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NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH, CST), MBA & MCA

A Report on AICTE Sponsored Online 6 Days Faculty Development Program on "Smart and Sustainable Waste Management Using IoT and Data Analytics"

Organized by Department of Computer Science Engineering – Data Science

from 15.09.2025 to 20.09.2025

Report Submitted by: Mrs. Manjula Prabakaran, Assistant Professor, Department of CSE- (Data Science).

Total Participants: Registered - 536 Participants; Attended – 485 participants from all over India
Mode of Conduct: Offline
Report Received on 01.10.2025.

About the PDP

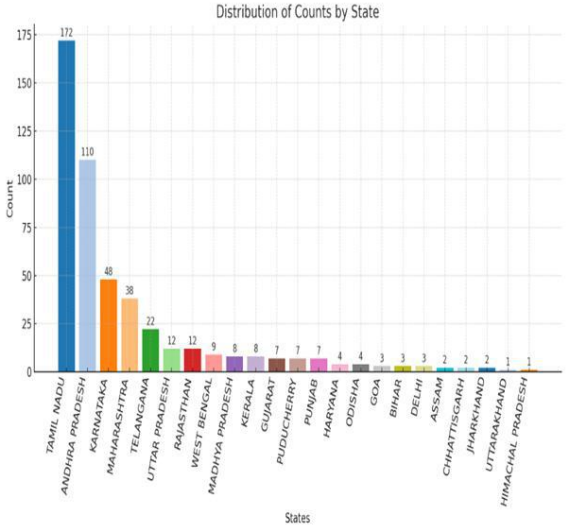
The AICTE-sponsored 6-Day Online Faculty Development Programme (FDP) on "Smart and Sustainable Waste Management Using IoT and Data Analytics" was organized by the Department of CSE (Data Science), MITS Deemed to be University from 15th to 20th September 2025. The FDP aimed to enrich faculty members and research scholars with advanced knowledge in IoT, data analytics, AI/ML applications, and sustainable practices for modern waste management systems. The sessions combined academic depth, industry practices, and case studies, offering a well-rounded learning experience.

Participants Statistics:

The FDP witnessed active participation from around **485 participants** across India, with approximately **85% faculty members** and **15% research scholars**. Participants represented multiple states, reflecting the national reach of this programme.

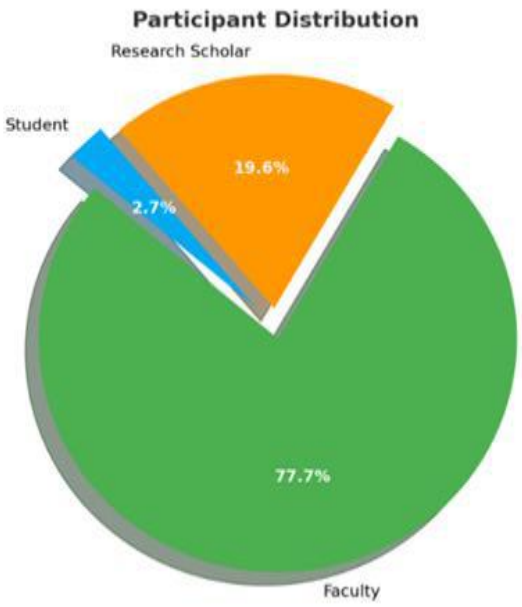
Geographic Distribution of Participants

STATE	COUNT
TAMIL NADU	172
ANDHRA PRADESH	110
KARNATAKA	48
MAHARASHTRA	38
TELANGANA	22
UTTAR PRADESH	12
RAJASTHAN	12
WEST BENGAL	9
MADHYA PRADESH	8
KERALA	8
GUJARAT	7
PUDUCHERRY	7
PUNJAB	7
HARYANA	4
ODISHA	4
GOA	3
BIHAR	3
DELHI	3
ASSAM	2
CHHATTISGARH	2
JHARKHAND	2
UTTARAKHAND	1
HIMACHAL PRADESH	1
TOTAL	**485**



Participants Category Wise Distributions:

Participant Type	Count
Faculty	377
Research Scholar	95
Student	13
Total	485



Inauguration Ceremony

The Department of Computer Science and Engineering (Data Science) successfully hosted AICTE sponsored 6 days online Faculty Development Program (FDP) titled **" Smart and Sustainable Waste Management Using IoT and Data Analytics"** from **Sep 15th to Sep 20, 2025**. This prestigious event was conducted on an online platform and attracted an impressive turnout of 536 registered participants and from them 485 attended covering all across India encompassing faculty members, dedicated research scholars, and enthusiastic students.

