



**SUSTAINABLE
DEVELOPMENT
GOALS**

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**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 23
17 NOV - 24 NOV 2024**

SKCT

DIGEST

THE PRIDE OF OUR REFLECTION



ISBN NUMBER



978-93-5895-815-7

“The difference between theory and practice
is smaller in theory than it is in practice.”

- Albert Einstein

Contact Us

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Coimbatore - 641 042.



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SRI KRISHNA INSTITUTIONS COIMBATORE



Coimbatore Vizha Parade



24.11.2024



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Student Participation

Mr Thivin Krishna M, Student of Third B.Tech. ADS, participated in a 2-day workshop on “StudAI Elev8 Workshop: Hands on with Generative AI.”





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ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Student Achievement

Ms Anushalakshmi S, Student of Second B.Tech. ADS, completed **8 courses** in “**Learnathon 2024**” organised by ICT Academy, Coimbatore.



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Students' Achievement

Ms Pavanikha S N, Mr Thadeus Cruz Govindapillai, Mr Arun Prasad K, Ms Kavya S, Mr Abishek A, Ms Visali S R, Ms Jenisha Angel B, Mr Thivin Krishna M, Mr Harris Jayaram, Mr Harihara Maharajan S, Mr Anand, Ms Gopikadevi M T, Ms Thamizhini K R and Mr Sanjay S, students of Third B.Tech. ADS, successfully completed the online certification course on “Big Data Computing” offered through NPTEL and secured **Elite distinction**.

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

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

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

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

This certificate is awarded to
THADEUS CRUZ GOVINDAPILLAI
for successfully completing the course
Big Data Computing
with a consolidated score of **71 %**

Online Assignments	23.75/25	Proctored Exam	47.25/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **5564**

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

Prof. B. V. Raviish Kumar
Chairman, Centre for Continuing Education
IIT Kanpur

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur

Roll No: NPTEL24CS
Roll No: NPTEL24CS
Roll No: NPTEL24CS130S
Roll No: NPTEL24CS130S4540329S

To verify the certificate

No. of credits recommended: 2 or 3

swayam



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ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Placement

Mr Kiran Kumar R Student of Final B.Tech. ADS , received a placement offer from **“Cognizant.”**



KIRAN KUMAR R

727821TUAD026

Batch 2021-25/ADS

Mr Sundar S and **Ms Tejasvni K R**, Students of Final B.Tech. ADS, received a placement offer from **“IBM.”**



SUNDAR S

727821TUAD054

Batch 2021-25/ADS



TEJASVNI K

727821TUAD056

Batch 2021-25/ADS





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ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Faculty Online Certification

Dr K Vimala, Asst. Professor, completed various online certification courses on **“AI-first Software Engineering”**, **“Generative AI Landscape”**, **“Introduction to OpenAI GPT Models”** and **“Prompt Engineering”** offered through Infosys Springboard.





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INSTITUTION'S INNOVATION COUNCIL

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CSE (CYBER SECURITY)

Student Participation

Mr Samuvel Arumugam A, Student of Second B.E. CSE (CyS), participated in a workshop on “**Ethical Hacking and Cyber Security**” organised by Indian Institute of Space Science and Technology during 03-06 October 2024.





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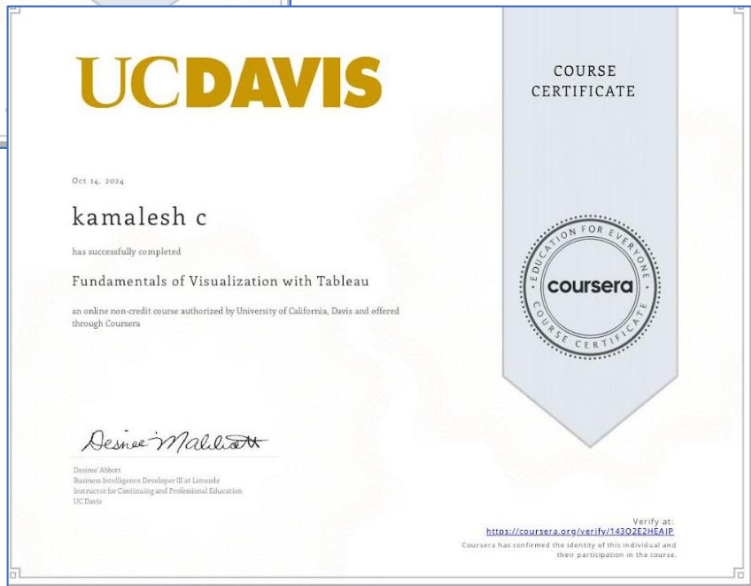
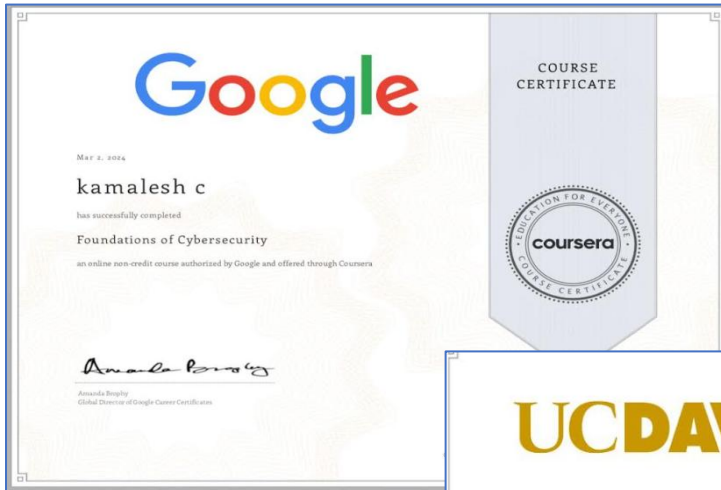
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CSE (CYBER SECURITY)

Student Participation

Mr **Kamalesh C**, Student of Second B.E. CSE(CyS), completed an online certification courses on **“Fundamentals of Cybersecurity”** and **“Fundamentals of Visualization with tableau”** offered through Coursera.





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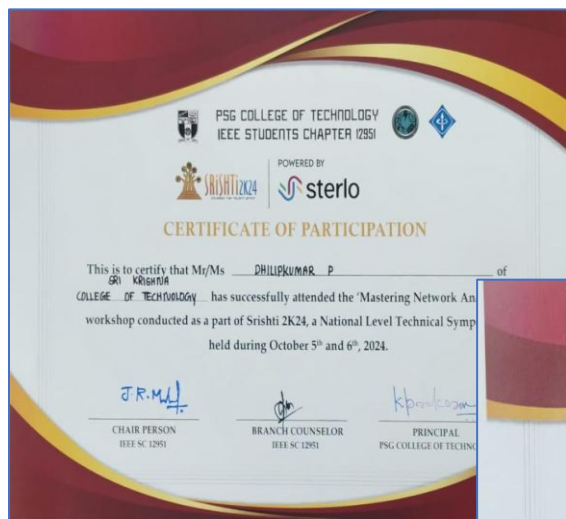
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CSE (CYBER SECURITY)

Student Participation

Mr Dhilipkumar P, a student of Second B.E. CSE (CyS), attended workshops on “Web Application Pentesting and Bug Bounty” and “Mastering Network Analysis,” organized as part of the Srishti 2K24 National Level Technical Symposium by PSG College of Technology, Coimbatore, held on 05–06 October 2024.





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CSE (CYBER SECURITY)

Student Participation

Mr Deepak B, Student of Second B.E. CSE (CyS), attended **LiRO 2k24 event** organised by V.S.B. Engineering College, Karur on 26 October 2024.





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CSE (AI&ML)

Student Participation

Ms Keja Lakshmi, Student of Second B.E. CSE (AML), completed one-month internship on “**Machine Learning**” with Prodigy Infotech during 01-31 October 2024.





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CSE (AI&ML)

Student Achievement

Mr Dhamodharan S, Student of Second B.E. CSE (AML), completed online certification course on “**Deep Learning**” with **Elite+Silver** distinction offered through NPTEL.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)





This certificate is awarded to

DHAMODHARAN S

for successfully completing the course

Deep Learning

with a consolidated score of **75** %

Online Assignments	16.06/25	Proctored Exam	59.09/75
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Total number of candidates certified in this course: **2762**






Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)



Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras




Indian Institute of Technology Madras



FREE ONLINE EDUCATION
swayam
शिक्षण सर्वत्र, ज्ञान सर्वत्र

Roll No: NPTEL24CS114S852401328

To verify the certificate 

No. of credits recommended: 3 or 4



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CSE (AI&ML)

Student Achievement

Mr Jeeva J P, Student of Second B.E. CSE (AML), completed online certification course on “**Cyber Security and Privacy**” with **Elite** distinction offered through NPTEL.

Elite

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




This certificate is awarded to
JEEVA J P
for successfully completing the course
Cyber Security and Privacy



with a consolidated score of **65 %**

Online Assignments	24.69/25	Proctored Exam	40.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **6461**


Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)


Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL24CS121S1059100205 To verify the certificate 
No. of credits recommended: 3 or 4

CSE (AI&ML)

Faculty Achievement

Dr Naveenbalaji G, Assoc. Professor, has been recognized as a **“Senior Member of IEEE”** in good standing through December 2025, denoting a personal and professional commitment to the advancement of technology. .



CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor, participated in the IEEE Xplore Webinar on “**Search Strategies to Personalize and Accelerate Your Research Experience**” on 22 November 2024. .



CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor, participated in **"Technical English: Strategies to Improve Workplace and School Success"** on 20 November 2024.





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CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor, participated in **"Data Science Strategies to Analyze the Impact of Transportation and Infrastructure on the Environment"** on 18 November 2024.



CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor, attended the **"AI Standards: Ethical Considerations and Best Practices When Implementing AI in Your Organization"** on 18 November 2024.



CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor , participated in **"IEEE Authorship and Open Access Symposium: Tips and Best Practices to Get Published from IEEE Editors"** by IEEE on 17 November 2024.





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INSTITUTION'S INNOVATION COUNCIL
(University of Education Initiative)



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CSE (AI&ML)

Faculty Participation

Dr Naveenbalaji G, Assoc. Professor, completed a course on "**Learning Java 11**" offered through Infosys Springboard on 14 November 2024.



CSE (INTERNET OF THINGS)

Faculty Achievement

Mr Shanmuga Raju S, Asst. Professor, completed NPTEL course on "Introduction to Internet of Things" with **Elite +Gold** distinction.



NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



कोशल भारत - कुशल भारत



This certificate is awarded to
SHANMUGA RAJU S
for successfully completing the course

Introduction to Internet of Things

with a consolidated score of **90** %

Online Assignments	24.13/25	Proctored Exam	65.5/75
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Total number of candidates certified in this course: **33131**

Jul-Oct 2024
(12 week course)



Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



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swayam
Prof. Dr. Bhanu Prasad, IIT Kharagpur

Roll No: NPTEL24CS115S758600146 To verify the certificate  No. of credits recommended: 3 or 4

CSE (INTERNET OF THINGS)

Faculty Participation

Ms Pavithra S, Asst. Professor, completed online course on “**Java for Beginners**” offered through Infosys Springboard on 07 November 2024.



CSE (INTERNET OF THINGS)

Faculty Participation

Ms Priyadharshini S, Asst. Professor, attended an online workshop on **“NVIDIA’s JETSON NANO”** organised by **Pantech e-Learning** on 09 November 2024.



CSE (INTERNET OF THINGS)

Faculty Participation

Ms Priyadharshini S, Asst. Professor, completed online course on **“Java for Beginners”** offered through Infosys Springboard on 07 November 2024.



CIVIL ENGINEERING

Faculty Achievement

Mr Manoj K M, Asst. Professor, published an article on “Comparative Study on Various Properties of Paver Block produced from Municipal Plastic Waste” in journal of E3S Web of Conferences indexed in Scopus.

E3S Web of Conferences 529, 01020 (2024)
ICSMEE'24

<https://doi.org/10.1051/e3sconf/202452901020>



Mr Manoj K M

COMPARATIVE STUDY ON VARIOUS PROPERTIES OF PAVER BLOCK PRODUCED FROM MUNICIPAL PLASTIC WASTE

M. Senthil Rajan^{*1}, K. M. Manoj², M. Dharun¹, S. Navanthakrishnan¹, Shiyamala³

¹ Department of civil engineering, Dr. N.G.P Institute of Technology, Coimbatore, Tamil Nadu.

² Department of civil engineering, Sri Krishna College of Technology, Coimbatore, Tamil Nadu.

³ Department of civil engineering, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu.

Abstract. In order to lower the cost of paver blocks and use waste plastic bottles in the manufacturing process instead of using conventional concrete paver blocks, this study proposes to substitute coarse aggregates with plastic trash in paver blocks. The project's goals are to make paver blocks more affordable while also reducing environmental pollution and plastic waste in a beneficial way. For the experiment, three different types of nine paver blocks, each measuring 220 x 180 x 70 mm and 240 x 120 x 60 mm, were created. In this study, we combined various amounts of plastic trash with coarse gravel and sand. After the paver blocks were assembled and put through testing, the findings showed improved compressive strength and water absorption. Hydrocarbons, which can be obtained from a variety of sources including coal, oil, and certain minerals, are used to make plastic. There are many different types of plastic, such as Low Thickness Polyethylene (LDPE) and High Thickness Polyethylene (HDPE). These leftover polymers are then to be effectively utilized in the production of paver squares. To produce high-quality blocks with warm and sound protection qualities to deal with contamination and to lower the overall cost of development, low-thickness polyethylene is spotlessly mixed with the sand and aggregate at different rates. This is probably the most ideal approach to prevent the collection of plastic waste.

Keywords. Plastic waste, Paver Block, Sustainability.



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CIVIL ENGINEERING

Student Achievement

Ms Sowthicksha S, Student of First B.E. Civil Engineering, secured the **Third Prize** in **Open State Bench-press and Deadlift Championship** organised by Strong Man of Tamil Nadu 2024.





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COUNCIL

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CIVIL ENGINEERING

Students Participation

The Students of First B.E. Civil Engineering visited “**Build Excon 2024**” an Innovative Construction Materials Expo organised by Coimbatore District All Civil Engineers Association at CODISSIA on 23 November 2024.





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CIVIL ENGINEERING

Academic Review Meeting

The Dept. of Civil Engineering conducted “**Academic Review Meeting**” for the Students of First B.E. Civil Engineering on 22 November 2024.





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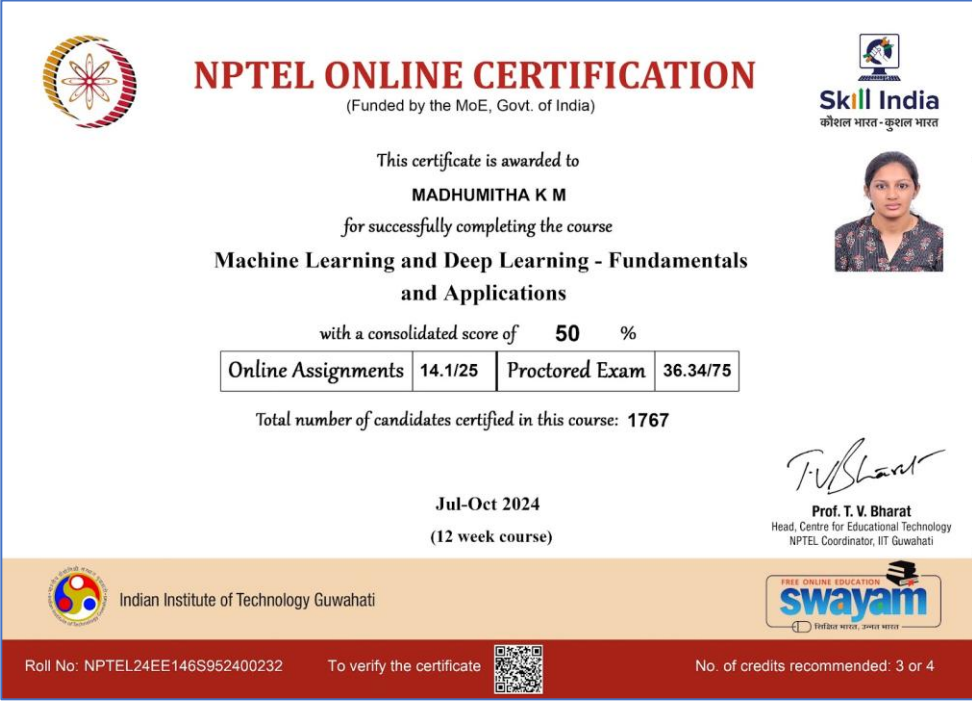
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COMPUTER SCIENCE AND ENGINEERING

Faculty Participation

Ms Madhumitha K M, Asst. Professor, completed a online certification course on **“Machine learning and Deep Learning - Fundamentals and Applications”** offered through NPTEL.



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

This certificate is awarded to
MADHUMITHA K M
for successfully completing the course
Machine Learning and Deep Learning - Fundamentals and Applications
with a consolidated score of **50** %


Online Assignments	14.1/25	Proctored Exam	36.34/75
--------------------	---------	----------------	----------

Total number of candidates certified in this course: 1767

Jul-Oct 2024
(12 week course)

Prof. T. V. Bharat
Head, Centre for Educational Technology
NPTEL Coordinator, IIT Guwahati

Indian Institute of Technology Guwahati

Roll No: NPTEL24EE146S952400232 To verify the certificate  No. of credits recommended: 3 or 4



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COMPUTER SCIENCE AND ENGINEERING

Faculty Participation

Ms G Sandhya, Asst. Professor, attended an FDP on **“Building Web Development Solutions with Cloud Computing”** under the Next Gen Employability Programme.



COMPUTER SCIENCE AND ENGINEERING

Faculty Publication

Ms G Sandhya, Asst. Professor, published a paper on **"IoT based Security System in Railway Tracks"** in the conference proceeding of 2nd IEEE International Conference on Advances in Information Technology, ICAIT 2024 – Proceedings 2024.

Conferences > 2024 Second International Con...

