

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING



Events for the month of **February ACY 2025**



February 2025

1. International Rover Challenge (IRC) 2025 -Team Trixanth

The International Rover Challenge (IRC) is one of the most prestigious competitions in the field of space robotics, drawing teams from educational institutions worldwide to showcase their expertise and innovative solutions in rover technology organized by Space Robotics Society from January 28 to February 2, 2025. Birla Institute of Technology and Science (BITS), Pilani hosted the IRC Finals 2025, where top teams competed in challenging space exploration simulations.

Out of 100 initial registrations from various esteemed institutions, only the top 25 teams were selected to participate in the finals. We are proud to report that our student team, Trixanth, earned a place among these top 25 finalists, marking a significant achievement for the institution. Our student team, Trixanth, represented Dayananda Sagar University at the IRC 2025 Finals and demonstrated exceptional skill, innovation, and teamwork throughout the event. The team tackled complex challenges involving navigation, autonomous operations, and communication tasks in simulated Martian terrain. Their participation highlighted their technical proficiency and commitment to excellence in space robotics. Although the official rankings are still awaited, the team exhibited a remarkable performance and embodied the spirit of innovation and teamwork. They successfully executed various technical challenges despite fierce competition from teams across the globe. The event provided invaluable exposure and served as a platform for them to demonstrate their project development and execution capabilities. This experience enhanced their understanding of rover mechanics and autonomous navigation systems, strengthened teamwork and technical communication under competitive pressure, and offered exposure to international best practices and the latest advancements in space robotics.

Faculty Coordinator:

Prof. Pradeep Kumar K, Assistant Professor, Dept. of CSE(AI&ML)

Faculty Mentors:

1. Dr. Joshuva Arockia Dhandraj, Associate Professor, Dept. of CSE(AI&ML)
2. Prof Nivetha R, Assistant Professor, Dept. of CSE(AI&ML)

Student Team:

Sl. No	Student Name	USN	Department
1	Utpal Kumar	ENG22AM0139	CSE (AI & ML)
2	Deekshitha M	ENG22AM0010	CSE (AI & ML)
3	R Sujay	ENG22AM0122	CSE (AI & ML)
4	Akshat Agarwal	ENG22AM0072	CSE (AI & ML)
5	Pushkar Pallav	ENG22AM0187	CSE (AI & ML)
6	K Vamsi Krishna	ENG22AM0102	CSE (AI & ML)
7	Renuka Anil Sutar	ENG22EC0092	ECE
8	Rohan Susarla	ENG22EC0093	ECE
9	Rohan Jaiswal	ENG22CS0578	CSE
10	Mithun P	ENG22AS0034	AS
11	Tarita Shetty	ENG23AS1003	AS
12	Yogesh V	ENG23AS1002	AS





Image: 1. IRC 2025

2. An Expert talk on “Implementing Sustainable Development Goals”

On February 18, 2025, the Department of CSE (AI & ML) at Dayananda Sagar University organized an insightful event titled *“Implementing Sustainable Development Goals”*. The session aimed to address global challenges like poverty, inequality, health, education, environmental sustainability, and economic growth.

Ms. S.V.K.R. Rajeswari led the session, engaging both in-person and online audiences. She provided an in-depth understanding of SDGs, their significance, and the necessary actions to achieve them. The session emphasized the role of academicians in contributing to SDGs and showcased senior students' projects aligning with sustainable goals in various fields like healthcare, automobile technologies, space applications, and sports analytics. Faculty and students were also guided on incorporating SDG-related keywords in research papers.

Key challenges such as funding, lack of awareness, and resistance to change were discussed, along with DSU's solutions, including research grants, awareness campaigns, and policy incentives. The session concluded with a call for interdisciplinary collaboration, continuous research, and innovation to drive sustainable development by 2030. Participants were encouraged to align their academic and professional efforts with SDGs for a sustainable future.



