

ARTIFICIAL INTELIGENCE AND MACHINE LEARNING



AIML Monthly Newsletter: 03-08-25 to 31-08-25

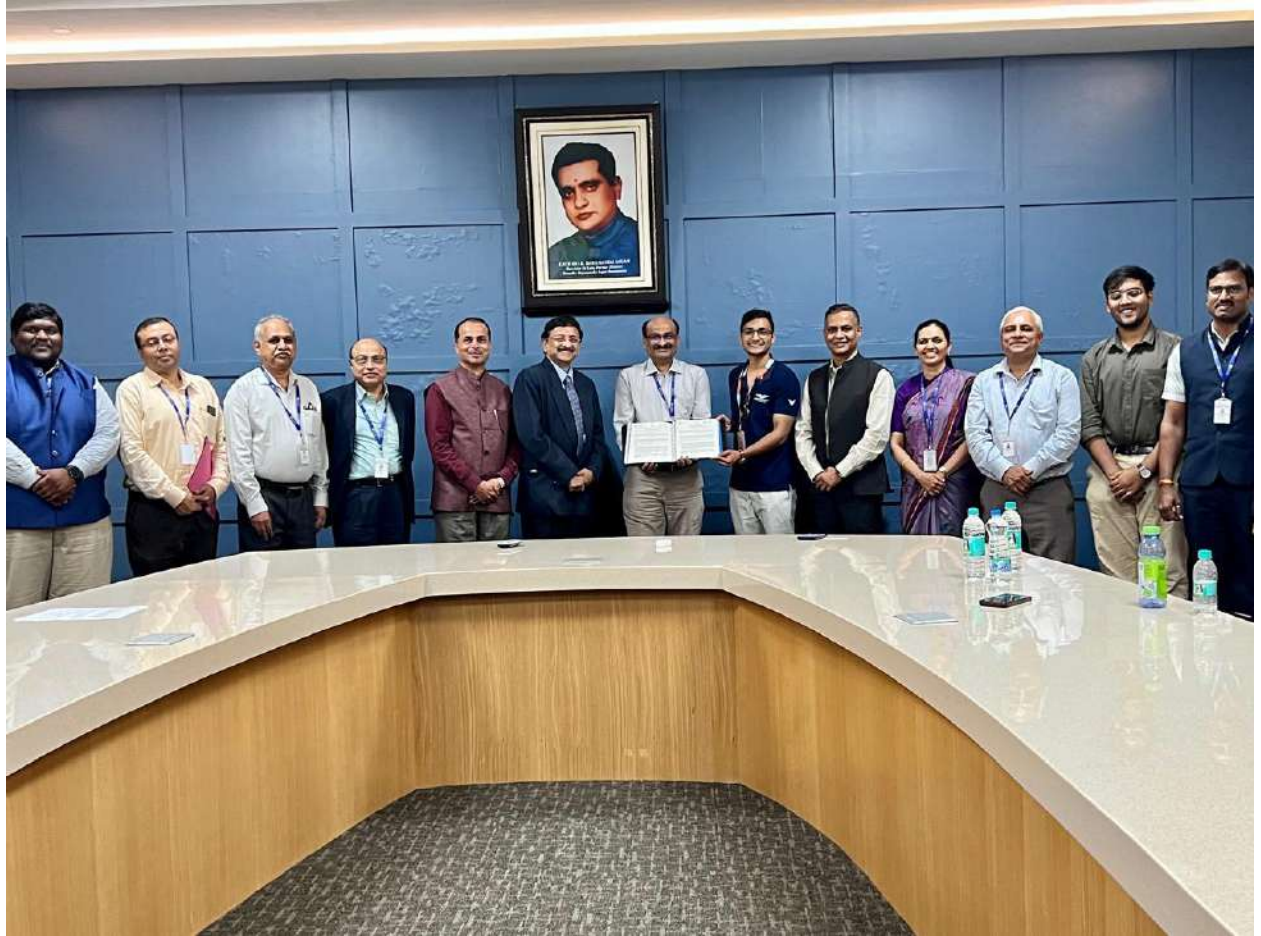


1. Departmental Activities

On 07/08/2025, the Department of Computer Science and Engineering (AI & ML) at Dayananda Sagar University (DSU), Bengaluru, entered into a strategic partnership with the Wadhvani Foundation. This collaboration aims to foster innovation and excellence in the field of Artificial Intelligence (AI) and Machine Learning (ML) through joint initiatives, research, and development projects.