IoT Based Security System In Railway Tracks

Publisher: IEEE [Cite This](#) [PDF](#)

G Sandhya ; S Rabiya Reshma ; R Jebeena Satin ; R Logeshwari [All Authors](#)

10 Full Text Views

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Abstract

Document Sections

- I. Introduction
- II. Literature Survey
- III. Methodology
- IV. Experimental Work
- V. Results and Discussions

[Show Full Outline ▾](#)

Abstract:
Our Internet of Things (IoT)-based Railway Track Security System is a cutting-edge solution to increasing issues on train accidents and animal deaths on railway lines. The real-time animal identification and alerts accomplished with the help of Artificial Intelligence powered cameras and Python algorithms by system. It ensures prompt notifications to approaching trains and nearby train stations with the help of Long-Range (LoRa) communication, allowing for proactive responses to potential threats. Based on Python programming, the system's architecture ensures a robust and flexible backend. This system allows for seamless integration with the current rail system and for future enhancements. As a proactive and efficient solution, our technology enhances track safety, lowers accident rates, and safeguards the lives of people and animals on railroad tracks.

Published in: 2024 Second International Conference on Advances in Information Technology (ICAIT)

Date of Conference: 24-27 July 2024 **DOI:** 10.1109/ICAIT61638.2024.10690337

Date Added to IEEE Xplore: 04 October 2024 **Publisher:** IEEE

Authors

Figures

ISBN Information: **Conference Location:** Chikkamagaluru, Karnataka, India

COMPUTER SCIENCE AND ENGINEERING

Faculty Publication

Dr R Gnanakumari, Asst. Professor, published a paper on "Advanced Trust Classification in Social Networks using a Triple Generative Adversarial Network - Assisted Capsule Network Enhanced by Gannet Optimization" in Applied Soft Computing, Elsevier (Q1 Journal) with an impact factor of 7.2 and SCIE & Scopus indexing.

Applied Soft Computing Journal 167 (2024) 112396

Contents lists available at ScienceDirect

Applied Soft Computing

journal homepage: www.elsevier.com/locate/asoc

Advanced trust classification in social networks using a triple generative adversarial network-assisted capsule network enhanced by gannet optimization

R. Gnanakumari^{a,*}, P. Vijayalakshmi^b

^a Department of Computer Science and Engineering, Sri Krishna College of Technology, Ariyalur, Virudhunagar, Tamil Nadu 641042, India
^b Department of Electronics and Communication Engineering, Hindusthan College of Engineering and Technology, Coimbatore, India

HIGHLIGHTS

- Introduces Trust-TripleGAN-CapsNet-GOA for trust classification in social networks, improving accuracy and precision.
- Employs Triple Generative Adversarial Network and Capsule Network, refining trust evaluations.
- Uses Gannet Optimization Algorithms to optimize weight parameters, enhancing classification accuracy.
- Outperforms existing models like Trust-SNP-FS, Trust-DMF-SN, and TACADTrust-SN in simulation tests.
- Achieves up to 99% accuracy in trust behavior predictions within social networks.

ARTICLE INFO

Keywords:
Capsule network
Gannet optimization algorithm
Tanimoto similarity coefficient
Triple generative adversarial network
Trust classification in social networks

ABSTRACT

Over the past ten years, social networks (SN) have evolved into the primary infrastructure for people's everyday activities. Trust classification in social networks involves evaluating the trustworthiness of users or the information they share. Traditional trust classification methods often rely on explicit features, such as user ratings, reviews, and social ties. These methods utilize rule-based to assign trust scores for users or entities. However, they face challenges in capturing the exact nature of trust. In this manuscript, Advanced Trust Classification in Social Networks using a Triple Generative Adversarial Network-Assisted Capsule Network Enhanced by Gannet Optimization (Trust-TripleGAN-CapsNet-GOA) is proposed. In this manuscript, the feature vector has computed to every social network users pair after the raw data from the Sentiment140 dataset, is analysed. The membership of trust is then ranked according to five-class classifications by incorporating Tanimoto Trust Similarity coefficient. Then, Triple Generative Adversarial Network-Assisted Capsule Network (TripleGAN-CapsNet) is used to categorise the trust values of users. Finally, the weight parameters of TripleGAN-CapsNet is optimized by the Gannet Optimization Algorithm (GOA) to enhance the accuracy of the trust behaviour in SN. The proposed Trust-TripleGAN-CapsNet-GOA method attains 22.94%, 32.36% and 21.96% higher accuracy, 30.27%, 19.46% and 12.39%, higher precision when analyzed with the existing models, such as a method for trust mirroring assessment under social networks parameters with fuzzy system (Trust-SNP-FS), deep matrix factorization in social networks for trust-aware recommendation (Trust-DMF-SN) and towards time-aware context-aware deep trust prediction on the online social networks (TACADTrust-SN). The simulation outcomes exhibit that the proposed method attains 99% accuracy.

COMPUTER SCIENCE AND ENGINEERING

Faculty Publication

Dr R Gnanakumari , Asst. Professor, published a paper on "**Advanced Trust Classification in Social Networks using a Triple Generative Adversarial Network-Assisted Capsule Network Enhanced by Gannet Optimization**" in Applied Soft Computing, Elsevier (Q1 Journal) with an impact factor of 7.2 and SCIE & Scopus indexing.



COMPUTER SCIENCE AND ENGINEERING

Student Participation

Mr Anveethraaj K S, Student of Third B.E. CSE, completed an online certification course on **“Introduction to Internet of Things”** offered through NPTEL.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
शिक्षण भारत - कुशल भारत

This certificate is awarded to
ANVEETHRAAJ K S
for successfully completing the course



Introduction to Internet of Things

with a consolidated score of **65** %

Online Assignments	24.78/25	Proctored Exam	40.5/75
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Total number of candidates certified in this course: 33131

Jul-Oct 2024
(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL24CS115S856900290

To verify the certificate



No. of credits recommended: 3 or 4

ELECTRONICS AND COMMUNICATION ENGINEERING

Placement

Ms H Thahrin, Ms K Dheepika, Ms D Adhirshya, Mr S Sudhan Kanna, Ms K Preethika, and Mr A Mohammed Fahiem, Students of Final B.E. ECE, received placement offer from “Cognizant.”



THAHRIN H
(727821TUEC242)
Batch 2021 - 25



DHEEPIKA K
(727821TUEC036)
Batch 2021 - 25



ADHIRSHYA D
(727821TUEC004)
Batch 2021 - 25



SUDHAN KANNA S
(727821TUEC234)
Batch 2021 - 25



PREETHIKA K
(727821TUEC135)
Batch 2021 - 25



MOHAMMED FAHIEM A
(727821TUEC121)
Batch 2021 - 25

For successfully Receiving Placement Offer with





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ELECTRONICS AND COMMUNICATION ENGINEERING

Placement

Ms S Thanushiya, Student of Final B.E. ECE, received a placement offer from **“IBM”** with a CTC of 4.5 LPA.



THANUSHIYA S

727821TUEC244

Batch 2021-25/ECE

for getting Placement offer with





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ELECTRONICS AND COMMUNICATION ENGINEERING

Students' Certification

Mr L Prashanth, Student of Second B.E. ECE, completed a 8-week course on **“Developing Soft Skills and Personality”** through NPTEL and secured **Topper Position** with **ELITE + SILVER** distinction.

Mr M Kisho Varma, Student of Third B.E. ECE, completed a 8-week course on **“Developing Soft Skills and Personality”** through NPTEL and secured **ELITE + SILVER** distinction.



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

This certificate is awarded to

PRASANTH L

for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **88 %**

Online Assignments | 22.79/25 | Proctored Exam | 65.25/75

Total number of candidates certified in this course: 10687



Prof. B. V. Ratish Kumar
Chairman, Centre for Continuing Education
IIT Kanpur

Aug-Oct 2024
(8 week course)



Skill India
where every one - grows every one



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

This certificate is awarded to

M KISHO VARMA

for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **75 %**

Online Assignments | 19.67/25 | Proctored Exam | 55.75/75

Total number of candidates certified in this course: 10687



Skill India
where every one - grows every one



Prof. B. V. Ratish Kumar
Chairman, Centre for Continuing Education
IIT Kanpur

Aug-Oct 2024
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL24HS176555200937

To verify the certificate



No. of credits recommended: 2 or 3



Indian Institute of Technology Kanpur



Roll No: NPTEL24HS1765552404586

To verify the certificate



No. of credits recommended: 2 or 3



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ELECTRONICS AND COMMUNICATION ENGINEERING

Students' Certification

Ms K M Visalini, Mr V Saikrishna, Mr A Karuppasamy Karthikshun, and Ms P Kanimozhi, Students of Second B.E. ECE, completed a 8-week course on **“Developing Soft Skills and Personality”** through NPTEL and secured **ELITE + SILVER** distinction.