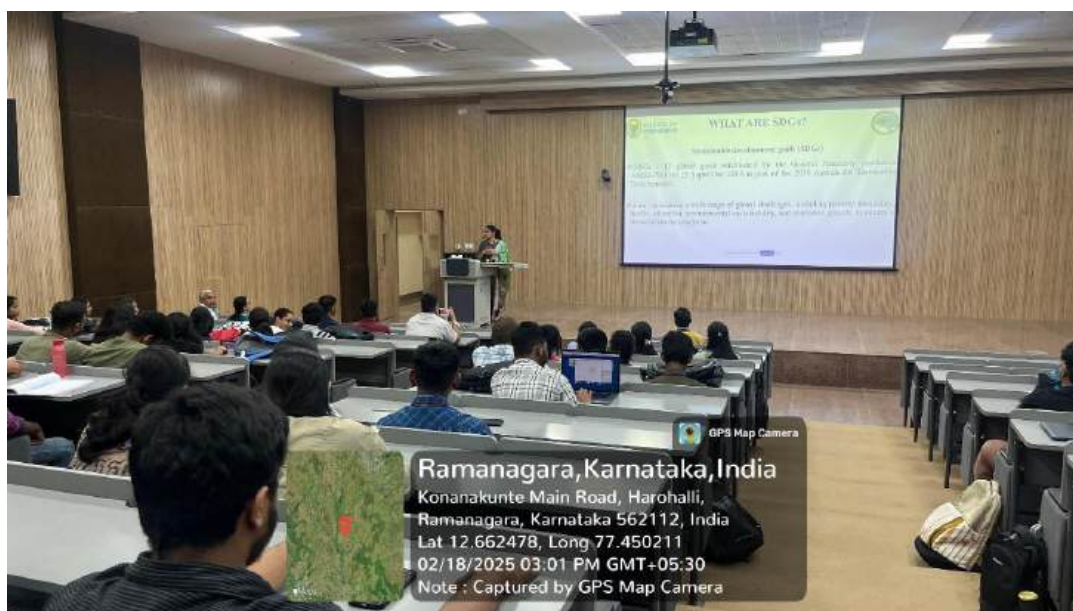


Image: 2. Expert talk on SDG Goals

3. National Service Scheme “Anti-Ragging Awareness Activity”

On February 20, 2025, The *Anti-Ragging Awareness Activity* was conducted by the CSE (AI & ML) Department at Dayananda Sagar University. The event, chaired by Dr. Jayavrinda Vrindavanam V and coordinated by Dr. Shreyas Rajendra Hole, aimed to educate students on the harmful effects of ragging and promote a safe, inclusive campus culture.

The program began with a welcome address by Dr. Shreyas Rajendra Hole, who introduced NSS and the significance of anti-ragging awareness. The first activity was an open-place skit titled "*The Right Action*," performed by students, portraying real-life scenarios where seniors and faculty intervened to foster a respectful and ethical environment. The skit effectively highlighted the importance of mutual respect and the role of authority in preventing ragging.

Following this, an *Anti-Ragging Awareness Presentation* was conducted in classrooms, featuring PowerPoint slides and posters explaining anti-ragging laws, university policies, and consequences for violators. The interactive session encouraged student participation, discussions, and real-life scenario analysis.

The event concluded with an *Anti-Ragging Pledge*, reinforcing students' commitment to a ragging-free campus. The initiative successfully raised awareness, promoted ethical behavior, and strengthened student-faculty collaboration to ensure a safe and inclusive academic environment.

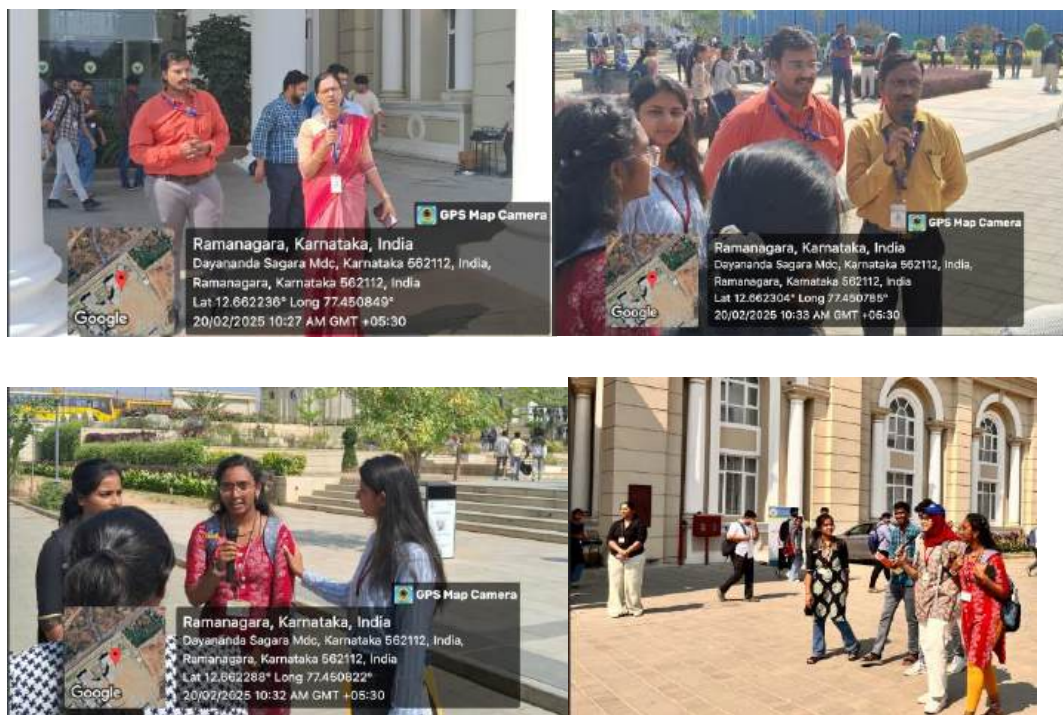






Image: 3. NSS activity

4. Faculty Activities and Achievements

- 4.1 **Dr.Vegi Fernando A**, Associate Professor, Dept. of CSE (AI&ML), Presented the paper titled “Artificial Intelligence: Unlocking the Future of Technology” in the International Conference on Next Generation Communication & Information Processing (INCIP-2025) held on 23rd-24th January 2025 at Manipal Institute of Technology Bengaluru, in association with Manipal Institute of Technology, Manipal, and Manipal University Jaipur.



