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SKCT | JUNE 2024
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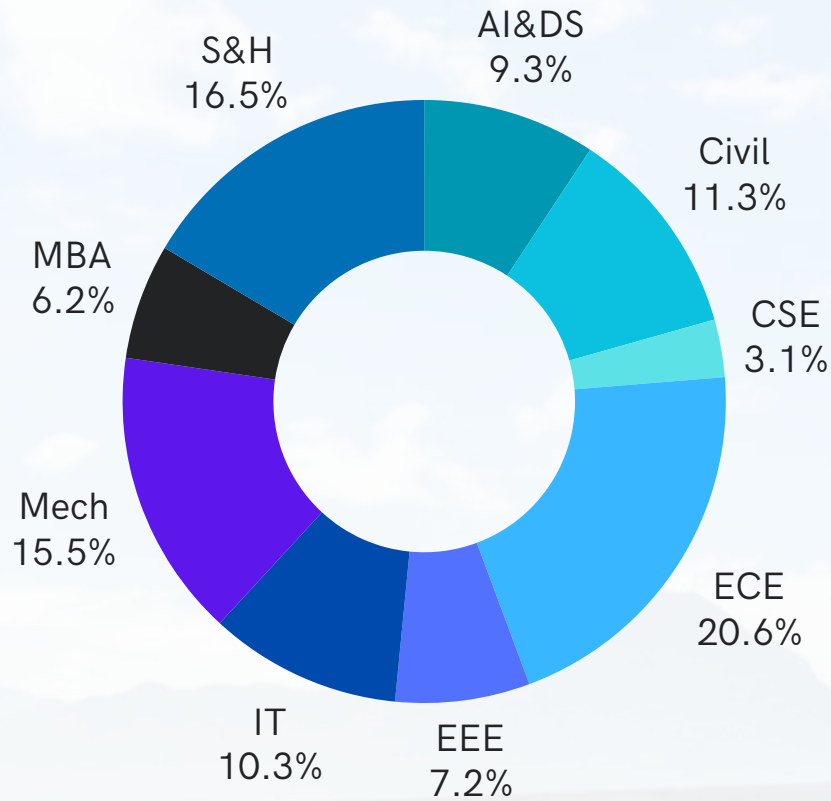skct.edu.in   **Contact Us**

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📍 Kovaipudur, Coimbatore – 641 042.

Contents

S&H
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9.3%

Civil
11.3%

CSE
3.1%

MBA
6.2%

ECE
20.6%

Mech
15.5%

IT
10.3%

EEE
7.2%

Departments	Number of Contents
Artificial Intelligence & Data Science - AI&DS	9
Civil Engineering - Civil	11
Computer Science Engineering - CSE	3
Electronics and Communication Engineering - ECE	20
Electrical and Electronics Engineering - EEE	7
Information Technology - IT	10
Mechanical Engineering - Mech	15
School of Management - MBA	6
Science and Humanities - S&H	16

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

FACULTY PARTICIPATION

Wipro | Reporting Updates

Dear Vinod,

Greetings from Wipro!

Congratulations on the selection for Project Internship with Wipro!

We invite you to join the onboarding formalities remotely on 17th Jun 2024 in the below link at 11.00 AM

Link : Join the meeting now

Mr. Vinod Hariharan R., Student of Second Year IoT, has been offered Project Internship for one month at **WIPRO Ltd.,** Bangalore.

ACHIEVEMENT

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

STUDENT ACHEIVEMENT

Sri Krishna College of Technology

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KOVAIPUDUR CAMPUS, COIMBATORE – 641 042.

Department of Artificial Intelligence and Data Science

Congratulates

MONISHA K
727821TUAD032

CGPA 8.84

HARISMITA R
727821TUAD022

CGPA 8.73

DINESH R
727821TUAD015

CGPA 8.61

for being
ACADEMIC TOPPER OF THE BATCH 2021-25
(till Sixth Semester)

ACHIEVEMENT

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

FACULTY PARTICIPATION

Dr. Maheswaran C. P., Professor and HoD, Department of AI&DS p completed the 5-day Online FDP on **"Inculcating Universal Human Values in Technical Education"** organized by All India Council for Technical Education (AICTE) during 13-17th May 2024.

ACHIEVEMENT

FACULTY PARTICIPATION

Dr. Maheswaran C. P., Professor and HoD, Department of AI&DS participated in one-week online FDP on **"Emerging Trends in secure Internet of Things with Machine Learning and Artificial Intelligence for Futuristic Applications"** organized by by Coimbatore Institute of Technology, Coimbatore during 22-27 May 2024.

ACHIEVEMENT

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

FACULTY PARTICIPATION

Dr. Praveen Kumar E., Assistant Professor/Cyber Security completed Cyber Security certification course on **"Introduction to Critical Infrastructure Protection"** offered by OPSWAT academy.

ACHIEVEMENT

FACULTY PARTICIPATION

Dr. Suma Sira Jacob, HoD/AIML, **Ms. Soundarya S.,** AP/AIML, **Ms. Sugitha A**, AP/CYS completed the 5-day Online FDP on **"Inculcating Universal Human Values in Technical Education"** organized by All India Council for Technical Education (AICTE) during 13-17 May 2024.

ACHIEVEMENT

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

FACULTY PARTICIPATION

Ms. Soundarya S., AP/AIML and **Ms. Sugitha A.**, AP/CYS completed 21-day "**Masterclass on Data Science**" at Pantech e Learning Pvt. Ltd., Chennai.

ACHIEVEMENT

STUDENT PARTICIPATION

Mr. Krithik Kumar K., Mr. Logit Prasath and Mr. Sarnesh K., Students of Second year Cybersecurity have been recognized as "**Oracle Cloud Infrastructure 2024 Generative AI Certified Professionals.**"

ACHIEVEMENT

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

FACULTY PARTICIPATION

Ms. Soundarya S., AP/AIML, completed 3 courses on '**Introduction to Artificial Intelligence**', '**Introduction to NLP**' and '**Introduction to Data Science**' offered by **Infosys.**

ACHIEVEMENT

CIVIL ENGINEERING

STUDENT ACHIEVEMENT

Mr. Mugesh S., IV Civil (Batch 2021-2025) has been **selected for Summer Internship** at the Ministry of Environment, Forest and Climate Change (MoEF) under the Puducherry Pollution Control Committee (PPCC)„ Puducherry division with a stipend of Rs. 10,000/-

—— SELECTED FOR INTERNSHIP ————————————

STUDENTS ACHIEVEMENT

Name of the event: National Level Technical event on **"EGraphie"**
Venue: Jansons Institute of Technology, Coimbatore in association with Bureau of Indian Standards (BIS)
Prizes won:
• **First prize** in **Quiz** on Quality Standards with a cash of **Rs. 1000INR**
• **Second prize** in **Science** via Standards with a cash **Rs. 800INR**.
Name of the students participated:
1) **Mr Sriram G.** – I Civil
2) **Mr Sanjay Kumar S.**– I Civil
3) **Mr Poovarasan E.** – I Civil

—— CASH PRIZE EGRAPHIE ————————————

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CIVIL ENGINEERING

FACULTY PUBLICATION

Ms. Jothi Lakshmi N. published a paper titled **"Evaluation of ground water quality for irrigation purposes in hard rock terrain of Southern India using water quality indices modelling"** in the Elsevier journal Desalination and Water Treatment.

── SELECTED FOR INTERNSHIP ──

FACULTY PARTICIPATION

The following Members of Faculty participated in an **"INTERNATIONAL YOGA DAY - AWARENESS QUIZ"** organized by the SCHOOL OF COMPUTING SCIENCES, Sri Krishna College of Technology, Kovaipudur on 21 June 2024 .

Name of the faculties:
1) **Dr. V. Sreevidya** – Professor & Head, Civil
2) **Mr. Ramesh R**. – AP/Civil
3) **Dr. P. Subashree** – ASP/Civil
4) **Mr. Jayakumar G.** – AP/Civil
5) **Dr. V. Sathish Kumar** – ASP/Civil
6) **Dr. N. Shanmuganathan** – AP/Civil

── AWARENESS ──

CIVIL ENGINEERING

FACULTY PARTICIPATION

5-day **Online FDP** on "**Inculcating Universal Human Values in Technical Education**" organized by All India Council for Technical Education (AICTE) from 13th May to 17th May 2024.

Name of the participants:
1) **Mr. Manoj K. M.** – AP/Civil
2) **Mr. Ramesh R.** – AP/Civil
3) **Mrs. K. Vedhsakthi** – AP/Civil
4) **Mrs. Jothi Lakshmi N** – AP/Civil

— ONLINE FDP —

FACULTY PARTICIPATION

One-week **FDP** on **"Geospatial Technology – Empowering the Educators to Promote Innovation and Skillset"** organized by Shri Vishnu Engineering College for Women, Bhimavaram from 23.05.2024 to 28.05.2024.

Name of the faculties:
1) **Mr. Manoj K. M.** – AP/Civil
2) **Mr. Ramesh R.** – AP/Civil
3) **Mrs. K. Vedhsakthi** – AP/Civil
4) **Mrs. Jothi Lakshmi N** – AP/Civil
5) **Dr. V. Sathish Kumar** – ASP/Civil

— ONLINE FDP —

CIVIL ENGINEERING

FACULTY PARTICIPATION

ChatGPT for Beginners: Using AI for Market Research

Dr. Shanmuganathan N

Ms. Vedhasakthi K

Project Monitoring and Control & Environmental Hazards and Global Public Health

Mr. Manoj K. M.

AI and Disaster Management

Ms. Vedhasakthi K.

coursera

Prompt Engineering for ChatGPT

Ms. Vedhasakthi K.

Sustainable Neighborhoods

Mrs. Selina Ruby G.

The Sustainable Development Goals – A global, transdisciplinary vision for the future

Mr. Manoj K. M.

Material Processing

Mrs. Jothi Lakshmi N.

COURSERA CERTIFICATION

CIVIL ENGINEERING

EVENT ORGANIZED

On behalf of World Environment Day, the Department of Civil Engineering, SKCT organized a **Poster Presentation & Slogan Contest** on 05.06.2024.
Theme: **"Land Restoration, Desertification and Drought Resilience"**

— CONTEST —

STUDENT ACHIEVEMENT

Industrial visit to M/s.KPD Construction,Palladam
Date: 22nd June 2024
Faculty Involved: **Dr. V. Sathish Kumar**, ASP/ CIVIL, Mr.R.Ramesh, AP / CIVIL
Outcome: Collaborate for the third party inspection and consultancy work

— INDUSTRIAL VISIT

CIVIL ENGINEERING

STUDENT ACHIEVEMENT

The following students of **IV B.E**. Civil Engineering gained **industry internship at M/s.Legno Interiors** in Coimbatore with a monthly stipend of Rs. 10,000/-.