<p>Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India)</p> <p>This certificate is awarded to VISALINI K M for successfully completing the course Developing Soft Skills and Personality with a consolidated score of 75 %</p> <table border="1"> <tr> <td>Online Assignments</td> <td>22.5/25</td> <td>Proctored Exam</td> <td>52.75/75</td> </tr> </table> <p>Total number of candidates certified in this course: 10687</p> <p>Prof. B. V. Ralish Kumar Chairman, Centre for Continuing Education IIT Kanpur</p> <p>Aug-Oct 2024 (8 week course)</p> <p>Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur</p> <p>Indian Institute of Technology Kanpur</p> <p>swayam</p> <p>Roll No: NPTEL24HS176S552403055 To verify the certificate No. of credits recommended: 2 or 3</p>	Online Assignments	22.5/25	Proctored Exam	52.75/75	<p>Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India)</p> <p>This certificate is awarded to SAIKRISHNA V for successfully completing the course Developing Soft Skills and Personality with a consolidated score of 79 %</p> <table border="1"> <tr> <td>Online Assignments</td> <td>22.33/25</td> <td>Proctored Exam</td> <td>56.25/75</td> </tr> </table> <p>Total number of candidates certified in this course: 10687</p> <p>Prof. B. V. Ralish Kumar Chairman, Centre for Continuing Education IIT Kanpur</p> <p>Aug-Oct 2024 (8 week course)</p> <p>Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur</p> <p>Indian Institute of Technology Kanpur</p> <p>swayam</p> <p>Roll No: NPTEL24HS176S552401565 To verify the certificate No. of credits recommended: 2 or 3</p>	Online Assignments	22.33/25	Proctored Exam	56.25/75
Online Assignments	22.5/25	Proctored Exam	52.75/75						
Online Assignments	22.33/25	Proctored Exam	56.25/75						
<p>Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India)</p> <p>This certificate is awarded to KARUPPASAMY KARTHIKSHUN A for successfully completing the course Developing Soft Skills and Personality with a consolidated score of 75 %</p> <table border="1"> <tr> <td>Online Assignments</td> <td>22.13/25</td> <td>Proctored Exam</td> <td>52.5/75</td> </tr> </table> <p>Total number of candidates certified in this course: 10687</p> <p>Prof. B. V. Ralish Kumar Chairman, Centre for Continuing Education IIT Kanpur</p> <p>Aug-Oct 2024 (8 week course)</p> <p>Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur</p> <p>Indian Institute of Technology Kanpur</p> <p>swayam</p> <p>Roll No: NPTEL24HS176S552402923 To verify the certificate No. of credits recommended: 2 or 3</p>	Online Assignments	22.13/25	Proctored Exam	52.5/75	<p>Elite NPTEL ONLINE CERTIFICATION (Funded by the MoE, Govt. of India)</p> <p>This certificate is awarded to KANIMOZHI P for successfully completing the course Developing Soft Skills and Personality with a consolidated score of 86 %</p> <table border="1"> <tr> <td>Online Assignments</td> <td>23.48/25</td> <td>Proctored Exam</td> <td>63/75</td> </tr> </table> <p>Total number of candidates certified in this course: 10687</p> <p>Prof. B. V. Ralish Kumar Chairman, Centre for Continuing Education IIT Kanpur</p> <p>Aug-Oct 2024 (8 week course)</p> <p>Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur</p> <p>Indian Institute of Technology Kanpur</p> <p>swayam</p> <p>Roll No: NPTEL24HS176S552402911 To verify the certificate No. of credits recommended: 2 or 3</p>	Online Assignments	23.48/25	Proctored Exam	63/75
Online Assignments	22.13/25	Proctored Exam	52.5/75						
Online Assignments	23.48/25	Proctored Exam	63/75						



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ELECTRONICS AND COMMUNICATION ENGINEERING

Students' Certification

Mr S Vishaal, Mr K R Dharaneshwaran, Mr S Herbert Sagaya Thilsan, and Ms A Harshini, Students of Second B.E. ECE, completed a 8-week course on “Developing Soft Skills and Personality” offered through NPTEL and secured **ELITE + SILVER** distinction.

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

This certificate is awarded to
VISHAAL S
for successfully completing the course
Developing Soft Skills and Personality
with a consolidated score of **77** %

Online Assignments	22.5/25	Proctored Exam	54/75
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Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HG176552400223 To verify the certificate No. of credits recommended: 2 or 3

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

This certificate is awarded to
DHARANESHWARAN K R
for successfully completing the course
Developing Soft Skills and Personality
with a consolidated score of **81** %

Online Assignments	23.79/25	Proctored Exam	57/75
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Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176552405355 To verify the certificate No. of credits recommended: 2 or 3

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

This certificate is awarded to
HERBERT SAGAYA THILSAN S
for successfully completing the course
Developing Soft Skills and Personality
with a consolidated score of **80** %

Online Assignments	22.29/25	Proctored Exam	57.75/75
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Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176552402890 To verify the certificate No. of credits recommended: 2 or 3

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

This certificate is awarded to
HARSHINI A
for successfully completing the course
Developing Soft Skills and Personality
with a consolidated score of **79** %

Online Assignments	22.5/25	Proctored Exam	56.25/75
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Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176552402887 To verify the certificate No. of credits recommended: 2 or 3



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ELECTRONICS AND COMMUNICATION ENGINEERING

Students' Certification

Mr G R Naga Adithyaa, Mr P Dhayalan, and Ms R Gothai Nachiyar, Students of Second B.E. ECE, completed a 8-week course on “Developing Soft Skills and Personality” offered through NPTEL and secured ELITE distinction.

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

This certificate is awarded to
NAGA ADITHYAA G R
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **70** %

Online Assignments | 22.46/25 | Proctored Exam | 47.25/75

Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176S552402977 To verify the certificate

No. of credits recommended: 2 or 3

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

This certificate is awarded to
DHAYALAN P
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **60** %

Online Assignments | 22.17/25 | Proctored Exam | 37.75/75

Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176S552403887 To verify the certificate

No. of credits recommended: 2 or 3

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

This certificate is awarded to
GOTHA NACHIYAR R
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **71** %

Online Assignments | 23.46/25 | Proctored Exam | 47.25/75

Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

Indian Institute of Technology Kanpur

swayam

Roll No: NPTEL24HS176S552403908 To verify the certificate

No. of credits recommended: 2 or 3



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ELECTRONICS AND COMMUNICATION ENGINEERING

Students' Certification

Mr S Mohamed Nasthaeen, Student of Second B.E. ECE, completed a 8-week course on “**Developing Soft Skills and Personality**” through NPTEL and secured **ELITE** distinction.

Mr G Sughavan, Student of Second B.E. ECE, completed a 12-week course on “**Introduction to Internet of Things**” through NPTEL and secured **ELITE** distinction.



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

This certificate is awarded to
SUGHAVAN G
for successfully completing the course
Introduction to Internet of Things

with a consolidated score of **63** %

Online Assignments	24.38/25	Proctored Exam	39/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: 33131

Jul-Oct 2024
(12 week course)

 Indian Institute of Technology Kharagpur

Roll No: NPTEL24CS115S852400816 To verify the certificate  No. of cr




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

This certificate is awarded to
MOHAMED NASTHAEEEN S
for successfully completing the course
Developing Soft Skills and Personality

with a consolidated score of **60** %

Online Assignments	22.04/25	Proctored Exam	37.75/75
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Total number of candidates certified in this course: 10687

Aug-Oct 2024
(8 week course)

 Indian Institute of Technology Kanpur

Roll No: NPTEL24HS176S552402965 To verify the certificate  No. of credits recommended: 2 or 3

ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr M G Sumithra, Principal and Professor, published a research article on “Efficient Swarm Intelligent Optimization Techniques Using Cooperative Spectrum Sensing for Terrestrial Handovers” in the Journal of Wireless Networks (Springer), 2024.

Wireless Networks
<https://doi.org/10.1007/s11276-024-03856-5> 1/15

ORIGINAL PAPER

Check for updates

Efficient swarm intelligent optimization techniques using cooperative spectrum sensing for terrestrial handovers

M. Suriya¹ · M. G. Sumithra²

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Abstract
A cognitive radio network (CRN) is a dynamic and intelligent radio technology that optimizes spectral efficiency to enhance user experience in any terrestrial communication network. The cooperative spectrum sensing methods tend to significantly improve the sensing performance of cognitive radio to enable interference-free communication in a multi-user environment. Further, the cognition ability of cognitive radio, such as dynamic decision making and self-adaptation, is enhanced by applying Artificial Intelligent (AI) algorithms for learning and optimization. In this research, an AI-based cooperative prediction-based spectrum sensing (CPSS) model is considered to collect the prediction results of channel state information from parallel cognitive users. An evolutionary swarm-based learning model called SpecBFO (Spectrum-based Bacterial Foraging Optimization) algorithm is proposed to enable rapid spectrum decision making. The performance of the suggested SpecBFO model is evaluated to study the convergence probability and time complexity by analyzing the cost function. The experimental results confirm that the running time of the proposed work is optimal and achieves more accuracy compared to Genetic Algorithm (GA) by 80%, Particle Swarm Optimization (PSO) by 86.37%, and Bacterial Foraging Optimization (BFO) by 91.43% under minimum iteration at an SNR of -15 dB.