Image: 4. Conference certificate_Dr. Vegi

- 4.2 **Dr. Joshuva Arockia Dhanraj**, Associate Professor, Dept. of CSE (AI&ML), Participated in the AICTE Recognized Faculty Development Programme on Effective Curriculum Implementation using FOSS Conducted by Curriculum Development Centre Department from 20/01/2025 to 24/01/2025 (One Week) at NITTTR, Chandigarh.

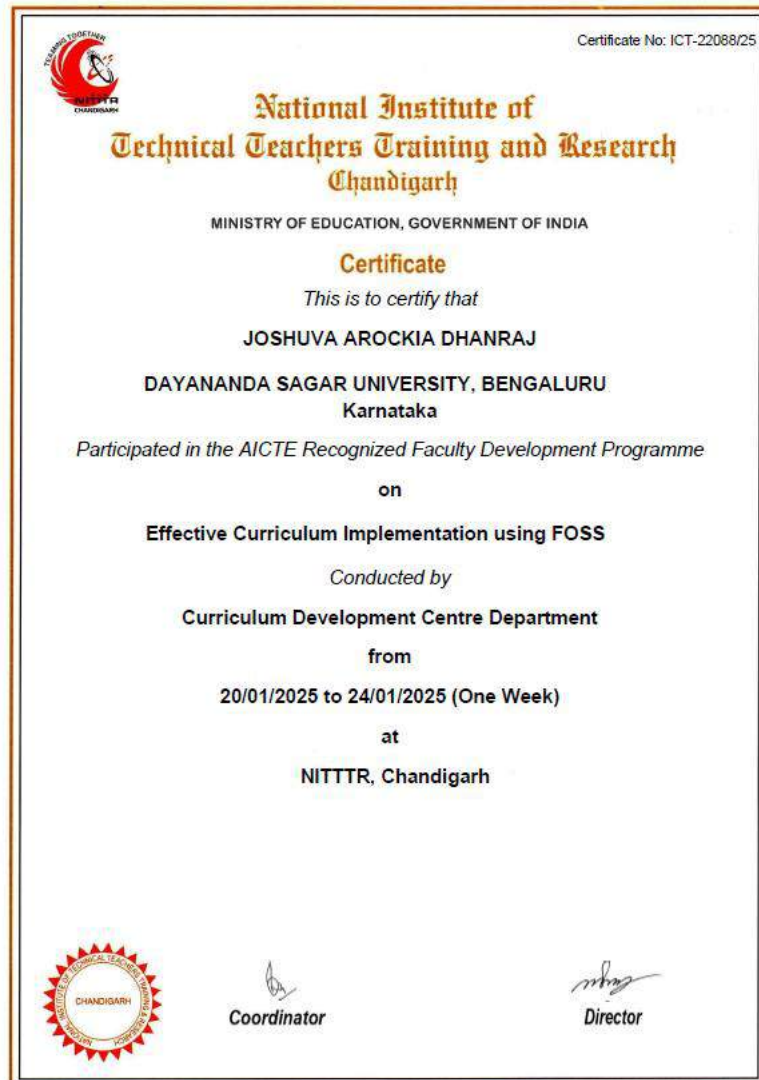


Image: 5. NITTTR certificate_Dr. Joshuva

- 4.3 **Dr. Joshuva Arockia Dhanraj**, Associate Professor, Dept. of CSE (AI&ML), has recently published a book titled “Fundamentals of Robotics and Artificial Intelligence.” The details of the publication are as follows:

Title: Fundamentals of Robotics and Artificial Intelligence

ISBN: 978-93-6674-190-1

Publisher: Scientific International Publishers

Link: <https://tinyurl.com/yd3ebhbb>



Image: 6. Book Publication_Dr. Joshuva

- 4.4 **Prof. Subhash Mondal**, Assistant Professor, Dept. of CSE (AI&ML), has published Q1 journal in Nature Publishing's, Scientific Reports. The journal is indexed in the Web of Science (WoS) and has a high Impact Factor, making it the world's 5th most cited Journal. This is another milestone in our university's expanding research excellence.