Upon successful completion of the internship, they will be offered full-time employment with a starting salary of Rs. 3 LPA/-

1. **Mohan Raj K.**
2. **Mathavan P.**
3. **Selvakumar T.**
4. **Shenbagamoorthi A.**
5. **Dhanush V. G.**

COURSERA CERTIFICATION

FACULTY PARTICIPATION

-

Industry Visit to M/S Legno Interiors, Coimbatore
Faculty Invloved: **Dr. V. Sathish Kumar,** ASP/Civil
Outcome: Internship and job opportunities for students with
Er. S. Gopalakrishnan, Head-Operations, Leno Interiors and Er.Arun, Manager (Civil Works), Broadway Megaplex Pvt. Ltd.

INDUSTRY VISIT

COMPUTER SCIENCE AND ENGINEERING

Ms. G. Sandhya, Assistant Professor, completed the course on **"Internet of Things 101"** offered by Infosys Springboard.

ACHIEVEMENT

FACULTY ONLINE CERTIFICATION

Dr. R. Gnanakumari, Assistant Professor, completed the course on **"Object Oriented Design"** offered by Coursera.

ACHIEVEMENT

COMPUTER SCIENCE AND ENGINEERING

STUDENT PLACEMENT

The following students received offered letter from various company through placement drive:

Mr Mohan Giresh, IV B.E. CSE, received an offer letter from **Superops.**

Mr Srimithun B, IV B.E. CSE, received an offer letter from **Esko**.

Mr Rahul M, IV B.E. CSE, received an offer letter from **Responsive.io**.

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

STUDENT PARTICIPATION

Mr. Srinithin S and Mr. Sai Ashyanth, IV B.E. ECE, participated in the Startup Bootcamp on "Vinnai Thodu" organized at CSI College of Engineering, Kerri, Ooty in association with Startup TN during 08-09June 2024.

ACHIEVEMENT

EVENTS ORGANIZED
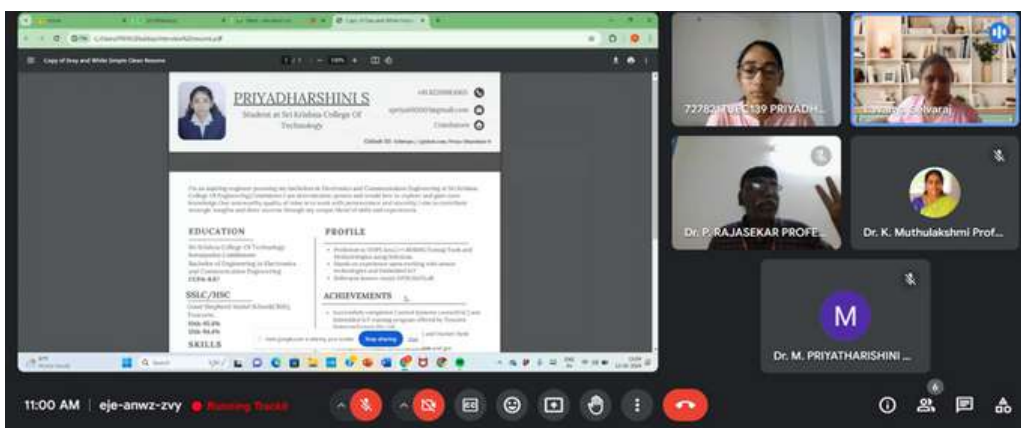
The Department of Electronics and Communication Engineering (ECE) in association with the Placement Training Cell, Sri Krishna College of Technology, Coimbatore, organized an Online Mock Placement Interview session by Ms. Lavanya Selvaraj, Technical Test Lead, Infosys, Chennai on 12 June 2024.

EVENT

ELECTRONICS AND COMMUNICATION ENGINEERING
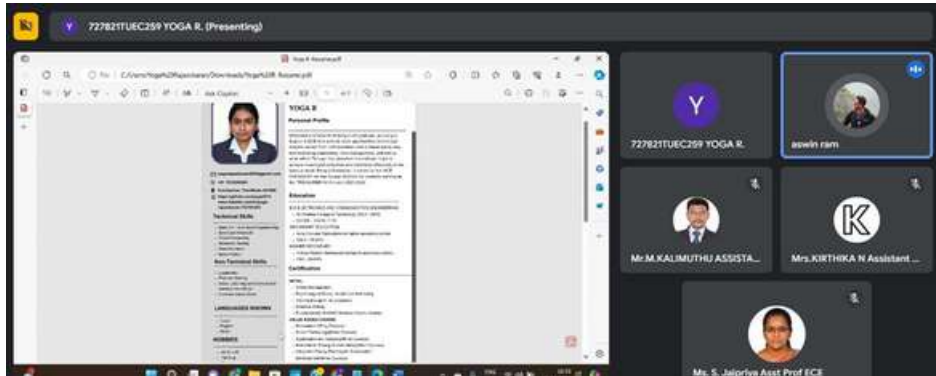
STUDENT PARTICIPATION

The Department of Electronics and Communication Engineering (ECE) in association with the Placement Training Cell, Sri Krishna College of Technology, Coimbatore, organized an Online Mock Placement Interview session by **Mr. Aswin Ram**, Senior Engineer, Bosch Global Software Technologies, Coimbatore on 12 June 2024.

— EVENT —

EVENTS ORGANIZED

The Department of Electronics and Communication Engineering in association with Entrepreneurship Development cell & Alumni cell organized an Alumni lecture series on **"Entrepreneurship in 21st century"** on 30 May 2024 through online mode facilitated by **Mr. Joyel Paul Thomas S**, Founder & CEO, HashtagG Kalvi LLP, Chennai.

— EVENT —

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PUBLICATION

Dr. P. Rajasekar, Professor, Department of ECE presented Paper on **"Exploring the Intersection of Art and Technology with Neural Style Transfer using Advanced Convolutional Neural Networks for Creative Image Transformations"** in the 10th International Conference on Communication and Signal Processing (ICCSP) at AEC, Melmaruvaththur indexed in IEEExplore on 07 June 2024.
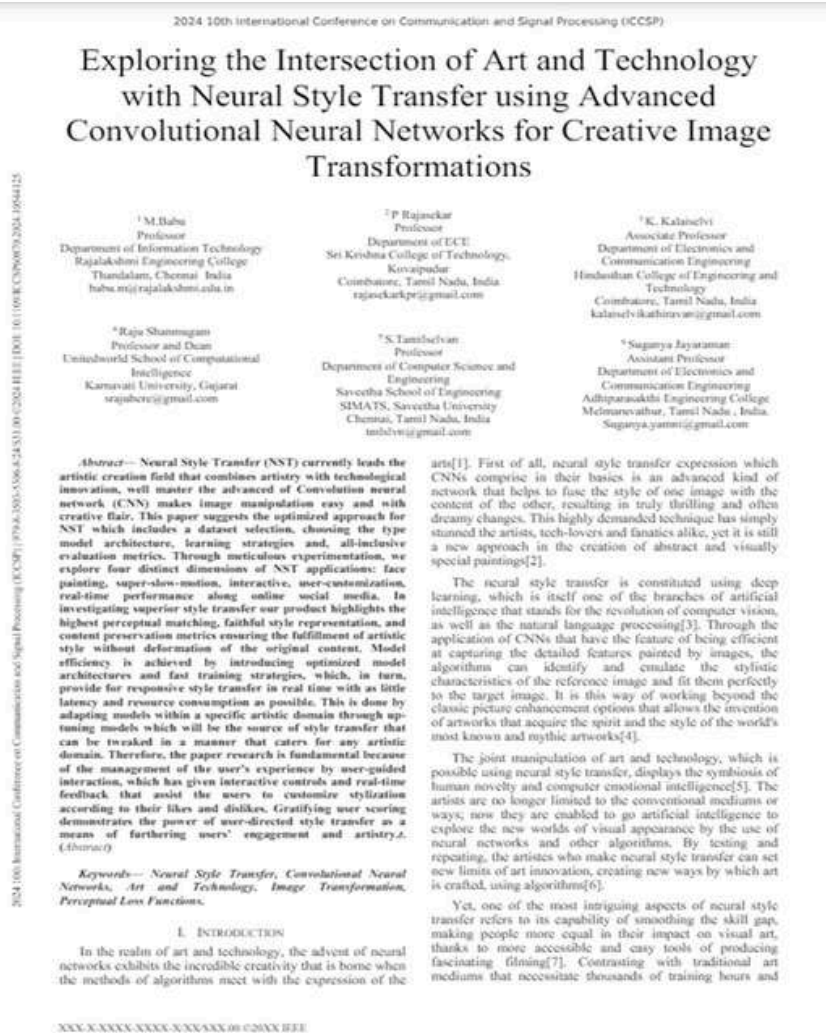
ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

Dr. S. Prema, Assistant Professor, Department of ECE published an article on **"An Innovative Method for Gas Leakage Detection Device Based on XGBoost-A-BiGRU Based Approach"** in IEEE Xplore with DOI:10.1109/IDCIoT59759.2024.10467253 Electronic ISBN: 979-8-3503-2753-3(Scopus Indexed).

Conferences > 2024 2nd International Confer...

An Innovative Method for Gas Leakage Detection Device Based on XGBoost-A-BiGRU Based Approach

Publisher: IEEE | Cite This | PDF

Sachin T. Bahade ; Mohini Mohan Sawarkar ; S. Prema ; P. Anispremkoilraj ; Ajay. S Bhongade ; Harsha... **All Authors**

8 Full Text Views

Abstract

Document Sections

I. Introduction

II. Literature Survey

III. Proposed System

IV. Result and

Abstract:

Recently, there has been an uptick in both the incidence of house fires and the danger the system pose to people's lives and possessions. Even if a safe distance away from the leak, liquid petroleum gas (LPG) can still ignite. The regulator being left on or a defective rubber hose are the two most common causes of fires. Making a system to alert people of gas leaks is, thus, extremely important. To that end, this research presents a gas leakage alarm system to keep an eye out for emergencies like these. The proposed procedure begins with three stages: data preprocessing, feature selection, and model training. The wavelet de-noising technique is used in preprocessing data. Time domain features are utilized during the feature

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PUBLICATION

Dr. S. Nithyadevi, Assistant Professor, Department of ECE published an article on **"Deep learning and machine learning classification technique for integrated forecasting"** in IAES International Journal of Artificial Intelligence (IJ-AI) in June 2024. DOI: 10.11591/ijai.v13.i2.pp1519-1525.