The FDP was inaugurated with a Welcome Address, followed by a Felicitation Address delivered by **Dr. S. Kusuma**, HoD of Data Science and FDP Coordinator. She warmly greeted the participants and introduced the objectives of the program. Dr. Kusuma highlighted the importance of sustainable and smart solutions for waste management and emphasized the significance of the FDP theme in addressing environmental challenges through technology integration.

The resource persons for each session were gracefully introduced by **Mrs. Manjula Prabakaran**, Assistant Professor, Department of CSE (Data Science), who provided brief yet insightful overviews of their professional backgrounds and expertise, setting the stage for engaging and informative sessions.

Day 1 – 15th September 2025

Session 1 - (6:30 PM – 8:00 PM) by Dr. Bulla Rajesh, Assistant Professor, Indian Institute of Information Technology, Sri City -

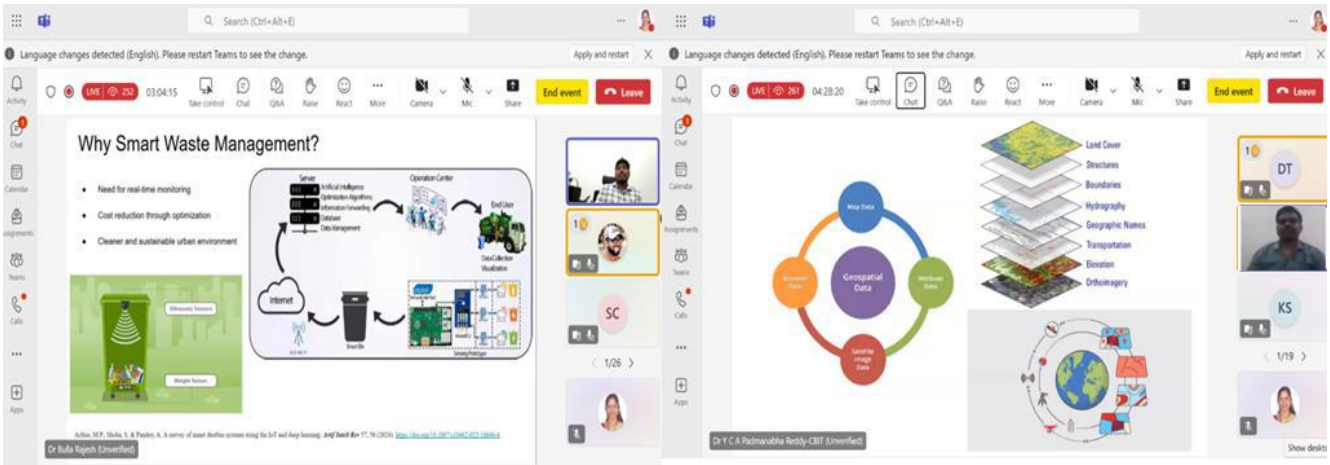
Topic: *Role of IoT in Smart Waste Management Systems*

The key highlights of the session included how IoT can overcome limitations of traditional waste management practices, discussed a **generic IoT architecture**, and provided practical examples of smart monitoring. He also emphasized the social responsibility of every citizen in handling waste properly.