Title: "An efficient artificial neural network-based optimization techniques for the early prediction of coronary heart disease: comprehensive analysis"

Journal: Scientific Reports, Publisher: Nature Publishing

Indexing: SCIE, SCOPUS, Impact Factor: 3.8

Quartile: Q1, Publication Date: 09.02.2025

Journal Link to access: <https://www.nature.com/articles/s41598-025-85765-x>

DOI: <https://doi.org/10.1038/s41598-025-85765-x>

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Article | [Open access](#) | Published: 09 February 2025

An efficient artificial neural network-based optimization techniques for the early prediction of coronary heart disease: comprehensive analysis

[Subhash Mondal](#), [Ranjan Maity](#) & [Amitava Nag](#) 

[Scientific Reports](#) **15**, Article number: 4827 (2025) | [Cite this article](#)

6422 Accesses | **1** Citations | **2** Altmetric | [Metrics](#)

Abstract

Coronary heart disease (CHD) is the world's leading cause of death, contributing to a high mortality rate. This emphasizes the requirement for an advanced decision support system in order to evaluate the risk of CHD. This study presents an Artificial Neural Network (ANN) based intelligent healthcare system to predict the risk of CHD. The proposed ANN model is trained using the Framingham Heart Study (FHS) dataset, which comprises 4240 data instances and 15 potential risk factors. To combat overfitting, the proposed model uses four hidden dense layers with dropout rates ranging from 0.5 to 0.2. Also, two activation functions, ReLU

Image: 7. Journal_prof. SubhashMondal

- 4.5 **Dr. Mude Nagarjuna Naik**, Assistant Professor, Dept. of CSE (AI&ML), has Participated in the AICTE Recognized Faculty Development Programme on Applications of IOT- Project Based Conducted by Information Management and Emerging Engineering Department from 10/02/2025 to 14/02/2025 (One Week) at NITTTR, Chandigarh.

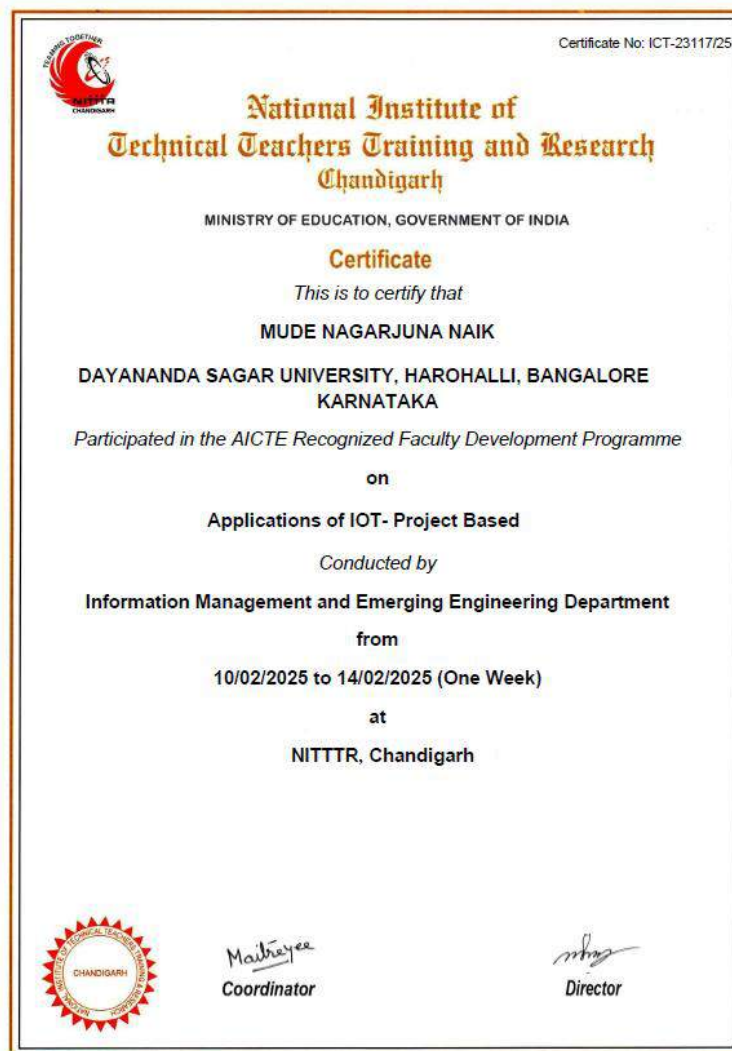


Image: 8. NITTTR IOT FDP certificate_ Dr. Nagarjuna

- 4.6 **Dr. Vinutha N**, Associate Professor, Dept. of CSE (AI&ML), has successfully Participated in the One Week National Level Faculty Development Program on AI Tools organized by DAYANANDA SAGAR ACADEMY OF TECHNOLOGY and MANAGEMENT in association with Brainovision Solutions India Pvt Ltd in collaboration with All India Council for Technical Education (AICTE) During the period of 17th to 21st February 2025. We commend your dedication to enhancing your knowledge with AI TOOLS.



Image: 9. AI tools FDPcertificate_Dr. Vinutha

- 4.7 **Dr. Lakshmanan M**, Assistant Professor, Dept. of CSE (AI&ML), has Participated in the AICTE Recognized Faculty Development Programme on Applications of IOT- Project Based Conducted by Information Management and Emerging Engineering Department from 10/02/2025 to 14/02/2025 (One Week) at NITTTR, Chandigarh.

