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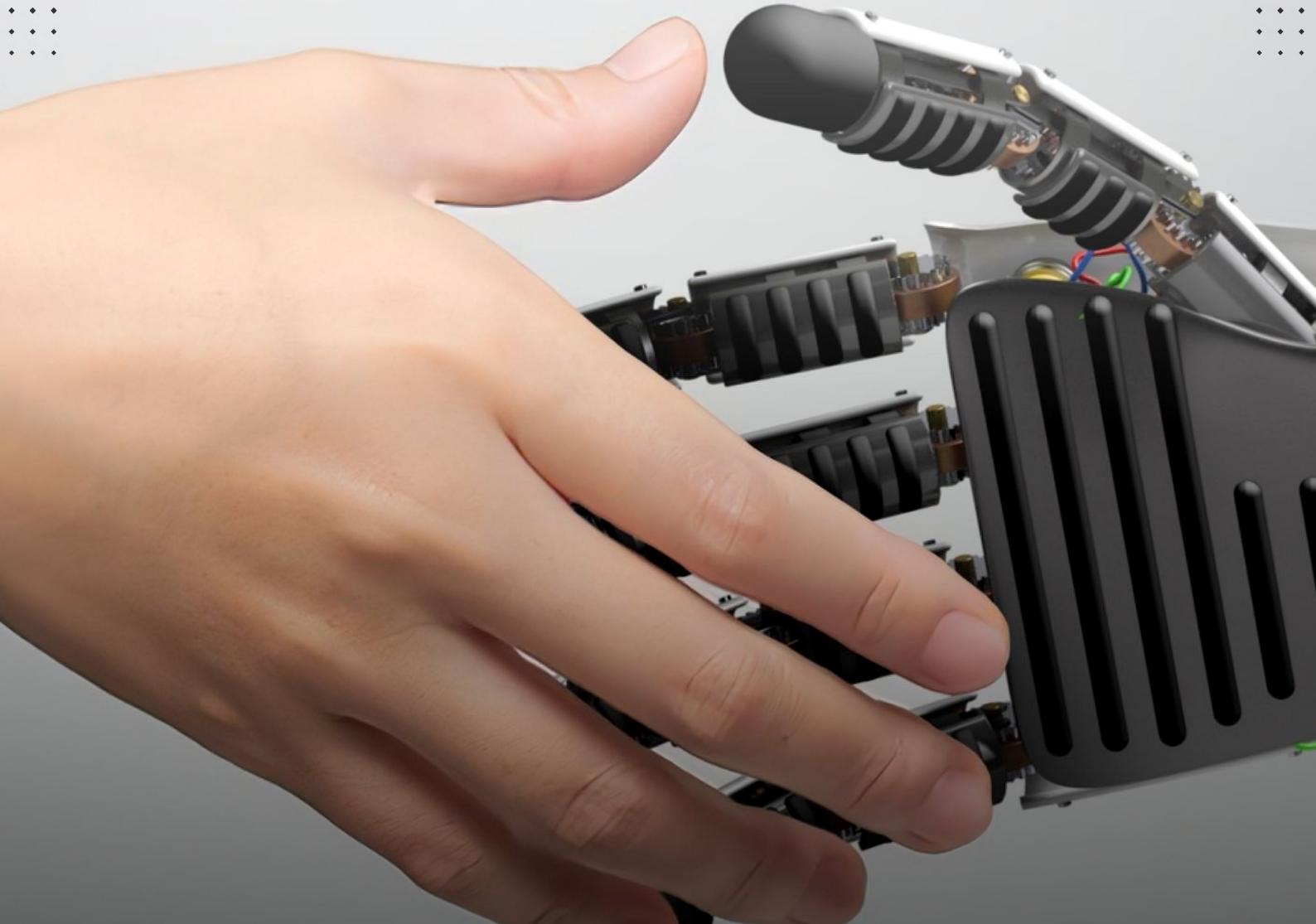
INNOVATION & ENTREPRENEURSHIP DEVELOPMENT CELL (IEDC)

EMPOWERING MINDS, BUILDING FUTURES: CONNECTING
EDUCATION, ENGINEERING, AND MANAGEMENT
EXCELLENCE

SATYA Vision Chronicles

Strategic Advancements & Transformative Youth Achievements

A Half-Yearly Digest on IEDC Happenings



BY THE DEPT. OF CSE (IOT, CS & BT),
UNIVERSITY OF ENGINEERING AND MANAGEMENT
KOLKATA, INDIA

SATYA VISION CHRONICLES

Volume 1 Edition 1

By

Department

Of

Computer Science and Engineering

(Internet of Things, CyberSecurity and Blockchain Technology)

