA), the Department of Mechanical Engineering at Sri Krishna College of Technology hosted **Dr K Ramesh Kumar, Chairman and Professor**, Department of Mechanical Engineering, Amrita Vishwa Vidhyapeetham, Coimbatore.



MASTER OF BUSINESS ADMINISTRATION

Faculty Participation

As part of the Academic Administrative Audit (AAA), **Dr K Ramesh Kumar**, Professor and Head, Department of Mechanical Engineering at Amrita Vishwa Vidhyapeetham, Coimbatore visited Department of MBA. .



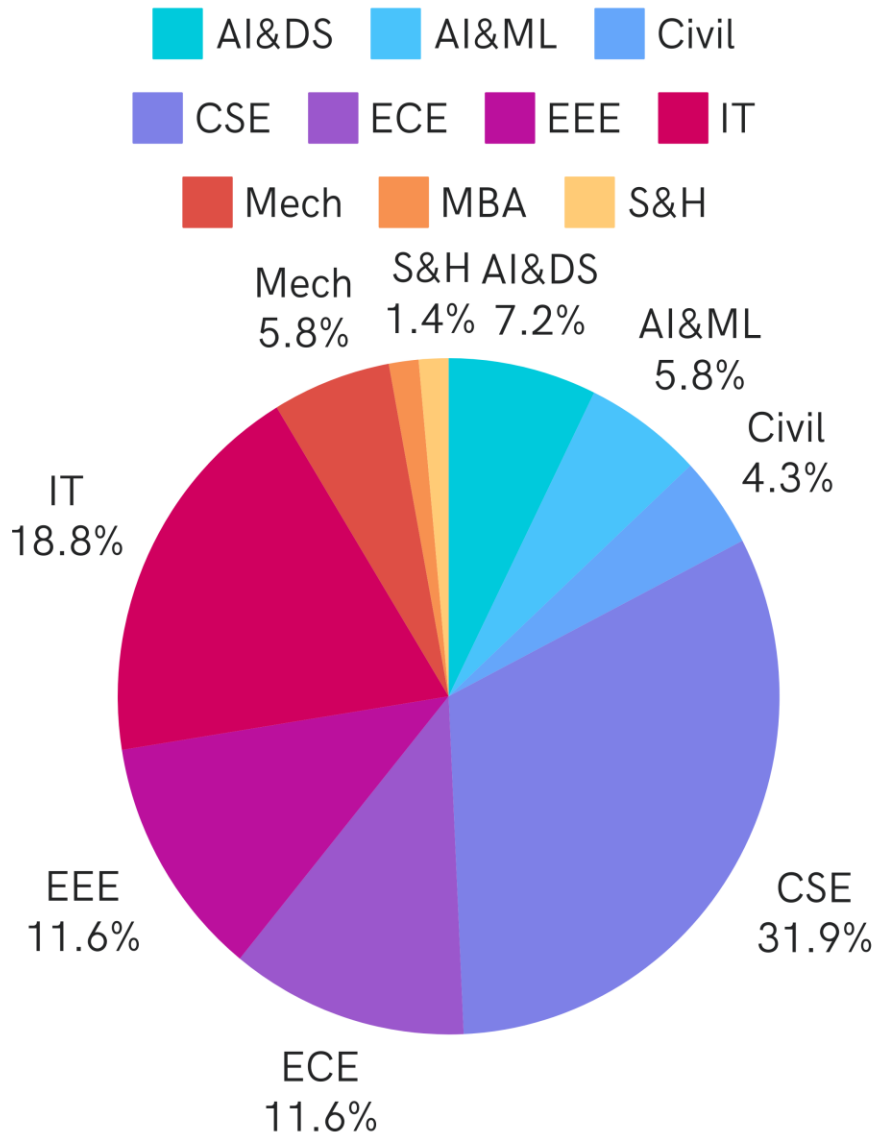
SCIENCE AND HUMANITIES

AAA Audit

Dr A Hepzibah Christinal, Professor, Department of Mathematics, Karunya University, Coimbatore, as a part of the Academic Administrative Audit visited * Department of Science & Humanities and evaluated the department academic progress by auditing the files.



CONTENT CONTRIBUTIONS BY THE DEPARTMENTS



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Principal

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Assistant Professor
Mechanical Engineering

Ms B Pavithra
Assistant Professor
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- Ms S Jaya Preethi, AP/MBA
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Mr R Yashwanthraja
III B.E. Mechanical Engineering

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Mr Mathan Raj S
I B.E. CSE (CYS)

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