The Wadhvani Foundation, known for its commitment to advancing technology and entrepreneurship, will work closely with DSU to enhance the academic and practical aspects of AI and ML education. The partnership is expected to lead to the development of cutting-edge solutions and contribute significantly to the technological landscape.



This MoU marks a significant step towards bridging the gap between academia and industry, providing students and faculty with opportunities to engage in impactful research and real-world applications of AI and ML.

2. One-Day Faculty Development Program

2.1 Faculty Development Programme on “Empowering Educators for Transformational Engineering Education”

The School of Engineering is organized a Faculty Development Program titled “Empowering Educators for Transformational Engineering Education” from 30th July to 5th August 2025. Faculty members from Department of CSE (AI & ML), Dayananda Sagar University participated in this initiative aimed at enhancing practices in Outcome-Based Education in line with the latest NBA guidelines. Key sessions covered curriculum design, CO-PO-PSO mapping, innovative teaching

methods, and outcome-aligned assessment. In addition to OBE-focused sessions, the FDP included strategic workshops on:

- i. Highlights:
 - Curriculum design for OBE
 - CO-PO-PSO mapping and attainment
 - Innovative teaching & assessment strategies
 - Reflective teaching and continuous improvement
- ii. Special Workshops:
 - Social Media for Academic Engagement & DSU Branding
 - Faculty Mentoring & Wellness
 - Transformational Education Models (aligned with NEP 2020)

The FDP supported DSU's broader vision of institutional transformation and academic excellence. Participation is mandatory for all faculty members.

- 2.2 The Department of Computer Science and Engineering (AI & ML) is pleased to share that a research article titled "Blockchain-Enabled Medical Waste Management System for Enhanced Traceability, Safety and Environmental Protection" has been published in the International Journal of Advances in Soft Computing and its Applications (Q2 – SciVal 2025).

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- **Mr. Mude Nagarjuna Naik** – CSE (AI & ML)
- **Mr. Mithaguru** – CSE (AI & ML)
- **Mr. Godhandaraman T** – CSE (Data Science)

Blockchain-Enabled Medical Waste Management System for Enhanced Traceability, Safety and Environmental Protection

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Abstract

Medical waste management has grave issues concerning traceability, regulatory, and the environment. The traditional systems which are centered on manual record-keeping and the usage of centralized databases usually lead to data loss and unauthorized disposal along with inefficiencies. In this paper, the researcher comes up with a blockchain-integrated medical waste management system to support Internet of Things (IoT)-driven technologies and smart contracts to streamline a safe, autonomous, and anti-tampering system of waste handling. Smart bins enabled with IoT and fitted with GPS, ultrasonic and weight sensors collect live data regarding waste creation and conveyance and this information is transferred or relayed through Wi-Fi/LoRaWAN to the edge/cloud gateways. This data is stored in a protected manner, verified on a permissioned blockchain and, most importantly, the most important tasks, such as scheduling a pickup and approving disposal are done within smart contracts. Experiment findings show 100 percent traceability accuracy, a 30 percent less time in disposal, and a 90 percent better regulatory compliance. The proposed framework will have three new contributions as compared to the existing systems, augmenting the route validation algorithm with a live tracking device in the form of GPS to detect and prevent deviation, a neural network-based model to pre-validate transactions and prevent fraud, and an optimization layer within the smart contract that will support the energy cost to ensure scalability of the proposed framework. The said features altogether allow smart, anticipatory, and regulation-conformant waste processing, which makes this work stand out of existing methods.

Keywords: Blockchain, Traceability, Medical Waste, Environmental Protection, GPS-based route validation.

1 Introduction

Illegal dumping of medical waste has turned out to be a major global concern since it can have dire effects both to the environment and to the human body. Hazardous medical

Received 1 May 2025; Accepted 10 July 2025

The article contributes to the growing research on sustainable and technology-driven medical waste management systems by leveraging blockchain for enhanced traceability and environmental protection.