Deep learning and machine learning classification technique for integrated forecasting

Vigilson Prem Monickaraj¹, Sterlin Rani Devakadacham², Nithyadevi Shanmugam³,
Nithya Nandhakumar⁴, Manjunathan Alagarsamy⁵, Kannadhasan Suriyan⁶

¹Department of Computer Science and Engineering, R.M.K. College of Engineering and Technology, Tamil Nadu, India
²Department of Computer Science and Engineering, R.M.D. Engineering College, Tamil Nadu, India
³Department of Electronics and Communication Engineering, Sri Krishna College of Technology, Tamil Nadu, India
⁴Department of Computer Science and Engineering, K. Ramakrishnan College of Engineering, Tamil Nadu, India
⁵Department of Electronics and Communication Engineering, K. Ramakrishnan College of Technology, Tamil Nadu, India
⁶Department of Electronics and Communication Engineering, Study World College of Engineering, Tamil Nadu, India

Article Info

ABSTRACT

Smart fisheries are increasingly using artificial intelligence (AI) technologies to increase their sustainability. The potential fishing zone (PFZ) forecasts several fish aggregation zones throughout the duration of the prediction in any sea. The autoregressive integrated moving average (ARIMA) and random forest model are used in the current study to provide a technique for locating viable fishing zones in deep marine seas. A significant amount of data was gathered for the database's creation, including monitoring information for Indian fishing fleets from 2017 to 2019. Using expert label datasets for validation, it was discovered that the model's detection accuracy was 98%. Our method uses salinity and dissolved oxygen, two crucial markers of water quality, to identify suitable fishing zones for the first time. In the current research, a system was created to identify and map the quantity of fishing activity. The tests use a number of parameter measurements to evaluate the contrast-enhanced computed tomography (CECT) approach to machine learning (ML) and deep learning (DL) methodologies. The findings showed that the CECT had a 94% accuracy rate compared to a convolutional neural network's 92% accuracy rate for the 80% training data and 20% testing data.

Corresponding Author:

Vigilson Prem Monickaraj
R.M.K. College of Engineering and Technology
Chennai, Tamil Nadu, India
Email: vigiprem@gmail.com

1. INTRODUCTION

Many parties with interest in the issue are turning to artificial intelligence-based smart fisheries to help alleviate the issue of declining fish populations [1]. Since 2018, the United Nations (UN), the European Unions (EU), and several state governments have proclaimed a purportedly new "AI era" [2]. Since 2017, the UN has had an artificial intelligence programme for global governance. In order to make sure that the Sustainable Development Goals (SDGs) benefit everyone and promote the SDGs, AI was utilised to evaluate the SDGs. Because of its superior resources, practical living places, and rich biodiversity, the coastal marine environment is essential to India's economy. India's exclusive economic zone (EEZ), which includes islands and extends 7517 km of coastline, is a key area for research and the utilisation of shared resources. Its total area is 2.5 million km². The marine fishing sector employs about 14 million people and generates revenue by exporting to untapped markets. Despite having a harvestable potential of 3.93 million tonnes, India produces

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

ONLINE CERTIFICATION

Mr. M. Kalimuthu, Assistant Professor, Department of ECE completed an online certification courses on **"Foundations of Cybersecurity", "Interfacing with the Arduino"** and **"Introduction to the Internet of Things and Embedded Systems"** through Coursera.

ACHIEVEMENT

ONLINE CERTIFICATION

Dr. M. Priyatharishini, Assistant Professor, Department of ECE completed an online certification courses on **"Foundations of Cybersecurity", "Public Health"** and **"AI and Climate Change"** through Coursera during the month of June 2024.

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

Mr. G. Santhakumar, Assistant Professor, Department of ECE completed an online certification course on **"Sensors and Sensor Circuit Design"** through Coursera.

ACHIEVEMENT

ONLINE CERTIFICATION

Mr. G. Santhakumar, Assistant Professor, Department of ECE participated in the **"4th ONE-WEEK WORKSHOP ON RF & MICROWAVE COMPONENTS (ONLINE)"** organized by School of Electronics Engineering (SENSE) and Technically sponsored by MTT-S/APS/EMC-S Joint Chapter Hyderabad Section at VIT-AP University, Amaravati, India during 15-21 May 2024.

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY DEVELOPMENT PROGRAMME ON UNIVERSAL HUMAN VALUES:

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PARTICIPATION
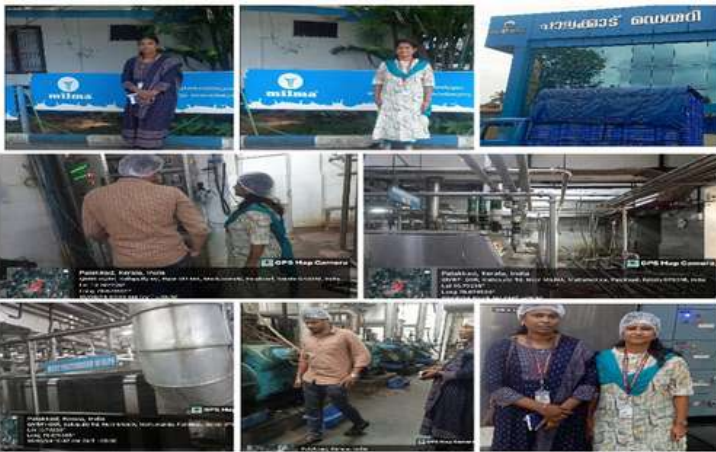
Dr. K. Shanthi, ASP & **Dr. S. Prema,** AP visited 'Milma' Palakkad Diary, Palakkad industry on 19 June 2024 to coordinate Industrial partners for Industry-Academia Connect.

ACHIEVEMENT

FACULTY PARTICIPATION
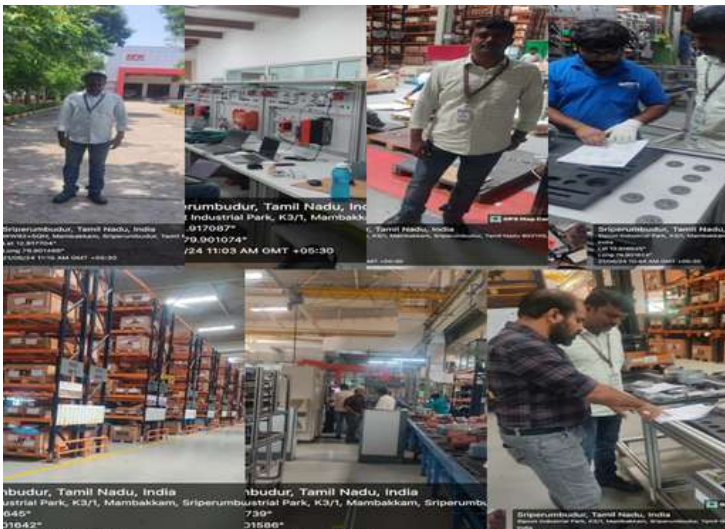
Dr. P. Jayarajan ASP/ECE visited SEW-EURODRIVE INDIA PRIVATE LIMITED, Sriperumbudur, Chennai during 21-22 June 2024.

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PARTICIPATION

Dr. S. Prema, Assistant Professor, Department of ECE participated in a one-week online FDP on **"Empowering Educators: Harnessing Artificial Intelligence, Assistive Technology, IPR and Entrepreneurship"** organized by the Department of Computing (Artificial Intelligence & Machine Learning), Coimbatore Institute of Technology during 13-17 May 2024.

ACHIEVEMENT

FACULTY PARTICIPATION

Mr. G. Santhakumar, AP, Department of ECE, participated in a one-week online Faculty Development Programme on **"NBA & NAAC Strategic Preparation for Enhancing Quality of Education"** conducted by Media Engineering Department during 27-31 May 2024 at NITTTR Chandigarh.

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

ONLINE CERTIFICATION

Mr. M. Arun Kumar, AP, Department of ECE, completed Coursera Certification courses on **"Intellectual Property in the Healthcare Industry, Introduction to the Internet of Things** and **Embedded Systems"**

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PUBLICATION

Dr. P. Jayarajan, Associate Professor, Department of ECE, published a research article on **"ODCHM: Optimal Dynamic Convex Hull Computation Model for Efficient Data Delivery in Uncertain Wireless Sensor Networks"** in the journal of Ad-Hoc and Sensor Wireless Networks indexed in ESCI.

ACHIEVEMENT

FACULTY PUBLICATION

Dr. P. Jayarajan, Associate Professor/ECE published a research article on **"Multi-Objective Spider Monkey Optimization for Energy Efficient Clustering and Routing in Wireless Sensor Networks"** in the journal of Ad-Hoc and Sensor Wireless Networks indexed in ESCI.