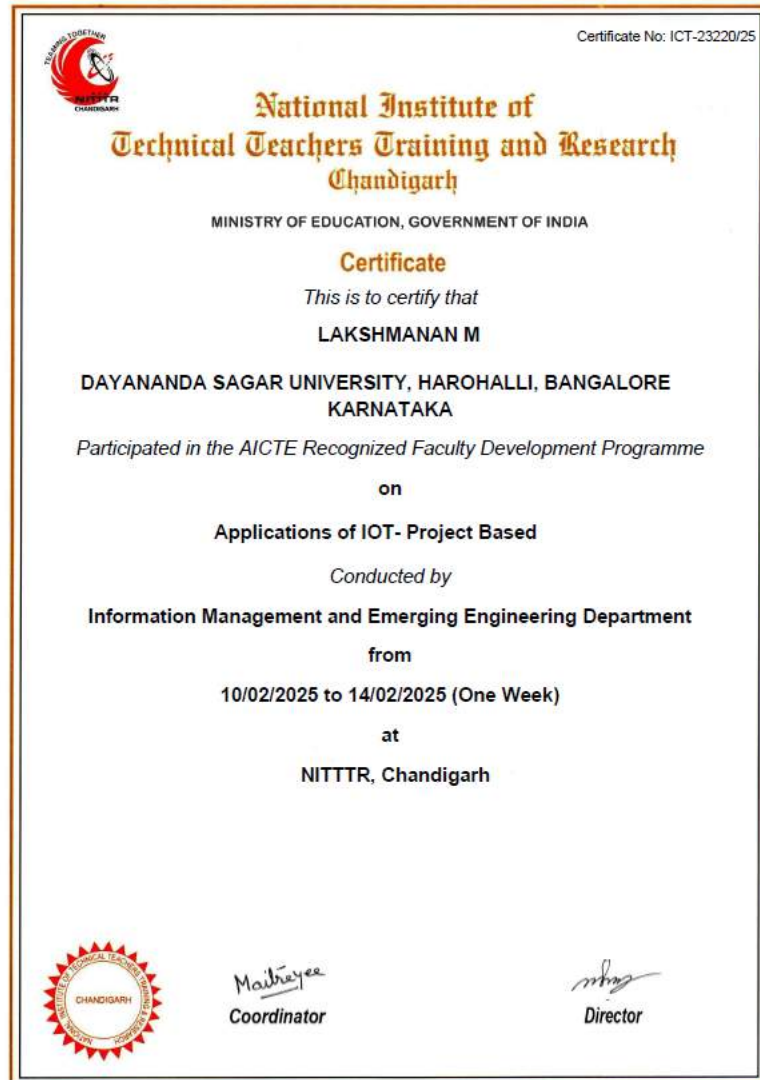


Image: 10. NITTTR IOT FDPcertificate_Dr. Lakshmanan

- 4.8 **Dr. Shreyas Rajendra Hole**, Assistant Professor, Dept. of CSE (AI&ML), has Participated in the AICTE Recognized Faculty Development Programme on Applications of IOT- Project Based Conducted by Information Management and Emerging Engineering Department from 10/02/2025 to 14/02/2025 (One Week) at NITTTR, Chandigarh.