Keywords Cognitive radio networks · Spectrum prediction · Cooperative spectrum sensing · Bacterial foraging optimization

1 Introduction

1.1 Overview of cognitive radio network

Terrestrial networks play a vital role in traditional and emerging communication systems because of their evident superiority in high-speed data rate and continuous coverage. The growth in spectrum demand will be challenging to handle since the spectrum is a restricted resource that is difficult to expand owing to technological constraints. But the issue of spectrum scarcity, as stated by Federal Communications Commission (FCC), on the other hand, has hampered its development. Researchers' primary goal has been to enhance spectrum usage and propose a novel standard to optimize the existing wireless spectrum. As a result, Mitola [1] has suggested Cognitive Radio (CR) technology increases spectrum usage and has gained more attention for enhancing spectrum efficiency. CR increases spectrum use through a variety of novel techniques. First, it uses Dynamic Spectrum Access (DSA), which enables secondary users to discover and use unused spectrum bands without interfering with major users. This approach is aided by powerful spectrum sensing algorithms that identify accessible channels in real time. Furthermore, CR systems employ adaptive learning algorithms to optimize spectrum allocation based on historical data and real-time situations. Cooperative sensing, in which numerous CR devices work together to sense the spectrum, improves accuracy and reliability. These developments allow for more efficient and flexible use of the radio frequency spectrum, overcoming the constraints of old static spectrum allocation systems. CR techniques support increasing radio frequency utilization and allowing for expanded commercial, emergency, and military services.

✉ M. Suriya
suriya13.ms@gmail.com

✉ M. G. Sumithra
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¹ Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu 641 202, India

² Sri Krishna College of Technology, Coimbatore, Tamil Nadu 641 042, India

Published online: 19 November 2024

Springer

ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr S Perma, Asst. Professor, published a research article on “Efficient Parallel Median Filter for Image Denoising Implementation and Performance Evaluation” in the International Information and Engineering Technology Association, Vol. 41, Issue 5, 2024.

Traitement du Signal
Vol. 41, No. 5, October, 2024, pp. 2403-2414
Journal homepage: <http://ieta.org/journals/ts>

Efficient Parallel Median Filter for Image Denoising: Implementation and Performance Evaluation

Mahendran Kantharimuthu¹, Prema Selvaraj², Harish Sankar³, Gokulvasan Brindavanam⁴

¹ Department of ECE, Hindusthan Institute of Technology, Coimbatore 641032, India
² Department of ECE, Sri Krishna College of Technology, Coimbatore 641042, India
³ Department of ECE, Rathinam Technical Campus, Coimbatore 641021, India
⁴ Department of ECE, Sri Eshwar College of Engineering, Coimbatore 641202, India

Corresponding Author Email: dr.mahendran.k@hit.edu.in

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<https://doi.org/10.18280/ts.410515> **ABSTRACT**

Received: 27 November 2023
Revised: 20 February 2024
Accepted: 23 April 2024
Available online: 31 October 2024

Keywords: *sorting network, parallel median filter, precision computations, data sorter, modified magnitude comparator, equality check, processing pixels*

The sorting network forms the foundation of the suggested parallel median filters and the cutting-edge filter produced noise-free images. To enhance such filters noise-elimination abilities, a particular comparator is created. Signal leaps can be preserved while noise is reduced with the help of parallel median filtering. The noise elimination determines how much noise is reduced. The filter does a better job of minimizing noise the heavier the distribution tail. Median filtering preserves edge signal, which is a crucial aspect of images, more effectively than average filtering. New median filters have a consistent, modular architecture. Limited precision computations are allowed in applications that process audio and images. The approximate computing can be implemented in the digital system with sufficient precision. This paper proposes a novel technique for the low-cost area, power and speed-efficient manufacturing of 2-bit magnitude comparators. The new technology created larger comparators with tunable error characteristics. Further, parallel median filter is designed with additional 2 ternary data sorter for high speed application which processes the data in parallel. From Simulation results, the proposed filter achieves more power, area and speed. The filters output value is essentially equivalent to the particular one when it comes to filtering precision and circuit features. When compared to serial median filters, parallel median filters dynamic power consumption is 36.37% higher and also total estimated power consumption of parallel median filter is 30.80% more compare to with serial Median Filter. In logic distribution, 5% of number of occupied slices is reduced in the parallel median filter. Parallel design uses 26.76% fewer total equivalent gates than serial design. Simulations



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ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Online Certification

Dr M Thillai Rani, Assoc. Professor, completed a 4-week course on “C Programming and Assembly Language” with Elite Certification offered through NPTEL.



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

This certificate is awarded to
M THILLAI RANI
for successfully completing the course
C Programming and Assembly Language

with a consolidated score of **63 %**

Online Assignments	16.83/25	Proctored Exam	46.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **482**

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Aug-Sep 2024
(4 week course)

Indian Institute of Technology Madras

Roll No: NPTEL24CS128S552403088 To verify the certificate  No. of



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M. Thillai Rani



NPTEL-AICTE
Faculty Development Programme
(Funded by the MoE, Govt. of India)



This certificate is awarded to
M THILLAI RANI
for successfully completing the course
C Programming and Assembly Language

with a consolidated score of **63 %**

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Aug-Sep 2024

Roll No: NPTEL24CS128S552403088 Duration of NPTEL course : 4 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 16th Nov, 2023, similar to other refresher / orientation courses. F.No. AICTE / RIFD / FDP through MOOCs / 2023





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ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Online Certification

Dr C Senthilkumar, Assoc. Professor, completed a 8-week course on **“Developing Soft Skills and Personality”** with **Elite Certification** offered through NPTEL.



Elite NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to
DR SENTHILKUMAR C
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **70 %**

Online Assignments	22.92/25	Proctored Exam	47.25/75
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Total number of candidates certified in this course: 10687

Pathsh

Prof. B. V. Ratish Kumar
Chairman, Centre for Continuing Education
IIT Kanpur

Aug-Oct 2024
(8 week course)



Indian Institute of Technology Kanpur

Roll No: NPTEL24HS176S652406474

To verify the certificate



No. d



NPTEL-AICTE Faculty Development Programme

(Funded by the MoE, Govt. of India)



This certificate is awarded to

DR SENTHILKUMAR C

for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **70 %**

Andrew Thangaraj
Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras



(Aug-Oct 2024)

Roll No: NPTEL24HS176S652406474

Duration of NPTEL course : 8 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 16th Nov 2023, similar to other refresher / orientation courses. F.No. AICTE / RIFD / FDP through MOOCs / 2023





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ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Online Certification

Mr R Naveenkumar, Asst. Professor, completed a 12-week course on “**Introduction to Internet of Things**” with **Elite Certification** offered through NPTEL.



Elite NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to
NAVEENKUMAR R
for successfully completing the course

Introduction to Internet of Things

with a consolidated score of **69** %

Online Assignments	25/25	Proctored Exam	43.5/75
--------------------	-------	----------------	---------

Total number of candidates certified in this course: 3313

Jul-Oct 2024
(12 week course)



Indian Institute of Technology Kharagpur

Roll No: NPTEL24CS115S752400202

To verify the certificate



NPTEL-AICTE Faculty Development Programme

(Funded by the MoE, Govt. of India)



This certificate is awarded to
NAVEENKUMAR R
for successfully completing the course
Introduction to Internet of Things
with a consolidated score of **69** %

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras



(Jul-Oct 2024)

Roll No: NPTEL24CS115S752400202

Duration of NPTEL course : 12 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 16th Nov, 2023, similar to other refresher / orientation courses. F.No. AICTE / RIFD / FDP through MOOCs / 2023





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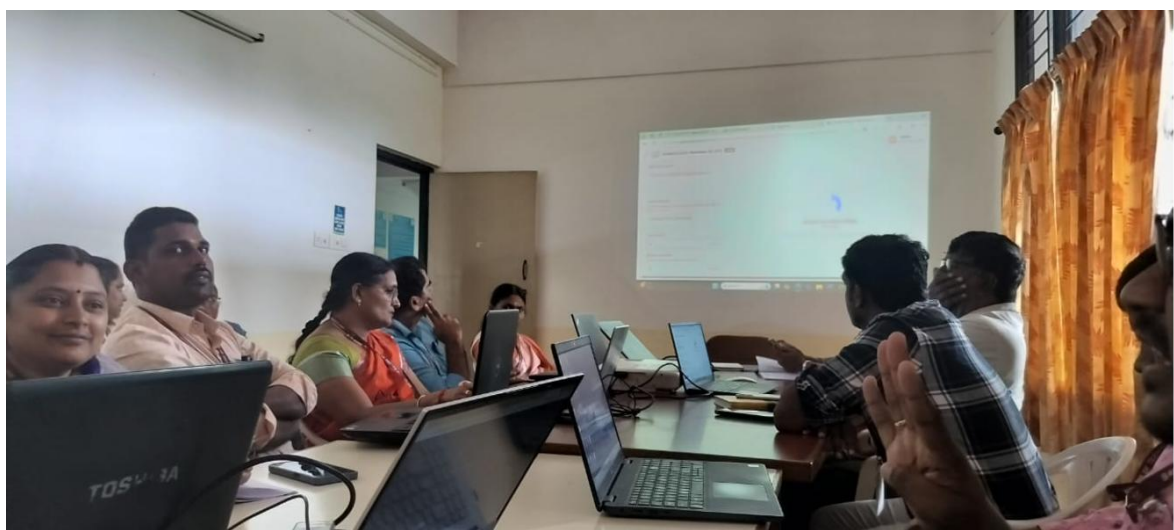
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ELECTRONICS AND COMMUNICATION ENGINEERING

Event Organised

The Department of Electronics and Communication Engineering conducted a Hands-on Training Workshop on **“GEN AI Powered Course Builder and Question Bank Generation”** through Coursera on 21 November 2024.