ACHIEVEMENT

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ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PUBLICATION

Mr. G. Santhakumar, Assistant Professor published a article on **"Muti-Task crow swarm-intelligent algorithm for enhancing spectrum efficiency and energy conservation in cognitive radio ad-hoc networking"** in the journal on Measurement: Sensors, published by Elsevier (Scopus Indexed).
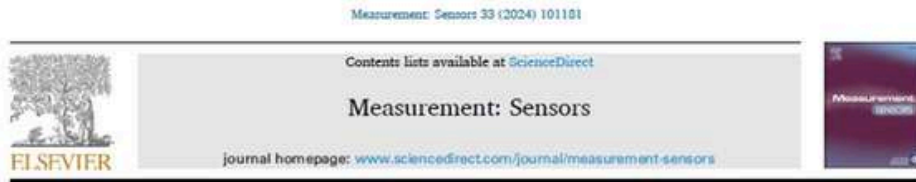
MULTI-TASK crow swarm-intelligent algorithm for enhancing spectrum efficiency and energy conservation in cognitive radio ad-hoc networking

Santhakumar Govindasamy [a,*], Kama Ramudu [b], K. Suriyakrishnaan [c], Swapna Thouti [d], Mohit Tiwari [e], Rama Chaithanya Tanguturi [f], Mangal Singh [g]

[a] Department of Electronics and Communication Engineering, Sri Krishna College of Technology, Coimbatore, Tamil Nadu, India
[b] Department of Electronics and Communication Engineering, Kakatiya Institute of Technology and Science, Warangal, India
[c] Department of Electronics and Communication Engineering, Sona College of Technology, Junction Main Road, Salem, India
[d] Department of Electronics and Communication Engineering, CVR College of Engineering, Hyderabad, India
[e] Department of Computer Science and Engineering, Bharati Vidyapeeth's College of Engineering, Paschim Vihar, Delhi, India
[f] Department of Computer Science and Engineering, Pace Institute of Technology and Sciences, Ongole, Andhra Pradesh, India
[g] Department of Electronics and Telecommunication Engineering, Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, India

ARTICLE INFO

Keywords:
Cognitive radio ad-hoc networking (CRAHNN)
Multi-task crow swarm-intelligent (MCSI)
Spectrum use
Energy-saving
Spectrum availability
Network circumstances

ABSTRACT

Cognitive Radio Ad-hoc Networking (CRAHN) could unlicensed users access neglected spectrum assets. This research offers an innovative Multi-task Crow Swarm-Intelligent (MCSI) methodology for ensuring the effective usage of spectrum and the preservation of energy in CRAHN. The suggested method uses a crow-inspired swarm's collective cognition to maximize the distribution of spectrum assets, adjust to shifting network circumstances, and consume energy as possible. We covered the important factors that influence spectrum effectiveness, like the population of the swarm, the sensor's threshold measurement, and the optimum amount of iterations, underscoring the significance of finding the right mix of these factors. In comparison to previous algorithms, this work gives a thorough evaluation of MCSI using simulated tests, highlighting its outstanding results with regard to spectrum effectiveness and preserving energy. The results suggest that MCSI combines spectrum use and energy savings, making it a promising CRAHN performance technology.

1. Introduction

The need for wireless communication is growing in today's fast-paced, data-driven environment. Traditional wireless networks struggle to keep up with the rising demand for data because they have limited spectrum and make inefficient use of the available frequencies [1]. A potential answer to these problems is the emerging Cognitive Radio (CR) technology. Cognitive radio provides dynamic and intelligent spectrum management in ad hoc networking environments, maximizing the use of radio frequencies and promoting energy conservation [2]. The spectrum, being a limited and valuable asset, serves as the foundation for wireless communication. The conventional method of allocating spectrum resources leads to inefficiencies, as a significant portion of the given spectrum remains underutilized for long durations. Cognitive Radio is a concept that was created to tackle this inefficiency by giving

wireless devices the capability to adjust and take advantage of underutilized frequency bands when the opportunity arises [3].

The dearth of radio spectrum is one of the most urgent problems facing modern wireless communication. The available frequency bands are running out as more and more devices are connected and data-intensive applications become standard [4]. The scarcity of accessible spectrum acts as a constraint that limits the growth and optimization of wireless networks, resulting in interference and subpar efficiency. By enabling devices to access unused frequency bands, Cognitive Radio tackles this problem by easing the burden on the crowded spectrum [5]. Dynamic spectrum access is the foundation of cognitive radio, which allows for the intelligent and adaptive selection of available frequency bands by devices [6]. These gadgets have the ability to sense their radio surroundings, recognize unused or sparsely used channels, and effortlessly move between them. CR technology promises to improve spectral

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

Dr. C. Ramkumar published an article entitled **"Enhancing wireless sensor network connectivity and coverage using Hybrid GWO-HSA algorithm"** in International Journal of Communication Systems, SCI.

RESEARCH ARTICLE

WILEY

Enhancing wireless sensor network connectivity and coverage using Hybrid GWO-HSA algorithm

Karthik Subburathinam[1] | Vijayalakshmi Bakthavatchalam[2] |
Ram Kumar Chenthur Pandian[2] | Kavitha Mettupalayam Subramaniam[1]

[1]Department of Computer Science and Engineering, SNS College of Technology, Coimbatore, India

[2]Department of Electronics and Communication Engineering, Sri Krishna College of Technology, Coimbatore, India

Correspondence
Vijayalakshmi Bakthavatchalam,
Department of Electronics and
Communication Engineering, Sri Krishna
College of Technology, Coimbatore, India
Email: vijayayalakshmi331@gmail.com

Funding information
No funding is involved in this work.

Summary
Wireless sensor networks (WSNs) are essential in environmental monitoring, healthcare, and industrial automation. Persistent connectivity and coverage challenges in WSN stem from intermittent node connectivity due to obstacles, signal interference, node failures, and compromised data reliability. Existing solutions, while useful, exhibit limitations in fully addressing these concerns. To confront these challenges, a proposed system introduces the Hybrid Grey Optimizer–Harmony Search Algorithm (Hybrid GWO-HSA), merging adaptive routing protocols and efficient deployment techniques. The Hybrid GWO-HSA system conducts an initial environmental analysis to pinpoint factors affecting node communication. It strategically deploys additional nodes to bridge coverage gaps, using the Grey Wolf Algorithm's capabilities to optimize node placement. Moreover, it employs the Harmony Search Algorithm to dynamically adjust communication paths based on real-time network conditions, ensuring robust data transmission. The system workflow involves an environmental assessment followed by node deployment guided by the Grey Wolf Algorithm. Subsequently, the Harmony Search adapts communication paths to enhance connectivity. Simulations and practical experiments across diverse environments validate the Hybrid GWO-HSA system's effectiveness. Results showcase substantial improvements: network lifetime of 13,200 s, a network delay of 37 ms, a coverage rate of 0.88, and an energy consumption of 590 J. This Hybrid GWO-HSA-based system establishes a resilient and efficient WSN infrastructure vital for reliable data collection and transmission in challenging settings. The Hybrid GWO-HSA system offers a comprehensive approach to

ACHIEVEMENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY ACHIEVEMENT

Dr. S. Nithyadevi, AP, Department of ECE, received Faculty Domain – Advanced Certificate from NPTEL.

ACHIEVEMENT

EVENTS ORGANIZED

The Department of Electronics and Communication Engineering in collaboration with IETE & Alumni Cell organized an Alumni Lecture Series on **"Navigating CISCO: Your Roadmap to Success"** facilitated by Mr. P. S. Lakshmikant, Network Consulting Engineer, CISCO, Pune. (Batch: 2010 - 2014 ECE) on 19 June 2024.

EVENT

ELECTRONICS AND COMMUNICATION ENGINEERING

FACULTY PARTICIPATION

Dr. Jency Joseph J. and Ms. Priyadharshini J., the Members of Faculty, completed two-day workshop on **"Python Programming with industrial Perspective"** organized by Pencil Bitz during 02-03 June 2024.

ACHIEVEMENT

FACULTY ONLINE CERTIFICATION

Dr. Vishnumurthy K., Asst. Professor, completed **"Innovation Ambassador advanced level training"** on 06 June 2024.

EEE

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PARTICIPATION

Sri Krishna College of Technology
An Autonomous Institution
Affiliated to Anna University and Approved by AICTE
Accredited by NAAC with 'A' Grade
KOVAIPUDUR CAMPUS, COIMBATORE – 641 042.

Department of Electrical and Electronics Engineering
(in association with alumni cell)

ALUMNI EXPERT TALK
on

Artificial Intelligence and Data Science for Electrical Engineers

Resource Person
Revaapriyan C (2014-2018)
Senior Data Scientist
Tiger Analytics
Chennai

13.06.2024 | 07.00 p.m. to 08.00 p.m. | Google Meet

Presided by	Convenor	Coordinators	Visit Our Website skct.edu.in
Dr. Sumithra M G Principle	Dr. Lijo Jacob Varghese	Dr.S.Dilip Kumar Ms.A.Elakya	/SKCTOfficial

The Department of Electrical and Electronics Engineering (EEE) in association with the Alumni Cell, Sri Krishna College of Technology, Coimbatore, organized an Alumni Expert Talk on **"Artificial Intelligence and Data Science for Electrical Engineers"** on 13 June 2024.

ACHIEVEMENT

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PARTICIPATION

Dr. Lijo Jacob Varghese, Professor and Head, published an article in IEEE digital explore on **"Renewable Energy Based EV Charging Station Employed with Machine Learning Approach"** in an International Conference on Electronics, Communication, Computing and Control Technology (ICECCC 2024) during 02-03 May 2024.

ACHIEVEMENT

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PARTICIPATION

Dr. Lijo Jacob Varghese, Professor and Head, completed webinar on **"Digital and AI Tools in Education"** organized by Dynamic Mind Group on 26 May 2024.

ACHIEVEMENT

FACULTY ONLINE CERTIFICATION

Dr. Jency Joseph J., completed a NPTEL course on **"Programming in Java."**

ACHIEVEMENT

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PUBLICATION

Ms. Sanjandevi V. S., published an article in IEEE digital explore on **"Fire Detection and Prediction using Machine Learning for Fireworks industry."**

ACHIEVEMENT

FACULTY PUBLICATION

Mr. Leninpugalhanthi P., published an article in IEEE digital explore on **"Magnetic Levitation based Wireless Power Transfer for Electric Vehicle."**

ACHIEVEMENT

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PUBLICATION

Design and Development of RFID based Unmanned Smart Ration Distribution System

Publisher: IEEE | Cite This | PDF

K. P. Suresh ; R. Dhivyadharshini ; A. B. Keerthi Varshan ; A. Arun ; M. Mohamed Umar Ali   All Authors

Abstract:
The Public Distribution System (PDS) in India is an extensive retail network that works to guarantee food security for the country's population. It is one of the biggest retailing systems in the world, operating on a gigantic scale. The main objective is to give people access to subsidized vital food grains. Under the control of state governments, the system distributes ration cards that allow people to buy goods including rice, wheat, kerosene, sugar, and oil. A suggested remedy in view of the existing circumstances is the "Automated Public Distribution System based on RFID, GSM and Atmega." This technology automates every step of the procedure, including food grain delivery and billing. Reducing corruption and illicit activity, such goods smuggling etc. Improved validation, adaptability, and transparency inside the PDS are all promised by the suggested solution.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024   DOI: 10.1109/ICICT60155.2024.10544899
Date Added to IEEE Xplore: 07 June 2024   Publisher: IEEE
ISBN Information: Conference Location: Lalitpur, Nepal
ISSN Information:

Dr. Suresh K. P., published an article in IEEE digital explore on **"Design and Development of RFID based unmanned Smart Ration Distributed System."**