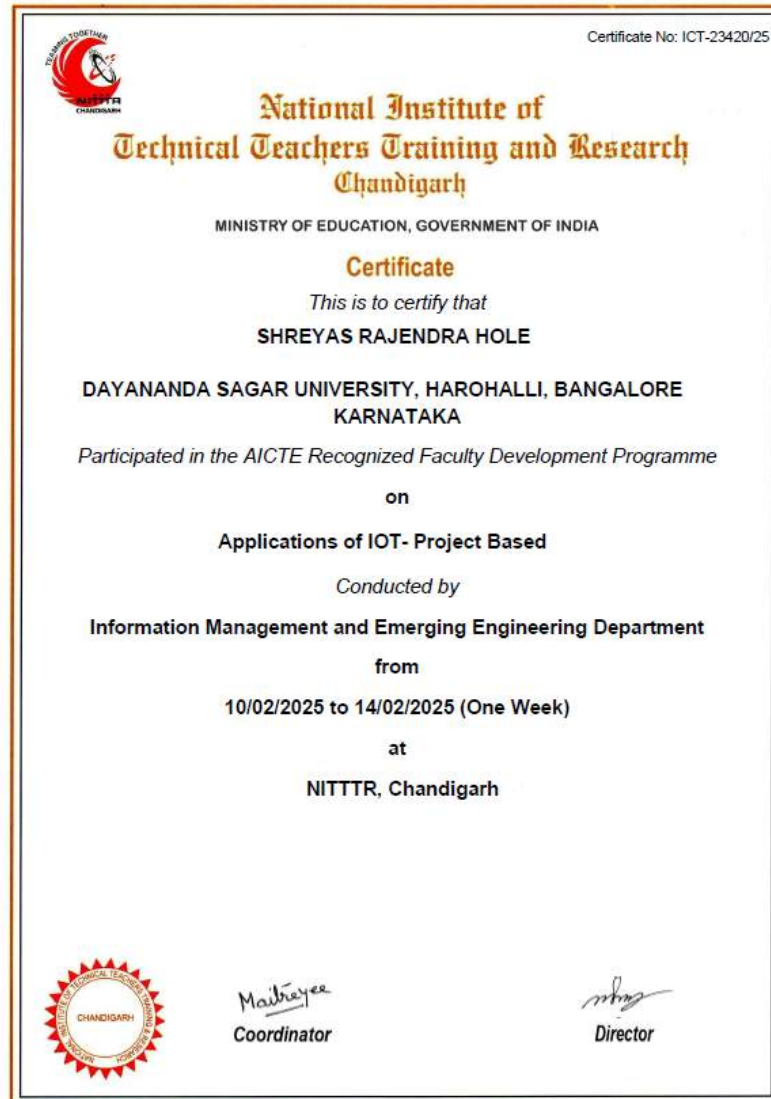


Image: 11. NITTTR IOT FDP Certificate_Dr. Shreyas

- 4.9 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has successfully received the certificate of participation for attending the BCI & Neurotechnology Masterclass EEG & fNIRS on February 25, 2025.



Image: 12. BCI Certificate_bahubali, Dr. Bahubali

- 4.10 **Dr. Abdul Haq Nalband**, Associate Professor, CSE (AI & ML), Dayananda Sagar University, Bengaluru, Karnataka Participated in one week online "Faculty Development Program" on the topic "Securing the Wireless Horizon: Emerging Challenges and Solutions in Wireless Communication" (SEWC-2025) (From 3rd February to 8th February 2025).



Image: 13. FDPcertificate_Dr. Abdul Haq Nalband

- 4.11 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has published a paper in the information fusion journal title “A lightweight robust RGB-T object tracker based on Jitter Factor and associated Kalman filter”, Q1, Impact factor=14.8, 2025. <https://doi.org/10.1016/j.inffus.2024.102842>



Information Fusion

Volume 117, May 2025, 102842



A lightweight robust RGB-T object tracker based on Jitter Factor and associated Kalman filter

Shuixin Pan ^{a b 1}, Haopeng Wang ^{a b 1}, Dilong Li ^{a b}, Yueqiang Zhang ^{a b c} ,
Bahubali Shiragapur ^d, Xiaolin Liu ^{a b}, Qifeng Yu ^{a b}

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<https://doi.org/10.1016/j.inffus.2024.102842>

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Abstract

Visual object tracking has made significant contributions in many practical applications, but it remains a great challenge when the camera moves/shakes or the target is occluded. Various solutions leveraging deep-learning (DL) techniques have been introduced to address these challenging factors. However, these DL-based methods can hardly be implemented on an edge computing platform due to its limited computational resources. In this study, we propose a lightweight and robust cross-modal fusion RGB-T object

Image: 14. Journal paper_Dr. Bahubali

- 4.12 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has published a Journal in Computational Analysis and Applications (JoCAAA) journal titled “Recurrent Neural Network Based Aquila Optimizer on Traffic Images”, Q3, Impact factor=0.236, 2025. <https://eudoxuspress.com/index.php/pub/article/view/1923>

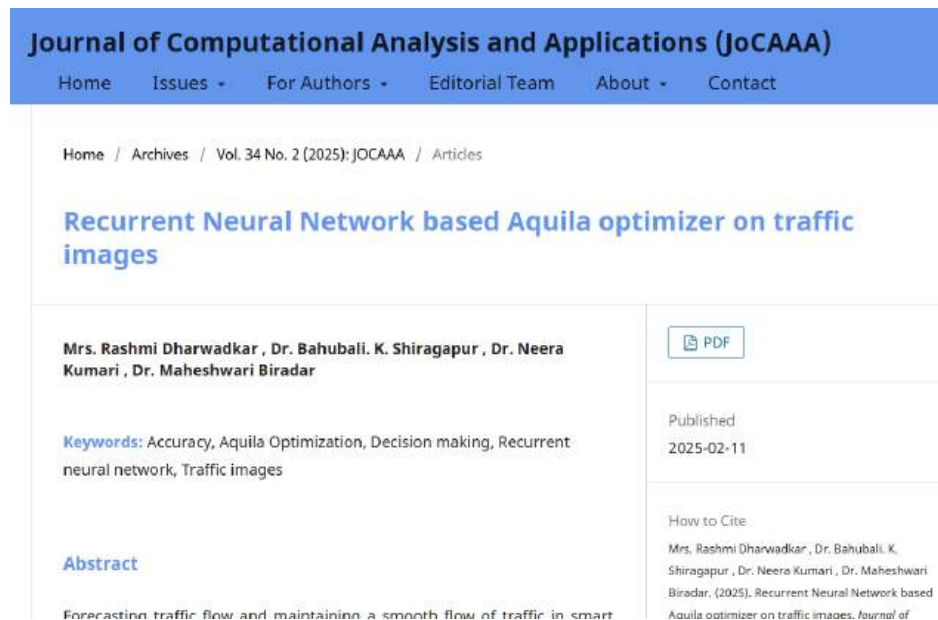


Image: 15. Journal paper_Dr. Bahubali

- 4.13 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has published a Journal in Information Systems Engineering and Management journal titled “Enhanced Spectrum Sensing with Self-Organizing Maps and Deep Belief Networks: A Time-Efficient Approach”, Q3, Impact factor=1.26, 2025. <https://www.iisem-journal.com/index.php/journal/article/view/1952>