Dr P Rajasekar, Professor and **Dr M Thillai Rani**, Assoc. Professor, handled the session.



ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr S Nithyadevi, Asst. Professor, published a research article on “**Fault classification in Digital to Analog Converter using machine learning**” in the International Journal of Electronics, 2024.

INTERNATIONAL JOURNAL OF ELECTRONICS
<https://doi.org/10.1080/00207217.2024.2429149>



Taylor & Francis
Taylor & Francis Group

Check for updates

Fault classification in Digital to Analog Converter using machine learning

J. Ramesh*, S. Nithyadevi^b and V. Govindaraj^c

*Department of Electronics and Communication Engineering, PSG College of Technology, Coimbatore, India; ^bDepartment of ECE, Sri Krishna College of Technology, Coimbatore, India; ^cDepartment of Electronics and Communication Engineering, Kalignarkaranidhi Institute of Technology, Coimbatore, India

ABSTRACT

The cost of manufacturing Integrated Circuit (IC) is affected strongly by the test time, cost of test equipment and test procedure development. Mixed Signal Integration in an IC has analog circuits and digital circuits both combined in a single die. Combining both analog circuits and digital circuits leads to sophisticated high functionality design. The cost for testing those analog circuit parts are mostly dominated in total cost of testing a Mixed Signal IC. Considerable efforts are invested by IC manufacturers to minimise production costs in the design and testing of mixed signal IC. Classification and distinguishing catastrophic faults of analog integrated circuits are gaining importance in recent days in order to reduce IC test cost. In this work, Back Propagation Neural Network (BPNN) and Random Forest are used to classify the faults in Digital-to-Analog Converters (DACs). Performance comparison of BPNN and Random Forest is made based on their fault classification efficiency in which BPNN classifies the fault with 98.1% accuracy, Random Forest classifies the fault with 98.8% accuracy.

ARTICLE HISTORY

Received 16 February 2024
Accepted 14 October 2024

KEYWORDS

Fault classification; Digital-to-Analog Converter; BPNN; Random Forest; fault coverage

1. Introduction

Integrated circuits with design for tolerance under fault-free or faulty conditions are affected by parametric changes due to process variations which results in catastrophic faults. Fault classification is crucial in ensuring the reliability, safety, and performance of electronic systems, including mixed-signal circuits. Fault classification in Analog and mixed signal circuits (AMS) are automated by using statistical methods and techniques. The existing fault classification techniques for the AMS circuits lack in accuracy. Process variations in integrated circuits will lead to parametric changes (Grzechc et al., 2006). Catastrophic faults in AMS can vary even though the circuits with tolerance are designed, therefore for a satisfactory operation, threshold should be selected. Statistical method can be used for fault classification since it is very much difficult to select threshold. A classical statistical method such as Linear Discriminant Analysis (LDA) was employed for fault classification (Epstein et al., 1993). Limitations in LDA is less accuracy, which lead to use neural networks for fault classification, which will give better results when compared to other statistical

CONTACT S. Nithyadevi ndsnithya88@gmail.com Department of Electronics and Communication Engineering, Sri Krishna College of Technology, Coimbatore, India
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ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Dr M Thillai Rani, Assoc. Professor, published a research article on “FPGA Implementation of Stochastic Approximate Multipliers for Neural Networks” in IEEE Xplore (Scopus Indexed).

FPGA Implementation of Stochastic Approximate Multipliers for Neural Networks

Publisher: **IEEE** [Cite This](#) [PDF](#)

V. Saravanan ; R. Dayana ; M.Thillai Rani ; M. Sudha ; M. Varun ; A Rosi [All Authors](#)

17

Full

Text Views



Abstract

Document Sections

- I. Introduction
- II. Related Work
- III. Proposed System
- IV. Results and Discussion
- V. Conclusion

[Authors](#)

Abstract:

In the age of edge computing, tiny and efficient neural network (NN) architectures are in high demand. Existing deterministic multipliers in neural networks suffer from high power consumption and space overheads. The research presents a novel Field-Programmable Gate Array (FPGA) implementation of stochastic approximate multipliers (SAMs) to improve NN performance. SAMs are ideal for areas with limited resources, such as edge devices, since their components take up less space and consume less power. The technique utilizes SAMs' stochastic nature to lower power and space needs while preserving NN accuracy. The study includes detailed descriptions of the SAM architecture, hardware integration, training methodologies, FPGA implementation, and performance assessments. The proposed system, with inference rates of 8.6 ms and an accuracy of 97.5%, consumes 15.6 kWh of total energy, compared to the existing system's 22.1 kWh. The efficiency of the SAM-based FPGA NN architecture is demonstrated by decreased logic and memory usage, faster inference times, and improved accuracy retention. The results open up possibilities for the employment of energy-efficient, high-performance NNs in mobile and edge computing applications.





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ELECTRONICS AND COMMUNICATION ENGINEERING

Faculty Publication

Mr M Arun Kumar and Mr R Naveenkumar, Asst. Professors, attended a workshop on “Advanced AI tools for Preparing Research Papers” organised by SASI Institute of Technology and Engineering during 08-09 November 2024.



INSTITUTE OF TECHNOLOGY & ENGINEERING TADEPALLIGUDEM WEST GODAVARI DIST. A.P.



CERTIFICATE OF APPRECIATION

THE FOLLOWING AWARD IS GIVEN TO


ARUN KUMAR M

ELECTRONICS AND COMMUNICATION ENGINEERING
SRI KRISHNA COLLEGE OF TECHNOLOGY

has actively participated in the Two-Day FDP on “Advanced AI Tools for Preparing Research Papers” organized by the Department of Computer Science and Engineering at SASI Institute of Technology and Engineering, in association with Pencil Bitz on November 8th & 9th, 2024.


Mr P Krishnamoorthy
Association Professor - CSE
Co - Coordinator


Dr M Parthiban
Professor | CSE
Coordinator


Dr MVVS Nagendranath
HEAD OF THE DEPARTMENT
Computer Science & Engineering
Sasi Institute of Technology & Eng
Tadepalligudem-514 101



INSTITUTE OF TECHNOLOGY & ENGINEERING TADEPALLIGUDEM WEST GODAVARI DIST. A.P.



CERTIFICATE OF APPRECIATION

THE FOLLOWING AWARD IS GIVEN TO

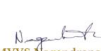
ARUN KUMAR M

ELECTRONICS AND COMMUNICATION ENGINEERING
SRI KRISHNA COLLEGE OF TECHNOLOGY

has actively participated in the Two-Day FDP on “Advanced AI Tools for Preparing Research Papers” organized by the Department of Computer Science and Engineering at SASI Institute of Technology and Engineering, in association with Pencil Bitz on November 8th & 9th, 2024.


Mr P Krishnamoorthy
Association Professor - CSE
Co - Coordinator


Dr M Parthiban
Professor | CSE
Coordinator


Dr MVVS Nagendranath
HEAD OF THE DEPARTMENT
Computer Science & Engineering
Sasi Institute of Technology & Engg
Tadepalligudem-514 101


Sangeetha Saramaniam
Founder & CEO



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ELECTRONICS AND COMMUNICATION ENGINEERING

Event Organised

The Department of Electronics and Communication Engineering in association with **KNOCKIA** organised a seminar on **“Impact of Technology on Health & Finding Balance in a Digital World”** for the Students of First B.E. ECE on 22 November 2024.



ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Review Meeting

The Department of Electronics and Communication Engineering conducted the “**Academic Review Meeting**” for the Students of First B.E. ECE along with their parents on 23 November 2024.





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ELECTRICAL AND ELECTRONICS ENGINEERING

Faculty Publication

Dr Dhanaselvam J, Asst. Professor, published a research article as a book chapter on **“Cost and Renewable Energy Management by IoT-Oriented Smart Home Based on Smart Grid Demand Response”** in the book on **Sustainable Smart Homes and Buildings with Internet of Things** published by Wiley & Sons on 22 November 2024.

WILEY Online Library

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Chapter 6

Cost and Renewable Energy Management by IoT-Oriented Smart Home Based on Smart Grid Demand Response

B. Omprakash, Jatinkumar Patel, J. Dhanaselvam, Shruti Bhargava Choubey

Book Editor(s): Pramod Singh Rathore, Abhishek Kumar, Surbhi Bhatia, Arwa Mashat, Thippa Reddy Gadekallu

First published: 17 November 2024 | <https://doi.org/10.1002/9781394231522.ch6>



Sustainable Smart Homes and Buildings with Internet of Things



References



Related



Information



PDF



TOOLS



SHARE

Summary

The Internet has become an integral aspect of human lives, enabling the remote monitoring and management of various equipment such as televisions, air conditioners, refrigerators, and washing machines. This enhanced functionality is made possible by implementing Internet of things (IoT) technology, which imbues these items with more intelligence. Smart Home apps, as a constituent of intelligent cities, undoubtedly represent one of the most sought-after applications. The user's text needs to be longer to be rewritten academically. This research presents the design of a smart energy management (SEM) system that utilizes NodeMCU and Android platforms. The SEM

Danielly B. Avancini, Joel J. P. C. Rodrigues, Ricardo A. L. Rabêlo, Ashok Kumar Das, Sergey Kozlov, Petar Solic

International Journal of Energy Research

[Review of IoT-Based Smart City and Smart Homes Security Standards in Smart Cities and Home Automation](#)

Dnyaneshwar Vitthal Kudande, Chaitanya Singh, Deepika Chauhan

[Autonomous Vehicles Volume 1: Using Machine Intelligence, \[1\]](#)



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ELECTRICAL AND ELECTRONICS ENGINEERING

Student Participation

Ms Anandhi B, Student of First B.E EEE, participated in **“StudAIElev8 Workshop: Hands-on with Generative AI”** organised by StudAI Edutech Pvt. Ltd., Coimbatore on 17 November 2024.