ACHIEVEMENT

FACULTY PUBLICATION

Revolutionizing EV Charging: Mobile Power Solutions with SOFC Technology

Publisher: IEEE | Cite This | PDF

A. Elakya ; J. Suba Geetha ; M. Sundara Moorthy ; S. Surya   All Authors

Abstract:
This research study presents a novel solution to address the charging needs of electric vehicle (EV) charging: a transportable Solid Oxide Fuel Cell (SOFC) battery system contained within a truck. The portable device uses SOFC technology, which has minimal emissions and great energy efficiency, to operate as a dynamic EV charging station. Because of its built-in mobility, the container helps relieve range anxiety by providing stranded vehicles with quick and flexible charging. This initiative demonstrates a dedication to environmental sustainability, even beyond its direct impact on charging accessibility. Apart from offering rapid and environmentally sustainable charging options, the concept promotes economic feasibility by presenting an adaptable and economical infrastructure suitable for extensive implementation. Additionally, scalability is made possible by the modular architecture of the transportable SOFC battery system, opening up customized applications in a variety of urban and rural environments. This flexibility guarantees that a wide range of customers may benefit from clean EV charging, irrespective of their location or the limits of the infrastructure. Through the consideration of economic and scalability factors, the project expands its potential effect and moves the needle towards a future where sustainable electric mobility is more widely available and inclusive.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024   DOI: 10.1109/ICICT60155.2024.10544751
Date Added to IEEE Xplore: 07 June 2024   Publisher: IEEE

Ms. Elakya A., published an article in IEEE digital explore on **"Revolutionizing EV Charging: Mobile Power Solutions with SOFC Technology."**

ACHIEVEMENT

ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY PUBLICATION

Traffic Speed Limit Sign Recognition using Deep Learning

Publisher: IEEE

Kamali B ; Kishore A ; Rajkumar S ; Saravanakumar K ; Dhanaselvam J ; Rajesh R All Authors

Abstract:

Automated interpretation of data from roadside traffic signs is extremely helpful for road surveying, autonomous vehicle applications, and enhancing road infrastructure and safety. However due to the high degree of sign similarity, low visibility, and unfavorable nature condition of the road environment, this is a very difficult challenge. In the present research, an approach for automatic detection and recognition of speed limit based on an improved version of YOLOv5n was developed to address the issues in the traffic speed limit sign recognition system, the typical target detection algorithm has low recognition accuracy, sluggish rate, disregarded detection, and inaccurate detection. Deep learning algorithms can extract speed limit data from Roadside automatically. There are two approaches to introduce this method. First of all, it is suggested to partition speed limit signs into one class based on their pixels rather than grouping each sign into a different class. A second proposal is a classifier that can differentiate between speed signs and non-speed signs by evolving its weights, utilizing a false alert class. Images of all of India's state highways were used for developing the data set. The suggested method is very accurate in identifying and detecting speed limit signs, according to the comparative study of the data. The suggested method, with a processing time of 0.040 seconds per frame, produced an average recognition accuracy of 90% using YOLOv5n. This quick calculation time improves system reliability and stability in real-time applications.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024   DOI: 10.1109/ICICT60155.2024.10544700

Date Added to IEEE Xplore: 07 June 2024   Publisher: IEEE

Dr. Dhanaselvam J. published an article in IEEE digital explore on "**Traffic Speed Limit Sign Recognition using Deep Learning.**"

─── ACHIEVEMENT ───

FACULTY PUBLICATION

Graph Neural Networks for Hyper-Accurate Solar Power Forecasting

Publisher: IEEE

V. Manimegalai ; V. Deekshitha ; T. Dhivya Shri ; D. Hanni ; V. Mohanapriya ; A. Elakya All Authors

Abstract:

Solar power's unpredictable swings pose a big challenge for the grid. Predicting its output precisely is key to keeping the lights on and maximizing its clean energy potential. This work proposes a revolutionary approach, diving deeper than ever before. Instead of relying solely on basic weather data, this research work creates a comprehensive "data web". Satellite images offer a clear view of cloud cover, while ground sensors capture subtle environmental details. Real-time cloud tracking adds another layer of understanding. This diverse data unfolds the story of ever-changing atmosphere impacts solar energy generation. But data alone isn't enough to see the full picture. Here's where Graph Neural Networks (GNN) come in, these AI experts are masters at analysing complex connections within data. They uncover hidden patterns and relationships that traditional methods miss, revealing how subtle factors influence solar power. By combining the depth of our advanced data with the power of GNN aim to achieve super-accurate predictions, leaving older methods behind. The benefits are multi-layered. Better forecasts enable a smoother integration of solar power into the grid, reducing our dependence on fossil fuels and making the system more stable. Precise predictions also empower both energy providers and consumers to optimize usage and distribution, leading to cost savings and improved efficiency and improved accuracy. Ultimately, this data-driven and AI-powered approach maximizes solar power's potential, enabling a cleaner and more sustainable energy future through precise solar power prediction.

Published in: 2024 International Conference on Inventive Computation Technologies (ICICT)

Date of Conference: 24-26 April 2024   DOI: 10.1109/ICICT60155.2024.10544904

Date Added to IEEE Xplore: 07 June 2024   Publisher: IEEE

Ms. Manimegalai V. and **Ms. Elakya A.,** published an article in IEEE digital explore on "**Graph Neural Networks for Hyper-Accurate Solar Power Forecasting.**"

─── ACHIEVEMENT ───

INFORMATION TECHNOLOGY

FACULTY PARTICIPATION

Ms. P. Alaguvathana, Ms. P. Dhivya, Mr. C. Rajesh Kumar, Assistant Professors, completed an FDP on **"Recent Trends in Artificial Intelligence"** organized by PSN College of Engineering and Technology during 20-24 May 2024.

── ACHIEVEMENT ──

FACULTY PARTICIPATION

Dr. A. Christy Jeba Malar, Associate Professor, **Ms. K. Mythili**, Assistant Professor, attended the Five-day Short Term Training Program on **"Advanced Approaches and Insights on Signal Processing in Health care"** organised by the Department of Electronics and Communication Engineering, Sri Venkateswara College of Engineering during 27-31 May 2024.

── ACHIEVEMENT ──

INFORMATION TECHNOLOGY

FACULTY PUBLICATION

Mr. C. Rajesh Kumar, Assistant Professor, published a paper on **"Securing Smart Networks and Privacy Intrusion Detection System Utilizing Blockchain and Machine Learning"** in IEEE Xplore.

ACHIEVEMENT

FACULTY PUBLICATION

Mr. C. Rajesh Kumar, Assistant Professor, published a paper on **"Multimedia Wireless Sensor Network Platform Data Encryption Algorithm based on Blockchain Technology"** in IEEE Xplore.

ACHIEVEMENT

INFORMATION TECHNOLOGY

STUDENT PLACEMENT

Mr. Guruprasath S., IV B.Tech. IT A, placed in Superops with a package of 6LPA.

Mr. Mahith Dharshan S (Batch 2024) placed in EYGDS, Chennai with a package of 4LPA.

Ms. Poorna Deepa R (Batch 2024) placed in EYGDS, Chennai with a package of 4LPA.

Mr. S. Kamalesh (Batch 2024) placed in Cognizant, Chennai with a package of 4LPA.

ACHIEVEMENT

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skct.edu.in
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INFORMATION TECHNOLOGY

STUDENT ACHIEVEMENT

Ms. Dhrisha Krishna R., IV B.Tech. IT A has been shorlisted as the **Topper** of Informatica –PAN India Coding Contest ,Infathon 2024.

ACHIEVEMENT

FACULTY PARTICIPATION

Ms. P. Alaguvathana, Assistant Professor completed an FDP on **"OBE and NEP 2020"** during 10-14 June 2024 organized by PBR VISVODAYA Institute of Technology and Science.

ACHIEVEMENT

INFORMATION TECHNOLOGY

FACULTY PARTICIPATION

Ms. K. Mythili, Assistant Professor participated in an International Yoga Day-Awareness Quiz organized by the School of Computing Sciences on 21 June 2024.

ACHIEVEMENT

FACULTY AWARDS

Dr. K. Suresh Kumar defended his Ph.D. Viva Voce Examination on 18 June 2024.

ACHIEVEMENT

INFORMATION TECHNOLOGY

EVENT ORGANIZED

The department of Information Technology organized an IIC Calendar Activity on **"Lean Startup and Minimum Viable Product"** on 24 June 2024 through virtual mode. The event highlighted various aspects of startup, iterative development, validated learning, and customer feedback and uncertainties of innovation more effectively.
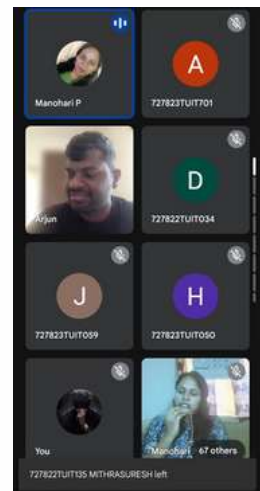
Chief Guest:
Mr. Arun Vijay,
Chief Operating Officer & Founder,
Giottus Technologies Pvt Ltd,
Chennai.

Event Coordinator :
Ms. P. Manohari,
AP/IT

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ENTREPRENUERSHIP DEVELOPEMENT CELL

Department of Information Technology in association with Institution's Innovation Council and Entrepreneurship Cell Organises

A SEMINAR
on

LEAN START-UP & MINIMUM VIABLE PRODUCT- MENTORING SESSION

Resource Person
Mr Arun Vijay
Chief Operating Officer and Founder
Giottus Technologies Pvt. Ltd.,
Chennai, Tamilnadu

ACHIEVEMENT

FACULTY ACHIEVEMENT

Dr. P. Prathap, Professor & **Mr. M. Rajeswaran,** Assistant Professor, published an article in the journal of **"Materials and Technology"** with an Impact Factor **0.638**; SCIE/WoS Indexed (Q1).