Institute of Engineering & Management, Kolkata

(Newtown)

School

of

University of Engineering and Management, Kolkata

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 - Somrik Mondal, B-28, (2023-27) Batch, Dept. of CSE (IoT, CS & BT)**



From the Desk of the Pro Vice Chancellor

It gives me immense pleasure to present this Half-Yearly Digest on the vibrant activities and achievements of our Institution's Innovation and Entrepreneurship Development Cell (IEDC), Dept. of CSE (IoT, CS & BT). Over the past six months, the IEDC has continued to serve as a catalyst for nurturing creativity, fostering innovation, and encouraging entrepreneurial thinking among our students and faculty.

This period has witnessed remarkable progress in idea incubation, prototype development, and industry-academia collaborations. Several teams have come forward with innovative solutions addressing real-world challenges, and many of these initiatives have already translated into impactful projects and prototype demonstrations. The active engagement of our young innovators in hackathons, workshops, and national-level competitions reflects their determination to contribute meaningfully to the entrepreneurial ecosystem.

We are also proud to highlight the support extended by our mentors, faculty members, and industry partners who have provided valuable guidance in shaping ideas into feasible ventures. The IEDC has successfully organized capacity-building programs, startup awareness drives, and patent facilitation initiatives, creating a strong foundation for the next wave of entrepreneurial leaders.

This digest is a reflection of our collective vision to foster an environment where innovation thrives, startups take root, and transformative ideas find their way to society. I congratulate all contributors and look forward to the continued success of the IEDC in the months ahead.

Prof. (Dr.) Satyajit Chakrabarti
Pro Vice Chancellor
University of Engineering and Management, Kolkata



University of Engineering and Management
Institute of Engineering & Management



INNOVATION & ENTREPRENEURSHIP DEVELOPMENT CELL (IEDC)

Dept. of CSE (Internet of Things, CyberSecurity & Blockchain Technology)

At the IEDC Lab, we are committed to driving technological innovation, fostering entrepreneurial mindsets, and advancing interdisciplinary research. Our focus spans a broad spectrum of next-generation domains, enabling researchers and students to tackle real-world challenges through cutting-edge solutions.

Our Mission

"Empowering Minds, Building Futures: Connecting Education, Engineering, and Management Excellence"

We aim to empower innovators and researchers by providing a collaborative ecosystem that integrates academic rigor with entrepreneurial execution. The IEDC serves as a launchpad for:

- Product innovation and prototyping
- Interdisciplinary project development
- Start-up ideation and incubation support
- Real-world deployment of AI, ML, and IoT solutions

Research Focus Areas

- **AI in Medical Imaging** – Enhancing diagnostics through deep learning and computer vision.
- **Brain-Computer Interface (BCI)** – Exploring neurotechnology for cognition, communication, and rehabilitation.
- **Fintech & Predictive Analytics** – Empowering financial decision-making using machine learning and sentiment analysis.
- **Smart Agriculture & IoT** – Innovating sustainable farming with real-time monitoring and automation.
- **Underwater Exploration & Robotics** – Designing intelligent systems for marine research and surveillance.
- **Nanotechnology & Smart Materials** – Leveraging AI for material property prediction and nanodevice applications.

Advanced Infrastructure

Our lab features state-of-the-art equipment and computational resources for prototyping, experimentation, and scalable model development:

- **NVIDIA RTX 5070, A1000, RTX 4090 & RTX 3060 GPUs** – Accelerated training for deep learning and vision models.
- **RMS Superspec 32-Channel EEG Machine** – High-resolution EEG acquisition for BCI research.
- **NAS Server** – High-speed, secure data storage for large-scale experiments.
- **NVIDIA Jetson Nano & Orin** – Real-time edge AI computing for smart devices.
- **Industry-Grade Prototyping Tools** – 3D printer, Soldering, PCB design, and embedded hardware integration.
- **IoT Platforms (Arduino, Raspberry Pi 5, ESP32)** – Practical development for smart, connected systems.

Collaborate With Us

We welcome partnerships with industry, academia, and government agencies to jointly explore, co-develop, and deploy impactful technology solutions.