2.3 **Prof. S.V.K.R. Rajeswari**, Professor, Department of Computer Science and Engineering (AI & ML), Dayananda Sagar University, has been awarded a Certificate of Appreciation by the Department of Medical Electronics Engineering, Dayananda Sagar College of Engineering, for her active participation in the six-day Faculty Development Program on “Biomaterials & Nanomaterials in Biomedical and Clinical Applications,” held from July 14–19, 2025. The program, supported by IEEE Bangalore Section, EMB Bangalore Chapter, and the Biomedical Engineering Society of India, focused on advancements in biomedical and clinical applications of emerging materials. Her enthusiastic involvement reflects her dedication to continuous learning and interdisciplinary research in biomedical engineering.



2.4 **Prof. Trupthi Rao**, Assistant Professor, Dept. of CSE (AI&ML) has presented a paper titled “A Novel Post-hoc Explainable AI Method to unveil an Ensemble Black-box ML Model for Identification Friend or Foe in Military AI” in the 16th International Conference on Computing, Communication and Networking Technologies (ICCCNT

2025), held at IIT Indore, in association with the IEEE Electronics Packaging Society and the All India Council for Technical Education (AICTE), during July 6th to 11th 2025.



- 2.5 **Prof. Trupthi Rao**, Assistant Professor, Dept. of CSE (AI&ML) has presented a paper titled “Investigating the Root Causes of Crime using Fuzzy Logic” and “Smarter Farming: Predicting Crop Viability through Temperature and Humidity Analysis” at the 3rd IEEE International Conference on Networks, Multimedia and Information Technology (NMITCON-2025) during 1st-2nd, August 2025 in Association with IEEE Bangalore Section, Organized by Nitte Meenakshi Institute of Technology, Bengaluru.



NITTE
(Deemed to be University)

**NITTE MEENAKSHI
INSTITUTE OF TECHNOLOGY**

Nitte University Campus, Bengaluru

**IEEE
NMITCON**

1st-2nd August 2025
BENGALURU | KARNATAKA | INDIA

**3rd IEEE International Conference on Networks,
Multimedia and Information Technology**

Certificate of Participation

This Certificate is Presented to

.....Trupathi Rao.....

for the Paper Titled

.....Investigating The Root Causes of Crime Using.....

.....Fuzzy Logic.....

at the 3rd IEEE International Conference on Networks,
Multimedia and Information Technology (NMITCON-2025)
during 1st-2nd, August 2025 in Association with IEEE
Bangalore Section, Organized by Nitte Meenakshi Institute
of Technology, Bengaluru.

Dr. PARAMESHACHARI B D
Conference Chair, NMITCON
Professor & HoD, Dept. of ECE, NMIT

Dr. H C NAGARAJ
Principal,
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- 2.6 **Dr. Joshuva Arockia Dhanraj**, Assistant Professor, Dayananda Sagar University, Bengaluru, Karnataka, has participated in the AICTE-recognized Faculty Development Programme on "Data Science and Machine Learning" organized by the National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, conducted by the Information Management and Emerging Engineering Department from 28th July to 1st August 2025.



Certificate No: ICT-2428/25

**National Institute of
Technical Teachers Training and Research
Chandigarh**

MINISTRY OF EDUCATION, GOVERNMENT OF INDIA

Certificate

This is to certify that



JOSHUA AROCKIA DHANRAJ

**DAYANANDA SAGAR UNIVERSITY, BENGALURU
Karnataka**

*Participated in the AICTE Recognized Faculty Development Programme
on*

Data Science and Machine Learning

Conducted by

Information Management and Emerging Engineering Department

from

28/07/2025 to 01/08/2025 (One Week)

at

NITTTR, Chandigarh



Maitreyee
Coordinator

[Signature]
Director



Certificate No: ICT-2616/25

**National Institute of
Technical Teachers Training and Research
Chandigarh**

MINISTRY OF EDUCATION, GOVERNMENT OF INDIA

Certificate



This is to certify that

JOSHUA AROCKIA DHANRAJ

**DAYANANDA SAGAR UNIVERSITY, BENGALURU
Karnataka**

Participated in the AICTE Recognized Faculty Development Programme

on

AI for Industry 4.0

Conducted by

Computer Science and Engineering Department

from

04/08/2025 to 08/08/2025 (One Week)

at

NITTTR, Chandigarh




Coordinator


Director

Sagar University, Bengaluru, Karnataka, has participated in the AICTE-recognized Faculty Development Programme on "AI for Industry 4.0" organized by the National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, conducted by the Computer Science and Engineering Department from 4th to 8th August 2025.