Enhanced Spectrum Sensing with Self-Organizing Maps and Deep Belief Networks: A Time-Efficient Approach



Image: 16. Journal paper_Dr. Bahubali

- 4.14 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has published a Journal in Springer Nature, Scientific reports (Reprint) titled “EEG signal analysis for ‘OM’ Mantra Meditation” Q1, Impact factor=2.3, 2025. <https://doi.org/10.21203/rs.3.rs-5892564/v1>
- 4.15 **Dr. Bahubali Shiragapur**, Professor, Dept. of CSE (AI&ML), has published a Journal in Applied AI Letters title “A Systematic Review on the Role of Sentiment Analysis in Healthcare” Q2, Impact factor=1.6, [10.22541/au.172516418.81416769/v1](https://doi.org/10.22541/au.172516418.81416769/v1)
- 4.16 **Dr. Shreyas Rajendra Hole**, Assistant Professor, Dept. of CSE (AI&ML) has published a journal in Science and Technology for Energy Transition titled “Empirical analysis of control models for different converter topologies from a statistical perspective” Q2, Impact factor=1.8, 2025. <https://doi.org/10.2516/stet/2024110>

Empirical analysis of control models for different converter topologies from a statistical perspective

 **Shreyas Rajendra Hole***

Dayananda Sagar University, DSU Main Campus Devarakaggalahalli, Harohalli, Kanakapura Road, Ramanagara Dt., Bengaluru 562 112, India

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Received: 2 July 2024 | **Accepted:** 19 December 2024

Abstract

Converter topologies including SEPIC, ZETA, etc. are controlled *via* selection of capacitive and inductive components, which assists in improving its conversion efficiency for different type of loads. A wide variety of such models are proposed by researchers, that include, but are not limited to, bioinspired techniques for rating selection, Neural Network based models for load-based component selection, etc. Each of these models vary in terms of their internal operating characteristics, and showcase highly variant quantitative and

Image: 19.Journal paper_Dr. Shreyas

5. Students Activities and Achievements

- 5.1 Harshith G R, 5th semester CSE (AI&ML) and his team participated and represented Dayananda Sagar University in a National level offline hackathon "Hack-A-League" conducted in Global Academy of Technology Bangalore.

The team has secured 2nd place and a cash prize of rupees 15000. They also achieved the highest reward for a team from Karnataka.

Team Papz from 5th sem:

Harshith GR (AI&ML) - ENG22AM0021

Sameer S Katte (CSE-C) - ENG22CS0148

Sai Shravan V (CSE-C) - ENG22CS0144

Sriram Ravindra (CSE-C) - ENG22CS0185



Image: 20. Hack-A-League hackathon 2nd place winners

5.2 **International Student Exchange**

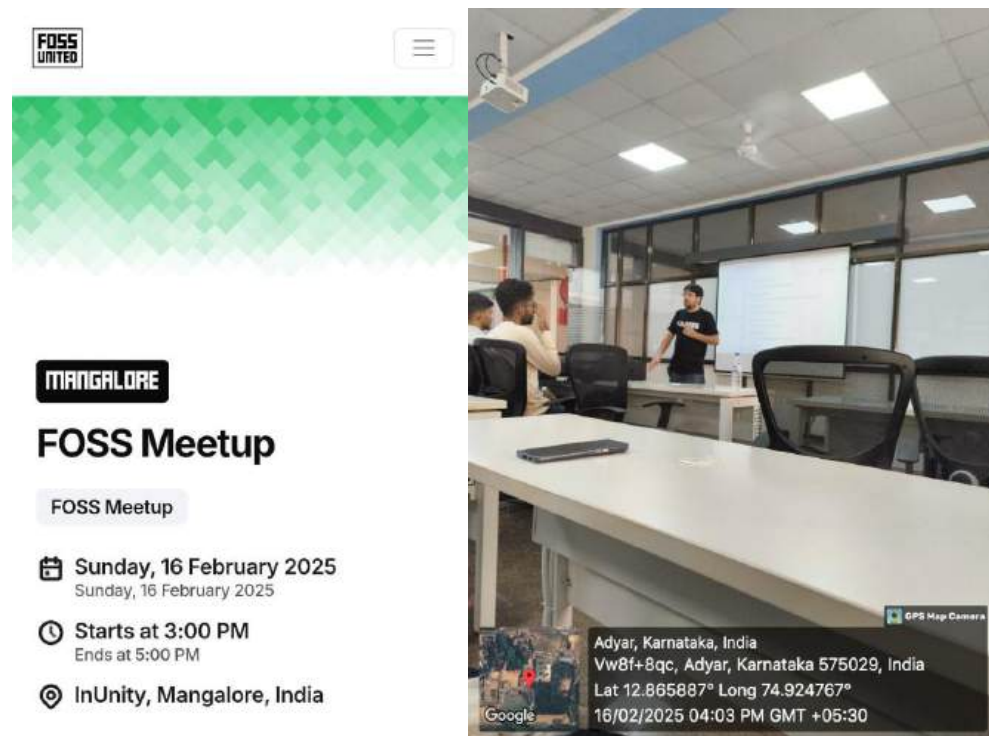
ULUKHANOV ANDREY (USN: INTENGAM001) and VORONIN DMITRIL (USN: INTENGAM002), two students from Moscow, Russia, have joined the CSE (AI & ML) department at Dayananda Sagar University as part of the international student exchange program in their 6th semester.