 Join us as we build the future of intelligent systems and transform ideas into reality!

Contact with us,

Email id: iedciotlab@gmail.com

LinkedIn Page: https://www.linkedin.com/posts/uem-innovation-and-entrepreneurship-development-cell_ai-deeplearning-cognitiveneuroscience-activity-7337555871637323777-mspl?utm_source=share&utm_medium=member_desktop&rcm=ACoAACIzYoBwqxYEmre6WL2zXlm-I5XAdIYAb4

RESEARCH HIGHLIGHTS (2024–2025)

Applied AI in Healthcare and Biomedical Engineering

1. Predictive Modelling for Chronic Kidney Disease



IEEE IEMENTech 2025



Authors: Apurba Nandi, Priyanka Paul, Avik Kumar Das, Arijeeet Ghosh, Anjali Singh, Aayush Gupta



DOI: [10.1109/IEMENTech65115.2025.10959403](https://doi.org/10.1109/IEMENTech65115.2025.10959403)

2. Judicious Use of Anti-VEGF in Diabetic Macular Edema



Scientific Reports, Nature Springer (Q1)



Authors: Anwesha Mondal, Apurba Nandi, Subhasish Pramanik & Lakshmi Kanta Mondal (UEM, RIO, IISc collaboration)



DOI: <https://doi.org/10.1038/s41598-025-87290-3>

3. Alzheimer's Disease Detection via ML



Springer IESIA 2025 (Accepted for Publication)



Authors: Faishal Abrar, Apurba Nandi, Sangita Dutta, Sandip Mandal

- 4. Gestational Diabetes Prediction using Meta Learning & XAI**
- Springer ICACCP 2025 (Accepted for Publication)
 - Authors: Yashraj Sharma, Suvajit Majhi, Rekharani Mahanta, Avik Kumar Das, Apurba Nandi

- 5. Design IoT and Blockchain-Driven System for Real-Time Organ Donation Management**
- Springer ICDMIS LNNS 2025 (Accepted for Publication)
 - Authors: Siddhartha Roy, Avik Kumar Das, Sandip Mandal, Subhajit Ghosh

- 6. Brain Tumour Diagnosis with Ensemble Deep Learning Technique**
- Springer AISC 2025 (Accepted for Publication)
 - Authors: Apurba Nandi, Tista Mukherjee, Soumika Das, Nitu Saha, Sayantani Das, Sandip Mandal
-

Tourism & Sustainability

- 7. Meta-Deep Learning for Fuel Analytics**
- Springer Book Chapter: "Internet of Vehicles" (2025) (Accepted for Publication)
 - Authors: Apurba Nandi, Sandip Mandal, Sayantani Das, Arijit Ghosh, Avik Kumar Das
- 8. Bishnupur Architecture Analysis & Tourism Enhancement with Deep Learning**
- IEEE INDICON 2025 (Accepted for Publication)
 - Authors: Apurba Nandi, Avik Kumar Das, Tuheena Bose, Divyanshi Srivastava, Sandip Mandal, Madhurya Chowdhury
-

AI-Driven Intelligent Systems & Platforms

- 9. Student-Alumni Networking via DQN & Graph Intelligence**
- IEEE INCIP 2025
 - Authors: N. Kundu, G. Mandal, A. Bhandari, U. Bhaskar, Apurba Nandi
 - DOI: [10.1109/INCIP64058.2025.11019749](https://doi.org/10.1109/INCIP64058.2025.11019749)
- 10. Job Recommendation Using Real-Time Skills and Trends**
- IEEE CIACON 2025 (Accepted for Publication)
 - Authors: Apurba Nandi, Avik Kumar Das, Hritajit Sur, Sankalpa Dutta, Arijit Das, Shuvam Podder
- 11. Firewall Defense via Reinforcement Learning**
- Bentham Science Book Chapter 2025 (Accepted for Publication)
 - Authors: Apurba Nandi, Uddipan Ghosh, Sangita Dutta, Sandip Mandal, Avik Kumar Das, Arijit Ghosh
- 12. Graph-Based Student-Alumni Engagement**
- Springer RAISAA 2024 (Accepted for Publication)
 - Authors: Danisha Basu, Hritajit Sur, Dwaipayan Ghosh, Aritra Das, Apurba Nandi, Arijit Ghosh

13. Overlapping Pairwise Chunking and Merging for Long Context Summarization in LLMs

 IEEE SCRS AIC 2025 (Accepted for Publication)