DRY SLIDING WEAR BEHAVIOUR OF CARBON NANOTUBE/ALUMINA/EPOXY HYBRID NANOCOMPOSITES

DRSNA OBRABA HIBRIDNIH NANOKOMPOZITOV, SESTAVLJENIH IZ OGLJIKOVIH NANOCEVK, ALUMINIJEVEGA OKSIDA IN EPOKSIDNE SMOLE

Ramkumar R.[1], Sabarinathan C.[2*], Rajeswaran M.[3], Prathap P.[3], Sankar Ganesh R.[4]

[1]Department of Mechanical Engineering, St Xaviers Polytechnic College, Sivagangai, Tamil Nadu 630302, India
[2]Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Coimbatore, Tamil Nadu 641032, India
[3]Department of Mechanical Engineering, Sri Krishna College of Technology, Coimbatore, Tamil Nadu 641042, India
[4]Department of Automobile Engineering, Hindusthan College of Engineering and Technology, Coimbatore, Tamil Nadu 641032, India

In the field of materials science, polymer composites have been extensively used in various industries such as marine, automotive, aerospace, sports and other industries due to their good dimensional stability and excellent structural properties. In this present research investigation, epoxy served as the polymer material, while multi-walled carbon nanotubes (MWCNTs) and alumina nanofillers were employed for reinforcing the matrix through hybridization. The wear characteristics of the composite material were examined under dry sliding conditions, employing a pin-on-disc machine with a track diameter of 50 mm. The load on the specimen was varied between low (20 N), medium (40 N) and high (60 N), while the weight fraction of the hybrid nanofillers underwent variations in a range of 0.1-0.5 w/% with an increment of 0.1 w/%. The results showed that the reinforcement of hybrid nanofillers significantly reduces the wear phenomena of the composite material. Hybrid nanocomposites with (0.1, 0.2 and 0.3) w/% of MWCNTs-Al₂O₃ exhibit noteworthy advancements in the wear resistance. Particularly the 0.3 w/% MWCNTs-Al₂O₃ hybrid nanocomposite demonstrates exceptional wear resistance compared to pure epoxy. The incorporation of 0.3 w/% of MWCNTs-Al₂O₃ results in a significantly improved wear resistance, with enhancements of (83, 81 and 80) % observed during low (20 N), moderate (40 N) and high (60 N) loading conditions, respectively, compared to pure epoxy. Similarly, deformation, delamination and filler plugging were observed with medium and high load. The surface morphology of the worn specimens was assessed through the application of field emission scanning electron microscopy.

Keywords: wear, epoxy, MWCNTs, alumina, morphology analysis

Nova spoznanja o kompozitnih materialih na osnovi polimerne matrice so prispevala k njihovi intenzivniuporabi na različnih industrijskih področjih kot so ladjedelništvo, proizvodnja avtomobilov, letalska industrija, industrija izdelave športne opreme in le na mnogo drugih.Te vrste kompozitov imajo dobro dimenzionalno stabilnost in odlične strukturne lastnosti. V tem članku avtorji opisujejo raziskavo obrabe hibridnega kompozita s polimerno matrico in ojačitveno fazo iz večstenskih ogljikovih nanocevk in delcev aluminijevega oksida. Drsno obrabo kompozitnega materiala so določili z napravo, ki ima vrtljivi disk in tre, ki pod izbranim tlakom drvi po preizkušancu (angl.: pin-on-disc machine)s premerom sledi 50 mm. Izbrali so naslednje obremenitve na tru: nizko (20 N), srednjo (40 N) in visoko (60 N), medtem ko se je delež hibridnega polnila v kompozitu gibal med med 0,1 w/% in 0,5 w/% v korakih po 0,1 w/%. Rezultati preizkusov so pokazali, da dodatek polnila ostromu ojačitvenih faz znatno zmanjša drsno obrabo hibridnega kompozita. Hibridni nanokompoziti 0,1 w/%, 0,2 w/% in 0,3 w/% polnila so imeli občutno boljšo odpornost proti drsni obrabi.Hibridni kompozit z 0,3 w/% polnila pa je imel še posebej dobro odpornost proti obrabi in sicer: kompozit z 0,3 w/% polnila je imel za 83 % manjšo obrabo pri obremenitvi 20 N, za 81 % manjšo obrabo pri obremenitvi 40 N in za 80 % manjšo obrabo pri obremenitvi 60 N v primerjavi s čistim epoksijem. Opazovali so tudi deformacijo, cepljenje (delaminacijo) in utrditev nanodelcev v hibridnih kompozitih v odvisnosti od manse vsebnosti polnila. Površinsko morfologijo obrabljenih preizkušancev so opazovali s pomočjo vrstičnega elektronskega mikroskopa na emisijo polja elektronov.

Ključne besede: obraba, epoksi, večstenske ogljikove nanocevke, aluminijev oksid, morfološka analiza

1 INTRODUCTION

Epoxy resins are extensively utilized in scientific and technological applications, covering the marine, automotive, aerospace and sports industries, due to their remarkable mechanical properties.[1,2] However, the wear phenomena and coefficient of friction exhibited by pure epoxy are substantial.[3] Thus, hybrid nanocomposites have emerged as a novel category of materials, augmenting the performance of composite materials by unlocking novel characteristics and facilitating distinctive interactions among materials. Numerous studies indicate that hybrid nanocomposites exhibit elevated mechanical and thermal properties in comparison to traditional composites.[4-7] Due to their increased aspect ratio and noteworthy mechanical characteristics, fitting physical, thermal and electrical properties, carbon nanotubes (CNTs) are presently acknowledged as a pivotal category of nanomaterial for the synthesis of polymer-infused nanocomposites. Carbon nanotubes (CNTs) have the capability to
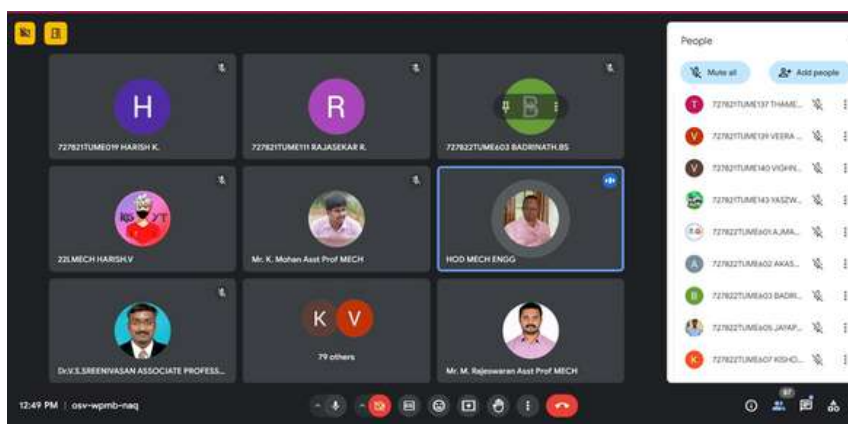
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MECHANICAL ENGINEERING

FACULTY ACHEIVEMENT

The **Synopsis approval Doctoral Committee Meeting** was conducted in Metrology Lab for the Research scholar Mr. A. Arun Thangadurai, who is pursuing Ph.D. under the supervision of Dr. V. S. Sreenivasan.

ACHIEVEMENT

EVENTS ORGANIZED

The Department of Mechanical Engineering conducted an online meeting on 13 June 2024 for the Students of IV B.E. regarding placement activities and college reopening.

EVENTS

MECHANICAL ENGINEERING

Dr. T. Nithyanandhan and **Mr. M. K.Prabhu,** Assistant Professors, completed an one-week online FDP on **"OBE & NEP 2020"** organised by NIT - AP University.

ACHIEVEMENT

Dr. V. S. Sreenivasan, Professor attended a six-day online FDP on **"Robotics Process Automation"** organised by Sri Sairam Engineering college, Chennai.

ACHIEVEMENT

FACULTY PUBLICATION

Dr. S. Sundararaj, Prof/Mech published a paper on **"Nanofluids in Nanoworld Journal (Q4)."**

Enhancing Tribological Performance with Aluminum Oxide Nanofluids: Experimental Investigation and Surfactant Stabilization

Jagadeesha Seethappa[1], Sundararaj Subramanian[2*], Govindan Pattusamy[3], Sujatha Pitchaimuthu[4], Vanaja Shanmugam[5] and Vasanthi Ponnuswamy[6]

[1]Department of Mathematics, Nitte Meenakshi Institute of Technology, Bengaluru, Karnataka, India
[2]Department of Mechanical Engineering, Sri Krishna College of Technology, Coimbatore, Tamil Nadu, India
[3]Department of Mechanical Engineering, Mailam Engineering College, Tindivanam, Tamil Nadu, India
[4]Department of Information Technology, Veli Institute of Science Technology and Advanced Studies, Chennai, Tamil Nadu, India
[5]Department of Computer Science, Queen Mary's College, Chennai, Tamil Nadu, India
[6]Department of Mathematics, Sri Ramakrishna Engineering College, Coimbatore, Tamil Nadu, India

Abstract

Researchers have been studying the superior heat conductivity of nanofluids compared to base fluids for over two decades, but the difficulties of dispersion and stabilizing nanoparticles in lubricants have hampered their use in tribology. To investigate the tribological characteristics of nanofluids, aluminum oxide (Al_2O_3) nanoparticles were dispersed in paraffinic mineral oil. Nanoparticles were dispersed evenly, due to the use of an ultrasonic homogenizer. Oil of olive improved the nanofluids' dispersibility and stability because it acted as a surfactant. A universal micro-tribometer set up with a ball-on-disk setup was used to assess the frictional forces exerted by the nanofluids on the mechanical parts as they moved. A surface profiler was employed to analyze the wear track, and X-ray photoelectron spectroscopy (XPS) was utilized to investigate the substance formed on the sliding contact. The effects of surfactant type, surface roughness, sliding velocity, concentration of particle, applying load, and ultrasonication period on the frictional and wear performance of nanofluids were studied. It has been demonstrated that oil-based nanofluids containing Al_2O_3 nanoparticles can reduce friction and wear under certain conditions. The nanofluids' dispersibility, stability, and friction were all improved by the addition of oleic acid (OA) as a dispersant.