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ELECTRICAL AND ELECTRONICS ENGINEERING

Student Participation

Ms Bhavana G, Student of First B.E EEE, participated in zonal “**Shortput event**” at Sri Krishna College of Technology, Coimbatore on 19 November 2024.





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ELECTRICAL AND ELECTRONICS ENGINEERING

Students' Certification

Mr Adithya Sharan S and Ms Madumitha S, Students of Third B.E EEE, completed an online certification course on **"Electronic Systems Design: Hands-on Circuits and PCB Design with CAD Software"** offered through NPTEL with **Elite + Silver** distinction.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



This certificate is awarded to

ADITHYA SHARAN S

for successfully completing the course

Electronic Systems Design: Hands-On Circuits and PCB Design with CAD Software

with a consolidated score of **75** %

Online Assignments	25/25	Proctored Exam	49.75/75
--------------------	-------	----------------	----------

Total number of candidates certified in this course: **1810**

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)

Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras

Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



Indian Institute of Technology Madras

Roll No: NPTEL24EE127S552405861

To verify the certificate



No. of credits recommended: 3 or 4



This certificate is awarded to

MITHA SHANMUGAVEL

for successfully completing the course

Electronic Systems Design: Hands-On Circuits and PCB Design with CAD Software

with a consolidated score of **75** %

Online Assignments	25/25	Proctored Exam	49.75/75
--------------------	-------	----------------	----------

Total number of candidates certified in this course: **1810**

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)

Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras

Roll No: NPTEL24EE127S552405902

To verify the certificate



No. of credits recommended: 3 or 4





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ELECTRICAL AND ELECTRONICS ENGINEERING

Students' Certification

The Students of Third B.E EEE completed an online certification course on "**Electronic Systems Design: Hands-On Circuits and PCB Design with CAD Software**" offered through NPTEL.



Elite NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to
ADITHYAN S
for successfully completing the course
**Electronic Systems Design: Hands-On Circuits and PCB
Design with CAD Software**

with a consolidated score of **61** %

Online Assignments	25/25	Proctored Exam	36/75
--------------------	-------	----------------	-------

Total number of candidates certified in this course: 1810

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)

Indian Institute of Technology Madras

Roll No: NPTEL24EE127S552402879

To verify the certificate



No. of credits recommended: 3 or 4



Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras

NE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to
SRI LINGESWARAN
for successfully completing the course
**Electronic Systems Design: Hands-On Circuits and PCB
Design with CAD Software**

with a consolidated score of **57** %

Online Assignments	25/25	Proctored Exam	31.5/75
--------------------	-------	----------------	---------

Total number of candidates certified in this course: 1810

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024
(12 week course)

Indian Institute of Technology Madras

Roll No: NPTEL24EE127S552405148

To verify the certificate



No. of credits recommended: 3 or 4



Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras



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ELECTRICAL AND ELECTRONICS ENGINEERING

Student Certification

Ms Pradeepa R, Student of Second B.E. EEE, completed an online certification course on **"Electronic Systems Design: Hands-on Circuits and PCB Design with CAD Software"** offered through NPTEL.



NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



कोशल भारत - कशल भारत

This certificate is awarded to

PRADEEPA R

for successfully completing the course

Electronic Systems Design: Hands-On Circuits and PCB Design with CAD Software



with a consolidated score of **52** %

Online Assignments	21.56/25	Proctored Exam	30/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: **1810**

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2024

(12 week course)

Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL24EE127S652403954

To verify the certificate



No. of credits recommended: 3 or 4





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INFORMATION TECHNOLOGY

Placement

The Students of Final B.Tech. IT (Batch 2021-2025) got placement offer in **Cognizant Technology Solutions Corp (CTS)**.



SYED NOORUL HASAN S



KABILAN V



HEMAHARSHINI K J



JAMUNA A



LAVANYA S B



INFORMATION TECHNOLOGY

Placement

Mr Mohamed Noufal Ansari T, Student of Final B.Tech. IT has been selected for **SDE 1 Internship at Amazon**.



MOHAMED NOUFAL ANSARI T



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INFORMATION TECHNOLOGY

Faculty Online Certification

Ms P Manokari, Asst. Professor, completed a course on **“Introduction to the Internet of Things and Embedded Systems”** offered through Coursera.





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INFORMATION TECHNOLOGY

Faculty Certification

Dr A Christy Jeba Malar, Assoc. Professor and Ms K Mythili, Asst. Professor, completed NPTEL course on “Introduction to Industry 4.0 and Industrial Internet of Things” with Elite distinction during Jul-Oct 2024.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



This certificate is awarded to
A CHRISTY JEBHA MALAR
for successfully completing the course
Introduction to Industry 4.0 and Industrial Internet of Things

with a consolidated score of **75** %

Online Assignments	24.56/25	Proctored Exam	49.98/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: 15725

Jul-Oct 2024
(12 week course)

Haimanti Banerji
Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL24CS95S252401321

To verify the certificate



No. of credits recommended: 3 or 4



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INFORMATION TECHNOLOGY

Student Certification

Mr Naveenraju Selvaraju, Student of Second B.Tech. IT, completed a NPTEL Certification course on “Google Cloud Computing Foundations” with Elite distinction.



Elite

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

This certificate is awarded to
NAVEENRAJU SELVARAJU
for successfully completing the course

Google Cloud Computing Foundations

with a consolidated score of **73** %

Online Assignments	22.38/25	Proctored Exam	50.51/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **6940**


Aug-Oct 2024
(8 week course)



Banerji
Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL24CS131S552400008 To verify the certificate  No. of credits recommended: 2 or 3



INFORMATION TECHNOLOGY

Students' Certification

- **Ms Sainthavi Sri M K**
- **Mr Sasiram V**
- **Mr Sethuragavan K K**
- **Mr Sivakumar**
- **Mr Sree Ram K M**
- **Ms Srimahathi P**
- **Ms Swetha M**
- **Ms Vedhasya S**
- **Ms Visalini V**
- **Mr Vishal Kanna V S**
- **Ms Shajeea Begam**
- **Ms SNEHA R**
- **Ms SOWMYA K**



The Students of Second B.Tech. IT C completed the **NPTEL Certification Course on “Introduction to Industry 4.0 and Industrial Internet of Thing”** during Jul-Oct 2024.

MECHANICAL ENGINEERING

Faculty Publication

Dr Vinu Kumar S M, published an article on "Impact of Nanoclay on Thermal, and Static and Dynamic Mechanical Properties of Bamboo Fiber Reinforced Unsaturated Polyester Composites", in a Journal on Cell Chem Technol, (Annexure I; SCIE, Q3 with an Impact factor of 1.48.

IMPACT OF NANOCLAY ON THERMAL, AND STATIC AND DYNAMIC MECHANICAL PROPERTIES OF BAMBOO FIBER REINFORCED UNSATURATED POLYESTER COMPOSITES

BENJAMIN FRANKLIN SELVANAYAGAM,¹ SHETTIAHALLI MANTAIAH VINU KUMAR,^{2*} CHANDRASEKARAN SASIKUMAR³ and RAVICHANDRAN ARUMUGAM THANGAVEL^{4,5,6}

¹Department of Mechanical Engineering, Sri Ramakrishna Institute of Technology, Coimbatore, Tamil Nadu, India

²Department of Mechanical Engineering, Sri Krishna College of Technology-Kovaijude, Coimbatore, Tamil Nadu, India

³Department of Mechanical Engineering, Bannari Amman Institute of Technology, Sulliyangudi, Tamil Nadu, India

⁴Department of Mechanical Engineering, Vitech Ranganathan Dr. Sagarthala R&D Institute of Science and Technology, Avadi- Chennai, Tamil Nadu, India

* Corresponding author: S. M. Vinu Kumar, vinukmr1988@gmail.com

Received July 5, 2024

In this article, the effects of nanoclay (NCL) filler on thermal and static and dynamic mechanical properties of bamboo fiber reinforced unsaturated polyester (BP) composites were explored. BP composites were prepared with 20 wt% reinforcement of bamboo fiber, and hybrid NCL filled bamboo fiber reinforced unsaturated polyester (NCBP) were prepared by incorporation of NCL in amounts ranging from 1 to 7 wt% (named as 1NCBP, 2NCBP, 3NCBP and 7NCBP, with reference sample – 0NCBP (BP)), using the hand layup process, followed by curing in a compression moulding machine at constant pressure (20 bar). The fabricated BP and NCBP hybrid composites were tested for static mechanical properties as per ASTM standards. By using a dynamic analyser, viscoelastic properties of the composites, such as storage modulus (E'), loss modulus (E'') and damping factor ($\tan\delta$), were investigated. Results revealed that both static and dynamic mechanical properties of the BP composites increased with an increase in NCL loading. Amongst the nanocomposites, 3NCBP was found superior, however, beyond the optimal amount of 5 wt% NCL, the properties of the materials suffered because of nanoclay agglomeration and poor interfacial bonding between fiber, matrix and filler. The glass transition temperature (T_g) of the BP composite increased from 109.88 °C to 117.73 °C after adding NCL. Thermogravimetric analysis (TGA) results showed that the presence of NCL delayed thermal degradation of the NCBP nanocomposites and thus improved thermal stability. Mechanically fractured samples of NCBP composites were exposed further by field emission scanning microscopy (FESEM) analysis to understand the failure mechanism they endured.