 Authors: Avik Kumar Das, Subhajit Ghosh

14. Tracking the Tides of Toxicity: Temporal Shifts in Public Emotion and Discourse During the COVID-19 Crisis

 IEEE Conference International Conference on Advances in Computing Research on Science Engineering and Technology (ACROSET 2025), in association with #IEEE_MP_Section,

 Authors: Uddipan Ghosh, Sangita Dutta, Indrajit Mondal, Apurba Nandi, Avik Kumar Das

Financial Forecasting & Economic Intelligence

15. Stock Forecasting Using Bi-LSTM-GRU Hybrid Model

 Taylor & Francis IRTM 2024 (Accepted for Publication)

 Authors: Shaoni Banerjee, Hansa Ray, Shubhanshu Tiwari, Khizra Aslam, Apurba Nandi, Avik Kumar Das

16. Fuzzy AI for Riverbank Health Monitoring

 Springer ICDMIS 2025 (Accepted for Publication)

 Authors: Apurba Nandi, Anjali Singh, Aasish Shrestha, Tanisha Pan, Anwesha Das, Avik Kumar Das

17. Gold Stock Forecasting with FinBERT & Federated Learning

 Springer ICDMIS 2025 (Accepted for Publication)

 Authors: Apurba Nandi, Pratyay Ghosh, Kuntal Roy, Puspak Samanta, Diptadip Choudhury, Anwesha Ghosh

Neuroscience & Cognitive AI

18. Cognitive Load Estimation Using Deep Neural Networks

 Published in: Cognitive Neurodynamics Journal (Springer Nature)

 Impact Factor: 3.10 | SCIE Indexed

 Authors: Shaoni Banerjee, Priyanka Paul, Apurba Nandi, Avik Kumar Das, Arijit Ghosh

 Highlights:

- Presents a multilayer deep neural network framework for hemodynamic assessment of cognitive load during problem-solving tasks.
- Integrates cognitive neuroscience with AI for mental workload estimation in real-time environments.
- Aimed at enhancing adaptive learning systems, brain-computer interfaces.

19. AI-Driven Brain-Machine Interface system for Effortless Communication with physically Challenged Individuals

 IEEE INDICON 2025 (*Accepted for Publication*)

 Authors: Shibagni Bhattacharjee, Debajyoti Chatterjee, Suchanda Chatterjee

Agriculture

20. Design of IOT Enabled Smart Agriculture System Using Automated Vehicle

 IEEE INDICON 2025 (*Accepted for Publication*)

 Authors: Arka Mahajan, Ishika Haldar, Srishti Srinjan, Debajyoti Chatterjee, Suchanda Chatterjee

21. Attention-Enhanced Deep Learning Framework with Edge-Aware Preprocessing for Ground-Based Cloud Classification

 Authors: Apurba Nandi, SAYANTANI DAS, Nitu Saha, Tanisha Pan, Sukriti Sikdar, Anwesha Sinha, Tamoshree Dey

 Conference: 2nd International Conference on Data Mining and Information Security (ICDMIS_2025), supported by Springer (*Accepted for Publication*)

22. Phytosense: A Lightweight System for Real-Time Plant Disease Detection

 Authors: Sudipta Dey, Akash Mondal, Arijit Ghosh, Sreya Ghosh, Apurba Nandi, Kiran Ghosh

 Conference: 3rd International Conference on Data Analytics and Insights, Springer (ICDAI 2025) (*Accepted for Publication*)

Secure Systems & Data Integrity

23. Blockchain for Secure E-Voting Systems

 Title: *Ensuring Security and Transparency in E-Voting System through Blockchain Technology*

 Conference: International Conference on Data Mining and Information Security (ICDMIS-2024), Springer (*Accepted for Publication*)

 Author: Siddhartha Roy

24. Transforming Crowdfunding with Blockchain

 Title: *Transforming Crowdfunding with Blockchain: Unlocking the Future of Fundraising*

 Conference: 8th International Conference on Innovative Computing and Communication (ICICC-2025) Elsevier SSRN (*Accepted for Publication*)

 Author: Dr. Siddhartha Roy, Adarsh Giri, Yash Kumar Giri, Akash Mondal, Md Asid khan

25. Social Media, Polarization, and the Erosion of Informed Voting: The Impact of Echo Chambers

 Conference: Innovative Strategies in Intelligent Computing and Communication (ICOICC 2025) (*Accepted for Publication*)