Image: 21. International student exchange

5.3 FOSS Meetup, InUnity, Mangalore, India

Students of 4th semester(K R Varshini – ENG23AM0031, Keerthana T J – ENG23AM0034, N Rohith – ENG23AM0046, Nandeesh N B – ENG23AM0047, Niharika N – ENG23AM0048, Nishvika Teja Reddy – ENG23AM0050), Dept. of CSE(AI&ML)attended the FOSS Meetup in Mangalore on February 16, 2025, brought together developers, students, and open-source enthusiasts to discuss FOSS and Google Summer of Code (GSoC) 2025. Led by Mohit P. Tahiliani and his core team, the event focused on GSoC's structure, eligibility, and participation process. Key topics included open-source entities, project categories, and essential application guidelines. Attendees learned about selecting projects, engaging with mentors, and submitting strong applications. The session concluded with an interactive Q&A, addressing common concerns about mentorship, application mistakes, and time commitment. The meetup successfully promoted open-source contributions, networking, and mentorship, leaving participants motivated to explore GSoC and contribute to the FOSS community.



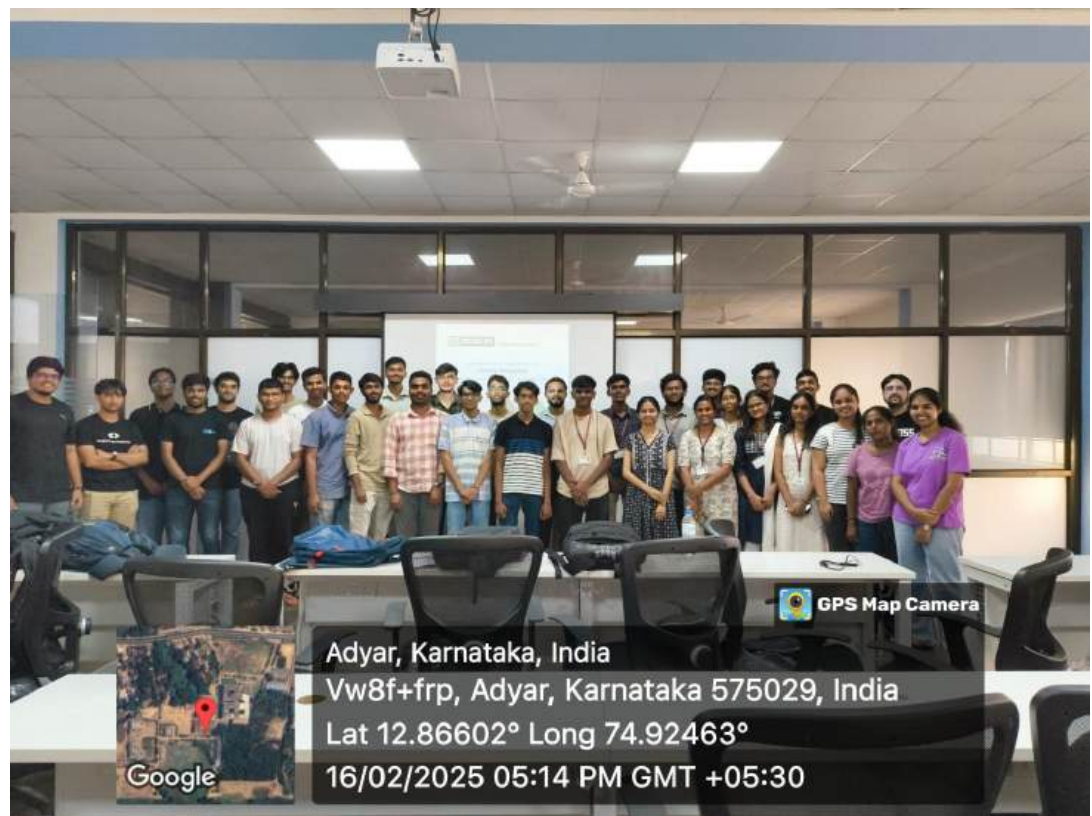


Image: 22. Students attended FOSS meet