Keywords: bamboo fiber, unsaturated polyester, nanoclay, static and dynamic mechanical, FESEM

INTRODUCTION

In recent decades, due to the advancement of technologies, researchers have revealed promising outcomes of utilizing natural fibers as a reinforcement agent in polymer composites.^{1,2} The automotive, packaging, and construction sectors have already implemented the manufacturing of some components from natural fiber polymer composites (NFPCs).³ It is expected that the worldwide market of NFPCs will rise by compounded growth of 10.6% in the period 2019-2025.⁴ The main intention is not only to valorize natural fibers, but also to curb the adverse impact of using synthetic composites on the environment.⁵ Moreover, natural fibers, such as bamboo, flax, kenaf, hemp, and jute, are low density, ecofriendly, biodegradable and relatively high strength.^{6,8} Thus, natural fibers can be a better choice in preparing polymer composites than their archrivals – synthetic fibers (glass, carbon, and Kevlar fibers).¹¹

Hybrid polymer composites (HPCs) are prepared by reinforcing a matrix with two or more types of fibers/fillers.⁷ An interesting feature of HPCs is that the reinforcement agents used can compensate for each other's limitations.¹⁰ Thus, most research findings showed that HPCs exhibited better mechanical, thermal, and moisture absorption properties than mono-fiber reinforced polymer



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MECHANICAL ENGINEERING

Faculty Achievements

Mr K Senthil Kumar and Mr K Mohan, Asst. Professors, completed a course on “Responsible & Safe AI Systems” offered through NPTEL.



Elite NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to

SENTHIL KUMAR K

for successfully completing the course

Responsible & Safe AI Systems

with a consolidated score of **60** %

Online Assignments	20.25/25	Proctored Exam	39.25/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: 3358

Kishore
Prof. Kishore Kothapalli
Professor and Dean (Academics)
IIT Hyderabad

Jul-Oct 2024
(12 week course)

Andrew
Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



International Institute of Information Technology, Hyderabad

Roll No. NPTEL24CS132S752402919

To verify the certificate



No. of credits recommended: 3 or 4



NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

This certificate is awarded to

MOHAN K

for successfully completing the course

Responsible & Safe AI Systems

with a consolidated score of **56** %

Online Assignments	15.85/25	Proctored Exam	40.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: 3358

Kishore
Prof. Kishore Kothapalli
Professor and Dean (Academics)
IIT Hyderabad

Jul-Oct 2024
(12 week course)

Andrew
Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras



International Institute of Information Technology, Hyderabad

Roll No. NPTEL24CS132S758900109

To verify the certificate



No. of credits recommended: 3 or 4

MECHANICAL ENGINEERING

Faculty Achievements

Mr K Mohan, Asst. professor, received the Certificate of Appreciation for Diwali Traffic Regulation from Coimbatore City Police along with Uyir Club.





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MECHANICAL ENGINEERING

Event Organised

The Dept. of Mechanical Engineering in association with IIC & ISHRAE Coimbatore Technical Talk organised a event on **“Waste to Energy Conversion and Relevance to HVAC Engineers”** facilitated by **Dr Madhu Ganesh**, Student Chair, ISHRAE Coimbatore Chapter, Director of Industry-Academia Collaborations, Karunya Institute of Science and Technology, Coimbatore.



MECHANICAL ENGINEERING

Event Organised

Uyir Club of Sri Krishna College of Technology in association with Coimbatore City Police conducted the “**Road Safety Awareness Camp**” at **Kovaipudur Signal Junction**. The awareness was created among the violators by **Mr K Mohan** (Uyir Club Coordinator / SKCT).





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MECHANICAL ENGINEERING

Student Achievement

Mr S Santhosh, Student of Final B.E. Mechanical Engineering, completed a course on “**Product Design and Development**” with **Elite** distinction offered through NPTEL.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



This certificate is awarded to

SANTHOSH S

for successfully completing the course



Product Design and Development

with a consolidated score of **73** %

Online Assignments	23.33/25	Proctored Exam	49.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **1291**

Prof. Kaushik Ghosh,
Professor (Chemistry)
Coordinator CEC

Jul-Aug 2024
(4 week course)

Prof. Ranjana Pathania,
Professor (BSBE)
Coordinator (NPTEL)



Indian Institute of Technology Roorkee



Roll No: NPTEL24ME81S433404199

To verify the certificate



No. of credits recommended: 1 or 2

MECHANICAL ENGINEERING

Event Organised

The Dept. of Mechanical Engineering conducted **ARM (Academic Review Meeting)** for the Students of First B.E. Mechanical Engineering.



MECHANICAL ENGINEERING

Faculty Participation

Dr Jeen Robert R B, **Dr J Jency Joseph,**
Dr S Dilip Kumar and **Dr V Sathish Kumar,** the Members of Faculty, participated in the **National Higher Education Conclave 2024 – 8th Edition** organised at CODISSIA, Coimbatore.



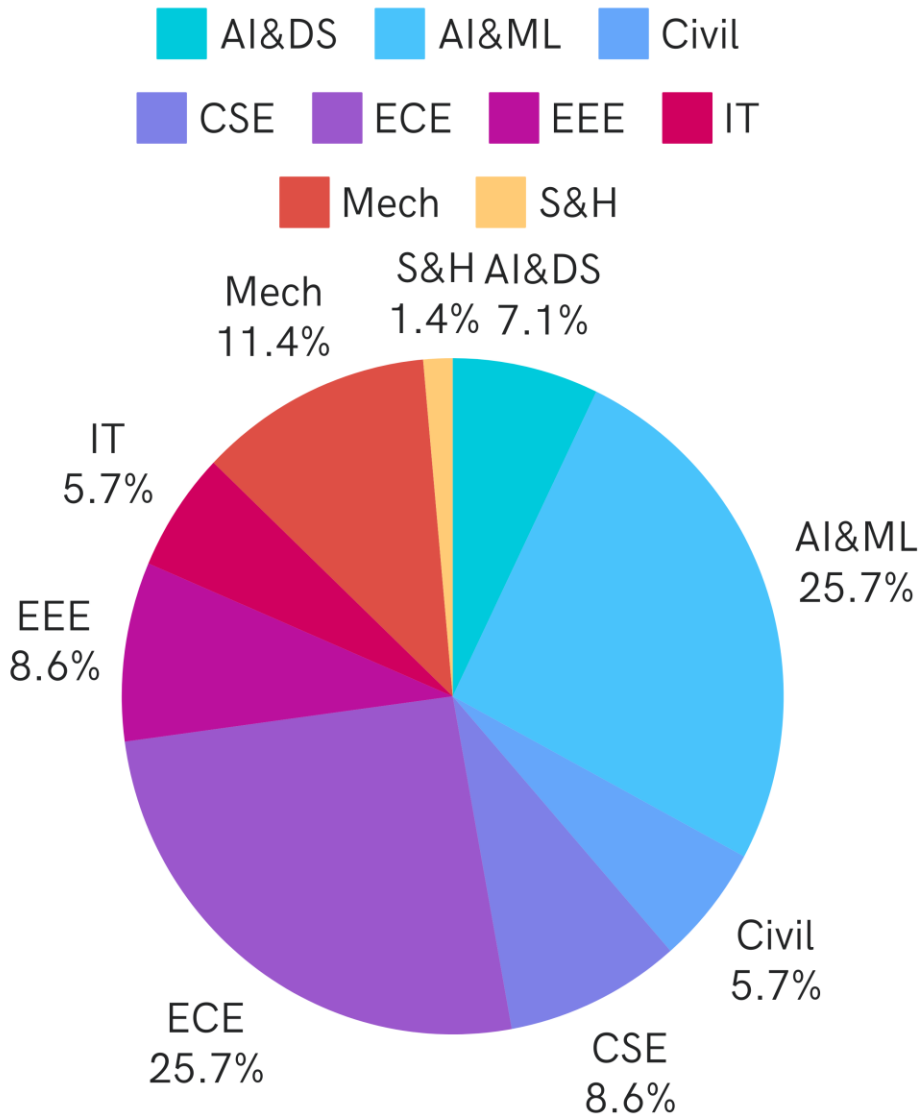
SCIENCE AND HUMANITIES

Faculty Participation

Dr K R Kanimozhi Assoc. Professor, participated in National level Virtual Workshop on **“AI Tools for Effective Teaching and Learning”** on 16 November 2024.



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