 Author: Sangita Dutta

26. Transparency and Trust for Religious Organizations

-  **Title:** Developing a Blockchain-Based Framework to Foster Transparency and Trust for Religious Organizations and NGOs
-  **Conference:** ICDMIS 2025 Springer (*Accepted for Publication*)
-  **Author:** Dr. Siddhartha Roy, Adarsh Giri, Yash Kumar Giri, Akash Mondal, Md Asid khan

Applied Physics & NanoTech

27. Photoluminescence Prediction in Silicon Nanostructures

-  **Title:** Ensemble Based Prediction Analytics Model for Photoluminescence Intensity Decay in Silicon Nanostructures
-  **Conference:** International Conference on Data Management, Analytics and Innovation (ICDMAI 2025), Springer (*Accepted for Publication*)
-  **Author:** Siddhartha Roy, Susmita Biswas

28. Predictive Modeling of Photoluminescence spectrum

-  **Title:** Optimization and Comparison of Machine Learning Models for Predictive Modeling of Photoluminescence spectrum of freestanding colloidal Silicene ink: A Multi-Factor Performance Evaluation Framework
-  **Conference:** AdComsys 2025 Springer (*Accepted for Publication*)
-  **Author:** Susmita Biswas, Siddhartha Roy, Rangoon Sarkar and Raisa Santra

Book Chapters

29. Explainable AI for Fuel and Energy Consumption

Springer Book: Internet of Vehicles (Accepted for Publication)

Authors: Apurba Nandi, Sandip Mandal, Sayantani Das, Arijit Ghosh, Avik Kumar Das

30. Micro Intelligent System Technology for Adaptive Firewall Defense

Bentham Science (2025) (Accepted for Publication)

Authors: Apurba Nandi, Uddipan Ghosh, Sangita Dutta, Sandip Mandal, Avik Kumar Das, Arijit Ghosh

31. Blockchain Technology in the Global Supply Chain: A Theoretical Overview and Security Issues

Contemporary Issues in International Trade, Emerald Publishing Limited, May 2024

DOI: <https://doi.org/10.1108/978-1-83797-320-020241012>

Authors: Dr. Siddhartha Roy

32. Dr. Siddhartha Roy Editor of Cutting-Edge Bioinformatics Volume Edited Book: Exploring Cutting-Edge Intelligent Applications of Bioinformatics: A Practical Perspective (Accepted for Publication)

CRC Press, Taylor & Francis Group, USA (2024)

33. Dr. Siddhartha Roy Editor of Volume on Deep Neuro-Fuzzy & Explainable AI, Intelligent Systems: Emerging Trends and Challenges in Deep Neuro-Fuzzy Models and Explainable AI

Apple Academic Press (CRC Press, Taylor & Francis Group, USA) (2024) (*Accepted for Publication*)

34. LSTM-Based E-commerce Sales Prediction

Book Chapter Title: *Enhancing E-commerce Sales Prediction: Overcoming Data and Complexity Challenges with LSTM Models (Accepted for Publication)*

CRC Press, Taylor & Francis Group, USA: *Intelligent Systems: Emerging Trends and Challenges in Deep Neuro Fuzzy Models and Explainable Artificial Intelligence*

Authors: Sangita Dutta, Dr. Siddhartha Roy

35. Interdisciplinary Advances in AI

Book Nova Science Publisher: *Intelligent Systems and Emerging Technologies: Interdisciplinary Advances in AI, Engineering, and Computational Modeling (Accepted for Publication)*

Authors: Dr. Siddhartha Roy, Dr. Malay Gangopadhyaya, Dr. Sandip Mandal

36. Tele-Oncology in Bioinformatics

Chapter Title: *An Intervention of Tele-Oncology in Palliative Care: A Critical Review and Analysis of Remote Monitoring, Cancer Diagnosis, and Treatment (Accepted for Publication)*

Apple Academic Press (CRC Press): *Intelligent Applications of Bioinformatics: A Practical Approach*

Authors: Partha Sarker, Dr. Siddhartha Roy

37. AI in Drug Discovery and Telemedicine

Chapter Title: *Machine Learning Transformations in Drug Discovery: A Paradigm Shift in Development Strategies (Accepted for Publication)*

De Gruyter Publishers (Scopus Indexed): *Drug Discovery and Telemedicine Through Artificial Intelligence, Computer Vision, and IoT*