Keywords

Velocity, Ultrasonication, Surface roughness, Surfactant, Nanofluid

Introduction

The increased thermal conductivity of nanofluids over conventional fluids has made them a hot topic of study. Recently, scientists have also studied the tribological characteristics of nanofluids. In addition, authors [1] reported that nanoparticles added to lubricants were successful in lowering wear and friction. The friction-reducing and anti-wear capabilities of the nanoparticles varied with their size, shape, and concentration. The slow progress of nanoparticle lubricants can be attributed to the challenges of stabilizing nanoparticles. Suspensions of CuO, Al_2O_3, and ZrO_2 nanoparticles in polyalphaolefin were demonstrated to exhibit anti-wear and extreme-pressure behavior [2]. When CuO nanoparticles were added to API-SF engine oil and base oil, friction was reduced by 18.4% and wear scar depth was reduced by 16.7%, as measured by the authors' studies [3]. TiO_2 nanofluids had a lower friction coefficient than base oil in a countering sliding testing test [4].
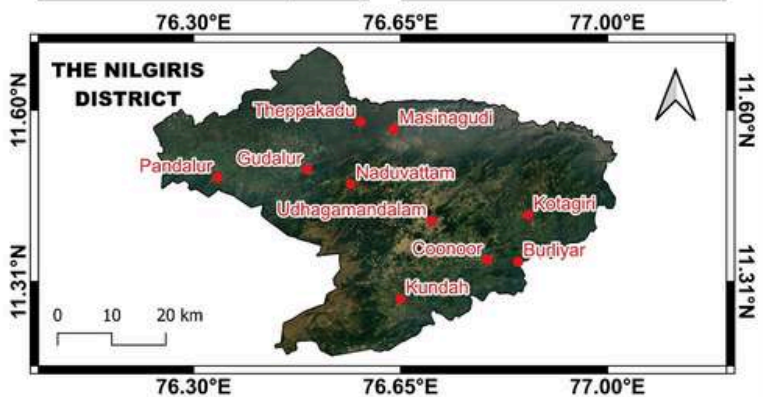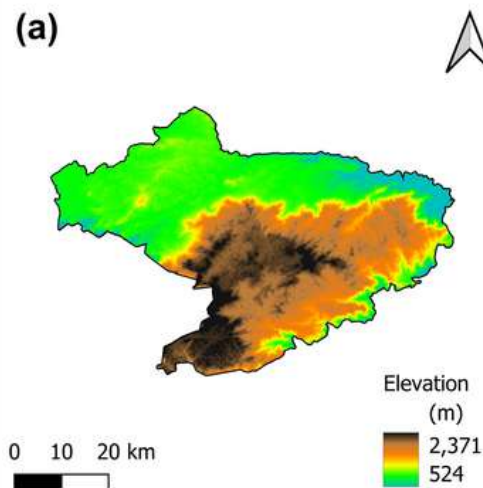
ACHIEVEMENT

Dr. F. Paul Gregory, Assistant Professor, created a comprehensive study area map and a digital elevation model (DEM) based on **topographical elevation map for the district of Nilgiris.** The maps were created using QGIS software. The research is one of its kind focusing on providing renewable energy to even the most remote areas of Nilgiris. While most researches have focused on Ooty, Kotagiri and Coonoor, this research focuses on assessing renewable energy availability for less hilly remote areas around Pandalur, Masinagudi, Theppakadu, Thaloor, Thengumarahada, Gudalur and Cherambadi.

ACHIEVEMENT

STUDENTS ACHIEVEMENT

⭐

Mr. Harish K., IV B.E. Mechanical Engineering, secured a CGPA of 8.96.

Ms. Kalasri V., IV B.E. Mechanical Engineering, secured a CGPA of 8.28.

Mr. Sanjeedh Ahmed S, IV B.E. Mechanical Engineering, secured a CGPA of 7.97.
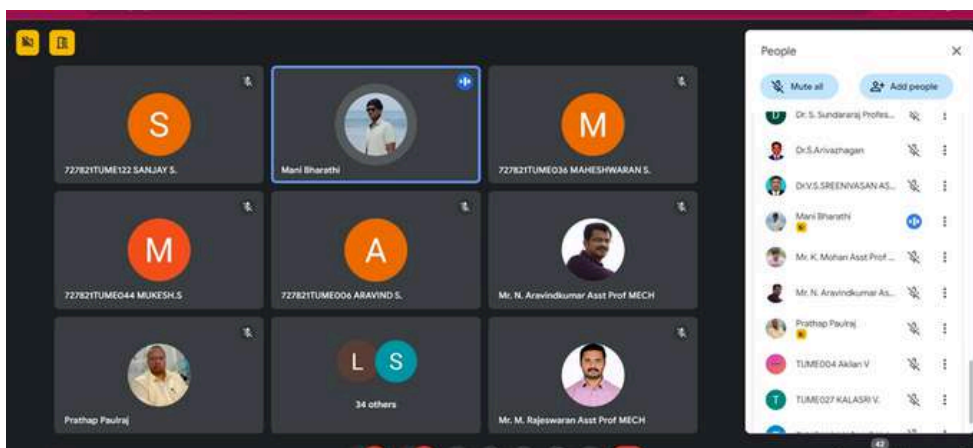
ACHIEVEMENT

MECHANICAL ENGINEERING

EVENTS

Dr. P. Prathap, Head of the Department of Mechanical Engineering, addressed and welcomed the final year students for the VII Semester.

EVENTS

EVENTS

The Department of Mechanical Engineering in association with Alumni Cell conducted a webinar on **"Core Placement - MYTHS and FACTS."**

EVENTS

MECHANICAL ENGINEERING

STUDENT PARTICIPATION

Mr. S. Sridharan, Mr. R. Arun Siva, Mr. S. Sanjay and **Mr. M. Vishal,** Students of II B.E. Mechanical Engineering attended an Industrial Training at Shri Hari Kanthan Industry, Coimbatore.

ACHIEVEMENT

STUDENT PARTICIPATION

Mr. S. Srihari, Mr. A. Surendhar and **Mr. G. D. Sai Krishna**, Students of II B.E. Mechanical Engineering attended an Industrial Training at Mano Aircraft, Coimbatore.

ACHIEVEMENT

MECHANICAL ENGINEERING

FACULTY PARTICIPATION

Mr. M. Rajeswaran and **Mr. K. Senthil Kumar**, Assistant Professors, attended an industrial training in Sri Vinayaga Plast Pvt. Ltd., Coimbatore.

ACHIEVEMENT

FACULTY PARTICIPATION

Mr. M. K. Prabhu, Assistant Professor, attended an one-week FDP on **"Recent Trends in Artificial Intelligent and Machine Learning"** organised by Bonam Venkata Chalamayya Engineering College, Odalarevu.

ACHIEVEMENT

MECHANICAL ENGINEERING

INDUSTRY CONNECT

The Department of Mechanical Engineering has signed an MoU with Aquasub Engineering, Coimbatore, represented by **Dr. P. Prathap, Professor and Head, and Dr. Jeen Robert B**. The MoU aims to enhance knowledge sharing, research and development, industrial visits, industrial project work, placements and collaborations, studies and industry consultancy, and guest lectures and workshops.

ACHIEVEMENT

STUDENTS PARTICIPATION

In association with ICT Academy and Autodesk, has organised the "Design Now Challenge Workshop," a three-day virtual event for mechanical engineering students from 27th to 29th June 2024. This workshop served as a precursor to the 6th Edition of the "Design Now Challenge" and the national-level competition, "India Design Week - 2024. As a result, students enhanced their understanding of rendering techniques and their applications in mechanical engineering,

ACHIEVEMENT

SCIENCE AND HUMANITIES

FACULTY PARTICIPATION

Dr. P. Arun Kumar, Assistant Professor completed a Coursera course on **"Teaching in Google Classroom."**

ACHIEVEMENT

FACULTY PARTICIPATION

Dr. N. Nalini, Assistant Professor, attended a webinar on **"Bridging the Chasm: How Heritage Empowers Modern Education"** - IQAC, SR University, Warangal on 24 May 2024.

ACHIEVEMENT

SCIENCE AND HUMANITIES

FACULTY PARTICIPATION

Dr. B. Kogilavani and **Ms. P. Jinsha,** Assistant Professors, Department of Science and Humanities attended a Webinar on **"World Environment Day Celebration- Land Restoration Desertification and Drought Resilience** on 05 June 2024.

ACHIEVEMENT

FACULTY PARTICIPATION

Dr. B. Kogilavani and Ms. P. Jinsha, Assistant Professors, Department of Science and Humanities attended a Webinar on **"Wealth Creation Through Financial Planning"** organized by Sankardev College, Meghalaya associated with Mutual Funds in India on 05 June 2024.

ACHIEVEMENT

SCIENCE AND HUMANITIES

FACULTY ACHIEVEMENT

The Department of Science and Humanities in association with SAHA organised a Guest Lecture on **"Majestic Lexicon: Paving the Path of Professionalism in Business English "** to the students of First B.Tech. IT and B.E. Civil Engineering on 25 May 2024.

ACHIEVEMENT

FACULTY ACHIEVEMENT

The Department of Science and Humanities in association with IIC organizes a Guest Lecture on **"The Roadmap to Success"** on 28 May 2024.

ACHIEVEMENT

SCIENCE AND HUMANITIES

FACULTY ACHIEVEMENT

The Department of Science and Humanities in association with IIC organised an Invited Lecture on "**Innovation in Systems, Applications and Products (SAP): A New Era of IT in enterprises**" on 08 June 2024.

ACHIEVEMENT

FACULTY ACHIEVEMENT

On account of World Environment Day, the Department of Science and Humanities in association with SAHA organized a Paper Presentation on **"Plastic: Reuse, Reduce, Recycle"**on 05 June 2024.

ACHIEVEMENT

SCIENCE AND HUMANITIES

The Department of Science and Humanities organised a Student led activity on "**Beyond the Buzz: A War of Words**" as a part of World Environment Day on 05 June 2024.

ACHIEVEMENT

The Department of Science and Humanities organised an expert talk on **"Stress Management-Wide Spectrum of Techniques and Psychotherapies**" on 14 June 2024.

ACHIEVEMENT

Mr. D. Maheshkumar, Assistant Professor, published an article in Springer on "**An analytical and Numerical Approach to Chemo-Radiotheraphy Model for the Treatment of Brain Tumor.**" Doi no: https://doi.org/10.1007/s12597-024-00782-0.

An analytical and numerical approach to chemo-radiotherapy model for the treatment of brain tumor

S. Sujitha[1] · T. Jayakumar[1] · D. Maheskumar[2] · E. Vargees Kaviyan[1]

Abstract
Chemotherapy is a standard cancer treatment that can be provided alone or with other therapies. Recent research has revealed that combined therapy can successfully remove malignancies when chemotherapy alone cannot. A six-compartmental nonlinear mathematical model is proposed for treating brain tumors based on glial cells, sensitive glioma cells, resistant glioma cells, and neurons with chemo-radiotheraphy treatment. Nonlinear differential equations can be analytically solved by variation of constant parameter formula. The system's stability analysis is discussed across different treatment categories. Numerical simulation results for the suggested model, considering various treatment procedures, help to understand the therapy's effect. Finally, the validity of the system is verified through a comparison of the analytical technique and numerical simulation.