Author: Dr. Siddhartha Roy

Awards & Recognitions

1. 🏆 Aegis Graham Bell Award Finalist (Feb 2025), Supported by Govt. of India

Project: AquaSmartIQ – A smart Aquaculture monitoring platform using IoT and AI

Team: Apurba Nandi, Avik Kumar Das, Sandip Mandal, Arijeet Ghosh



Image 1: University of Engineering & Management (UEM), was recognized as a finalist under the 'Innovation in RPA' category and **Dr. Sandip Mandal**, Head of the Department, CSE (IoT, CS & BT), received the award in the esteemed presence of **Hon'ble Minister Shri Jitin Prasada**, Union Minister of State for Commerce and Industry, and Electronics and Information Technology, Government of India.

Image 2: The award was graciously conferred upon our esteemed Vice Chancellor Sir, **Dr. Sajal Das Gupta**, accompanied by team members **Avik Kumar Das** and **Apurba Nandi** in recognition of their contribution.

2. 🎉 2nd Runner Up – CMPDIL Hackathon 2025, Coal India Ltd. Govt. of India.

Project: Intelligent Fire Monitoring & Ventilation Control System for Underground Mines

Team: Dr. Sandip Mandal, Avik Kumar Das, Apurba Nandi, Koustov Mondol, Dr. Sajal Dasgupta

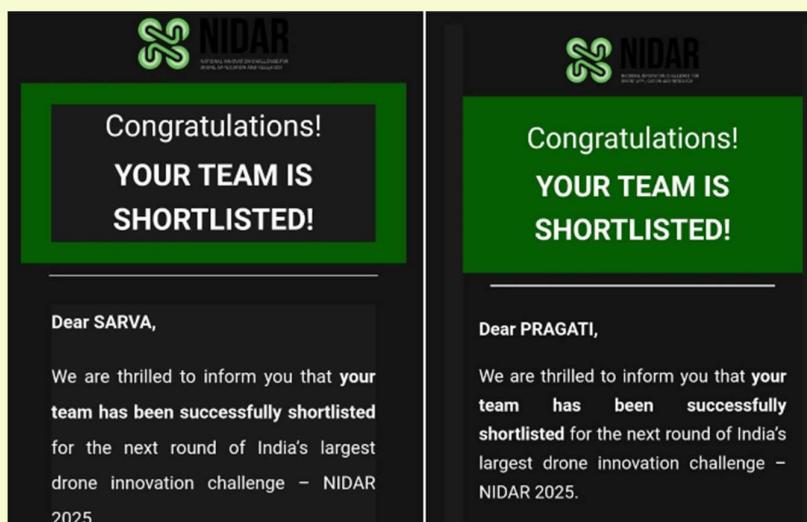
Image 1: Our team secured the 2nd Runner-Up position for *Problem Statement 3: Intelligent Monitoring and Control System for Ventilation and Fire Management in Underground Coal Mines* at Hackathon on R&D 2025, organized by CMPDI (CIL) with Ministry of Coal, winning a prize of ₹2,00,000 for innovation excellence.

Problem Statement-3: Indigenous development of Intelligent Monitoring and Control System for Ventilation and Fire Management System in Underground Coal Mines		Main Prizes
IIT-Ropar; IIT-Kharagpur; IIT-Delhi and Ingenisys Integration LLP, Kolkata.	Winner	 1st Prize INR 4,00,000
NIT, Rourkela	1st Runner Up	 2nd Prize INR 3,00,000
University of Engineering and Management, Kolkata.	2nd Runner Up	 3rd Prize INR 2,00,000

3. Two innovation-driven student teams — **Team Sarva** and **Team Pragati** — have selected to the next round of **NIDAR 2025, India's premier National Innovation Challenge** for Drone Applications.

Team Sarva, led by **Yashraj Panda**, is addressing critical challenges in Disaster Management, while Team Pragati, guided by **Tuheena Bose**, is transforming Precision Agriculture through smart drone technology.

With the unwavering support of faculty mentors **Prof. Apurba Nandi** and **Prof. Avik Kumar Das**, these teams exemplify the spirit of impactful, real-world innovation and continue to push boundaries in drone research and application.



4. 🏆 **Team 18 won the JPMorgan Chase Code for Good 2025 Hackathon** held in Mumbai on June 7–8! Among the standout contributors was **Hritajit Sur** (3rd from left in Image 1), a brilliant student from our **IEDC Lab, UEM Kolkata**, who helped build **FootPathshala** — a smart, field-ready solution for UPAY that automates attendance, assessments, curriculum, and volunteer tracking. Kudos to JPMorgan Chase for this inspiring platform and to UEM for nurturing future-ready talent!



Industry-Academic Collaboration

1. BIRAC-Funded Project

Collaborating institutions: Regional Institute of Ophthalmology (RIO), Indian Institute of Science (IISc), UEM

Leads: Apurba Nandi, Avik Kumar Das

Output: Copyrighted OCT dataset, AI models for diabetic retinopathy diagnosis

2. Research Collaboration with Jadavpur University

Outcome: Publication in *Journal of Cognitive Neurodynamics* (Impact Factor: 3.10)

3. Ongoing Project with IEST, Shibpur

Focus Area: Research on underwater technologies

Outcome: Active interdisciplinary research in progress

4. Collaboration with WEBEL

Outcome: Industrial training provided to lab students, strengthening industry-readiness and practical exposure

Product Development Highlights

- **2 Copyrights Filed:**

- OCT Image Dataset – For retinal disease detection (BIRAC collaboration)
- Temple Architecture Dataset – For cultural heritage preservation and classification

- **12 Patents Filed in Diverse Domains:**

- Agriculture – Smart irrigation, disease detection
- Medical Diagnostics – AI-based early disease screening

- Electrical & Industrial Automation – Smart control systems
- Forest Fire Sustainability – Real-time wildfire monitoring
- Smart Traffic Management – AI-driven congestion and violation detection

Research Outcomes Summary

RESEARCH OUTCOMES	ACCEPTED/ PUBLISHED	COMMUNICATED
<i>Copyrights</i>	-	2
<i>Patents</i>	-	12
<i>Transactions</i>	-	2
<i>Journals</i>	2	8
<i>Conferences</i>	27	30
<i>Book Chapters</i>	9	10
<i>Awards & Recognitions</i>	3	NA

IEDC Internship Highlights

At our IEDC Lab, we successfully organized two **academic internship programs**, engaging over **200 students** in hands-on learning experiences. These programs provided practical exposure to **prototype designing, AI model development, and real-world problem solving**, equipping students with the skills needed to meet industry demands. Through guided mentorship and project-based learning, participants gained valuable insights into cutting-edge technologies and innovation-driven practices. The initiative has empowered students to transform their ideas into tangible solutions, making them industry-ready and future-focused.

◆ Major Research Grant Received

We are delighted to share that we have received a generous research grant of approximately ₹50 lakhs from the IEM-UEM Group Trust and other supporting bodies. This significant support will further strengthen our ongoing research and innovation initiatives. We extend our heartfelt gratitude to **Prof. (Dr.) Satyajit Chakrabarti** Sir for his visionary leadership and unwavering commitment to advancing research and development. His initiative has opened new avenues for impactful work and collaboration.

Visual Archive:

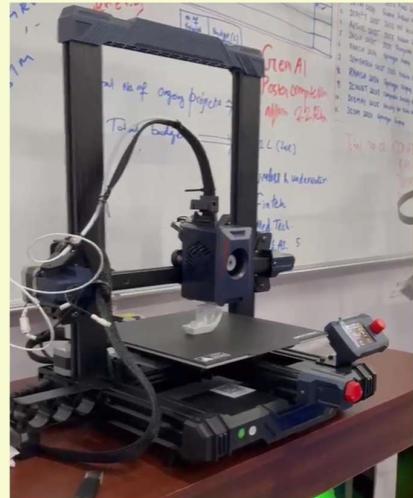
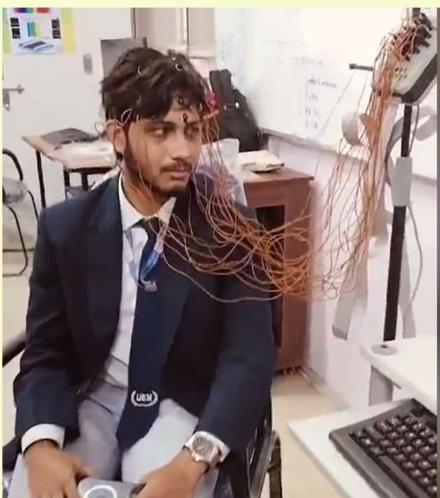


Image 1: A 32-channel EEG machine (**RMS SuperSpec 32**) with dedicated GPU (**Nvidia RTX 3060**) has been successfully installed in our IEDC lab to facilitate advanced research in Brain-Computer Interface (BCI) and neurotechnology. Currently, we are in the process of data acquisition to support ongoing and upcoming research initiatives. Students and researchers in our lab are actively exploring the BCI domain, working on innovative projects that bridge the gap between neuroscience and artificial intelligence

Image 2: A **3D printer** is now successfully installed in the IEDC Lab! This cutting-edge addition will empower our students and researchers to bring their innovative ideas to life—from rapid prototyping to complex design modeling.