Keywords Chemo-radiotherapy · Analytical solution · Sensitive glioma Cells · Resistant glioma Cells · Drug resistance

Mathematics Subject Classification 34D20 · 37M05

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ACHIEVEMENT

SCIENCE AND HUMANITIES

FACULTY PARTICIPATION

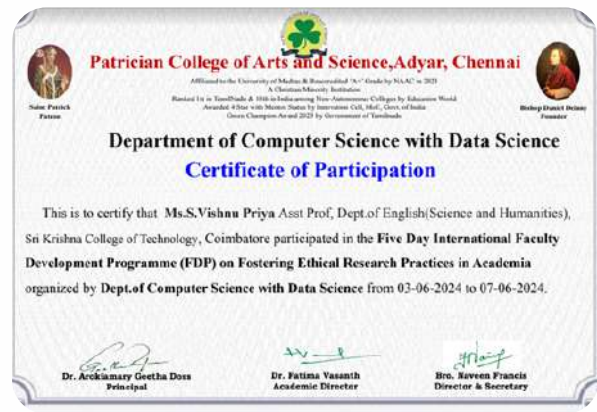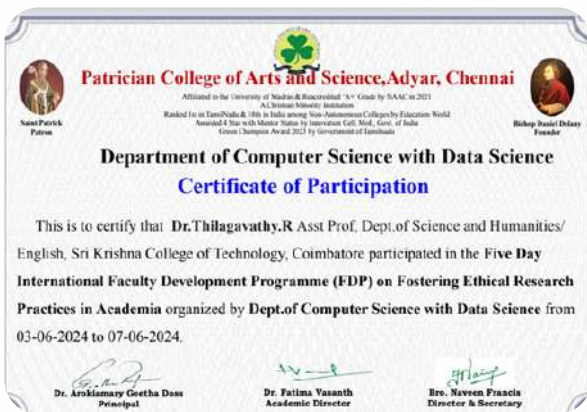**Dr. N. Nalini** and **Dr. B. Kogilavani,** Assistant Professors, completed following Coursera courses.

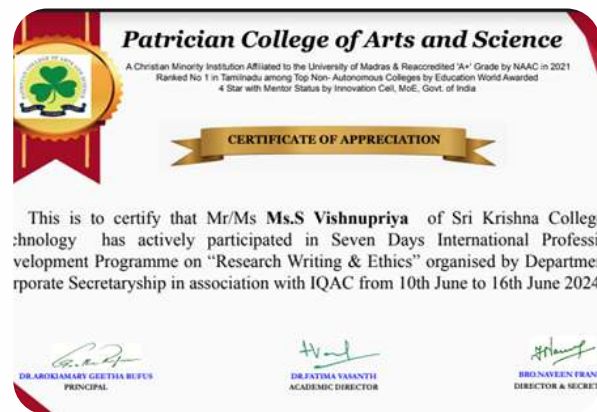# SCIENCE AND HUMANITIES

Dr. R. Thilagavathy and **Ms. S. Vishnu Priya,** Assistant Professors, attended a Five-day International FDP on "**Fostering Ethical Research Practices in Academic**" organized by the Department of Computer Science with Data Science during 03-07 June 2024.

Dr. R. Thilagavathy and **Ms. S.Vishnu Priya,** Assistant Professors, attended a Seven-day International Professional Development Programme on **"Research Writing & Ethics**" organized by the Department of Cororate Secretaryship in association with IQAC during 10-16 June 2024.
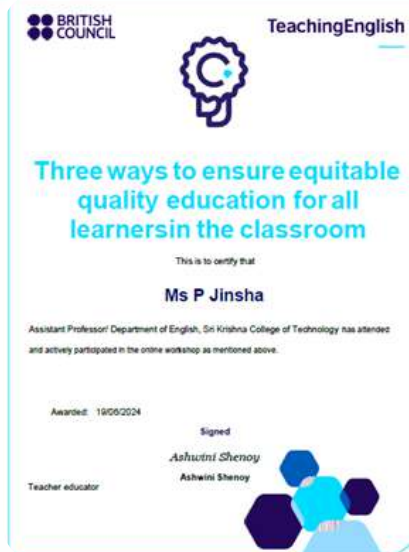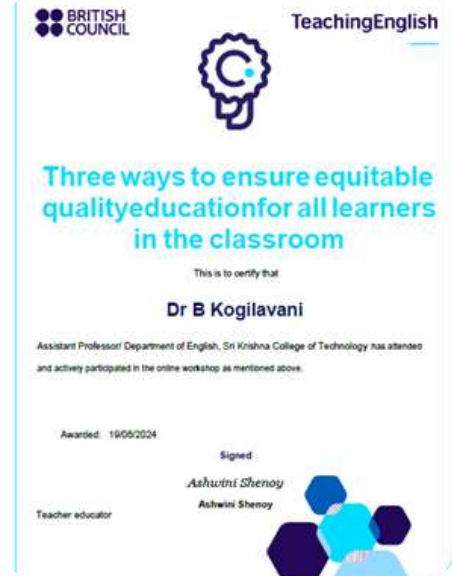

ACHIEVEMENT

FACULTY PARTICIPATION

Dr. B. Kogilavani, Ms. P. Jinsha and **Ms. S. Vishnupriya, Assistant** Professors, attended an online workshop on **"Three ways to ensure equitable quality education for all learners in the classroom."**

ACHIEVEMENT

EVENT ORGANIZED

The Department of Science and Humanities organized an alumni talk on **"Start up Plans and Plights"** on 15 June 2024.

EVENTS

MBA

SCHOOL ACHIEVEMENT

727822TPMB137 - Shriswathika
727822TPMB005 - Aravinthan S
727822TPMB003 - Aravind Chockalingam
727822TPMB130 - Sandhiya R
727822TPMB046 - Kavya L
727822TPMB115 - Prabhakaran A
727822TPMB109 - Nithya T
727822TPMB051 - Kishore S
727822TPMB155 - Vignesh R K

GRANTLEY
EDUTECH PRIVATE LIMITED

2022 -2025 Batch MBA students got placed in GRANTLEY EDUTECH PVT

CTC: 4.5 - 6 LPA

Designation: Business Development Associate

— PLACEMENT —

SCHOOL PARTICIPATION

2023-2025 Batch students attended Query Solving Session conducted by Indian Institute of Banking and Finance in an Online mode on 01 June 2024.

— QUERY SOLVING SESSION —

MBA

BOS MEETING

The School of Management, SKCT, is pleased to announce the successful **17th Board of Studies meeting for the MBA program**, held on June 28, 2024. The meeting was attended by Dr. C.N. Narayana, Group Director - SKI, and Dr. R. Jeegajevan, Principal - SKASC, as subject experts; Dr. Sridevi, Professor at NIT Trichy, as AU nominee; Dr. Ramu, Dean at IFIM, Bangalore, and Dr. Senthilkumar, ASP at Pondicherry University, as academic experts; and Mr. R. VijayaKrishnan, Manager-OPEX at Sakthi Finance Ltd, as the industry expert, along with our SoM, SKCT faculty members. The 59-minute deliberation highlighted and recommended 18 points, with 14 unanimous points considered by the Board. Notably, the meeting started on time, with one recommendation made every three minutes.

MBA

FACULTY ONLINE CERTIFICATION
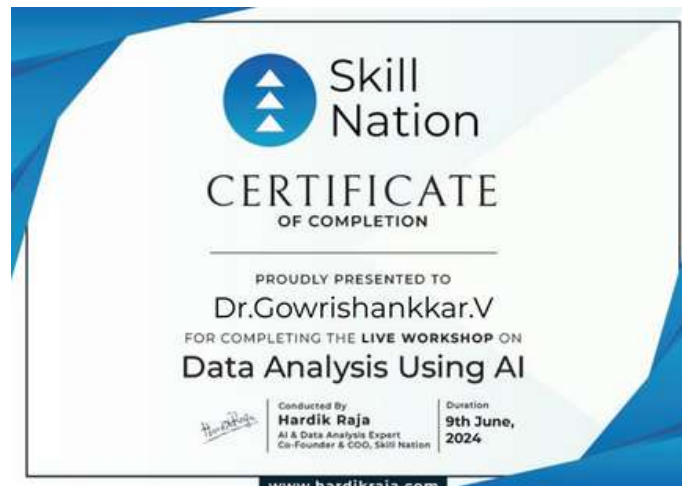
Dr. Gowrishankkar V., Assistant Professor, School of Management completed a course on **"Data Analysis Using AI conducted by Skill Nation."**

— SKILL NATION —

FACULTY ONLIINE CERITIFICATION

coursera

Dr. Gowrishankkar V. - Organisational design: Known your organisation

Dr. M. S. Sibi - What is Social , Blockchain and Cryptocurrency Explained, The Importance of Listening,The Future of Payment Technologies, Raising Capital: Credit Tech, Coin Offerings, and Crowding, Foundations: Data, Data, Everywhere, Innovations in Investment Technology: Artificial Intelligence, Financial Technology(Fintech) Innovations.

— COURSERA —

MBA

FACULTY ONLINE CERTIFICATION

coursera

Mr. S. Siva - Integrated Marketing Communications: Advertising, public Relations, Digital Marketing and more.

Dr. S. Piradeep - Integrated Marketing Communications: Advertising, public Relations, Digital Marketing and more, The future of Payment Technologies, Small Business Marketing Using You Tube.
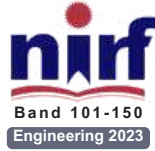
SKILL NATION

EVENT ORGANIZED
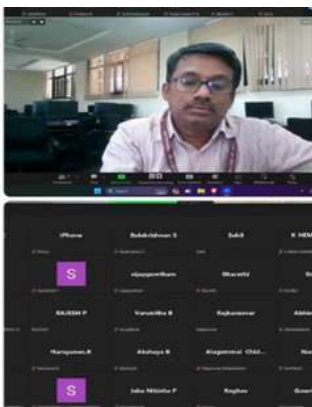
The School of Mangement organised a workshop on "**Recent trends in Intellectual Property Rights**" for I MBA on 31 May 2024. Resource Person: **Dr. S. Piradeep**, Assistant Professor, School of management, SKCT.

WORKSHOP

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