Image 3 : Our IEDC lab is equipped with a high-performance **NVIDIA RTX 4090 GPU** with **GDDR6X** memory and a **16TB NAS server**, enabling advanced AI research and computation-intensive tasks.

Image 4 & 5: We had the privilege of hosting distinguished dignitaries, including [Phillip Bradford](#), Associate Professor in Residence at the University of Connecticut; [St Vuong](#), Professor at the University of British Columbia; and [Charles Rubenstein](#), Professor at Pratt Institute, US, along with other respected personalities. Our students showcased their innovative projects across domains.



Image 6: Prof. Sayantani Das, accompanied by student researchers from our IEDC lab, participated in the **Cardano India Summit 2025**, held on 29th March at the Indian Institute of Technology, Kharagpur Research Park in New Town, Kolkata. The summit offered an enriching experience for our students, researchers, and faculty, providing deep insights into Blockchain technology, Artificial Intelligence, and the evolving Cardano ecosystem.

Image 7: Some students from the IEDC Lab are showcasing their innovative projects in front of industry experts, faculty members, and visiting dignitaries. These prototypes reflect cutting-edge solutions across domains like AI, IoT, and sustainable tech. The event highlights the spirit of research, hands-on learning, and entrepreneurship nurtured within the lab, encouraging students to transform ideas into impactful real-world applications.





Image 8: Two student teams from UEM have advanced to the next round of NIDAR 2025, India's premier National Innovation Challenge for Drone Applications. Team Sarva, guided by Prof. Avik Kumar Das, is developing drone-based solutions for disaster management, while Team Pragati, under the mentorship of Prof. Apurba Nandi, is innovating in precision agriculture through smart drone technologies. Their success is a testament to the strong mentorship and technical guidance provided by UEM's vibrant innovation ecosystem.



Image 9: We were privileged to host Prof. Amlan Chakrabarti, Director of A.K. Choudhury School of IT, Calcutta University, at our IEDC Lab, Dept. of CSE (IoT, CS & BT), UEM Kolkata. He explored our innovations in BCI-based EEG analysis, underwater acoustic communication, and AI/ML-driven embedded systems. His insightful feedback deeply motivated our students and researchers. We thank him for his time and vision on deep tech, quantum systems, and future computing, and look forward to more such collaborations.

- **Our Faculty Members:**

From Left to Right: Prof. Arunima Biswas, Prof. Ahona Ghosh, Prof. Rangon Sarkar, Prof. (Dr.) Arijeet Ghosh, Prof. (Dr.) Siddhartha Roy, **Prof. (Dr.) Sandip Mandal [Head of the Department]**, Prof. Apurba Nandi, Prof. Sweta Saha, Prof. Sangita Dutta, Prof. (Dr.) Susmita Biswas, Prof. Nitu Saha, Prof. Sayantani Das.

(Prof. Avik Kumar Das, Prof. Suchanda Chatterjee Das, and Prof. Uddipan Ghosh were not present in the photograph)





UEM, Kolkata has won 'AAA' category out of the top 10 institutes of India including all IITs & all NITs of the country in the NPTEL Program

 **Innovation is the fuel of progress, and ideas are its spark.** 

As we close this edition of the IEDC Half-Yearly Digest, let this not be an ending but a new beginning. Every story shared here is a reminder that innovation thrives when passion meets perseverance, and entrepreneurship flourishes when guided by vision and courage.



The journey of our innovators and mentors reflects a collective spirit — to imagine, to create, and to transform. With each prototype built, each idea nurtured, and each challenge overcome, we take one step closer to building a stronger ecosystem of innovation and impact.

May this digest inspire every reader to believe in the power of ideas and to continue pushing boundaries in the months ahead. The future belongs to those who dare to dream and act upon it.



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 *Together, let us innovate for a better tomorrow.* 