Session 2 - (8:00 PM – 9:30 PM) by Dr. Y. C. A. Padmanabha Reddy, Associate Professor, CBIT, Hyderabad

Topic: *Predictive Analytics for Urban Sanitation Planning.*

Dr. Reddy highlighted how predictive models can aid urban planning, sanitation optimization, and policy decision-making. He provided examples of forecasting waste collection needs and resource allocation



Day 2 – 16th September 2025

Session 3 - (6:00 PM – 7:30 PM) by Dr. Suria R. Asai, Principal Lecturer & Senior Consultant, National University of Singapore

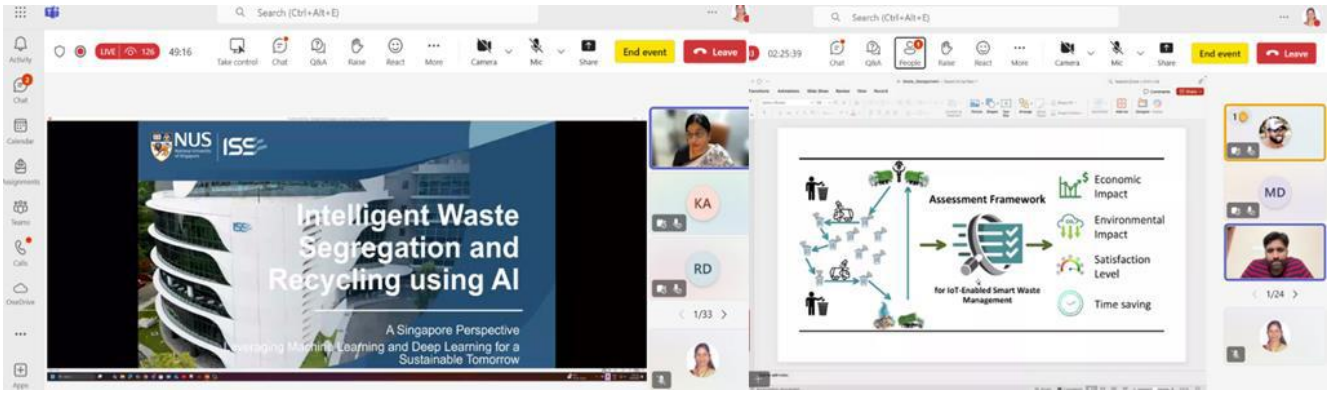
Topic: *Intelligent Waste Segregation and Recycling using AI/ML*

Dr. Suria explained Singapore's unique waste challenges, the recycling gap, and shared case studies demonstrating AI/ML applications in segregation. She also mentioned e-training opportunities, research areas, and the role of data engineers in building sustainable solutions.

Session 4 - (7:30 PM – 9:00 PM) by Mr. Thammisetty Rahul Sai, Senior Cloud Data Engineer, Wissen Technology, Bangalore

Topic: *Using Azure for Managing Smart Waste IoT Platforms.*

Mr. Rahul gave participants practical exposure to cloud workflows, DevOps tools, and data integration techniques that enable real-time monitoring and management of smart waste systems.



Day 3 – 17th September 2025

Session 5 - (6:00 PM – 7:30 PM) by Ms. M. Vijayasanthi, Sr. Associate DevOps, Human Cloud, Bangalore.

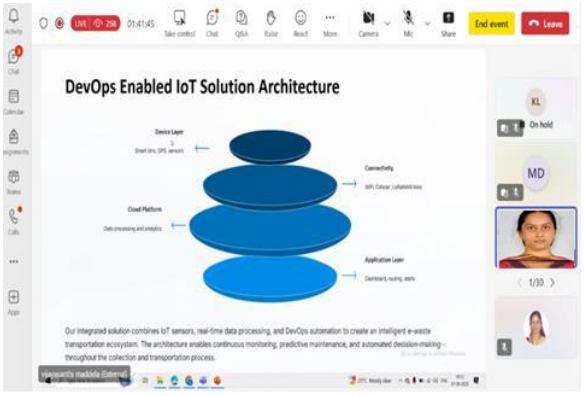
Topic: *Automation in Waste Transportation using DevOps-Enabled IoT Systems.*

Ms. Vijayasanthi described smart garbage monitoring workflows, benefits of automation in transportation, and DevOps tools/technologies that streamline the waste collection lifecycle.

Session 6 - (7:30 PM – 9:00 PM) by Mr. K. Abhijith Saralya, L&D Head & Software Engineer, ACL Pvt Ltd, Bangalore.

Topic: *Smart Bin Data Analytics and Real-Time Monitoring.*

Mr. Abhijith session was highly interactive and **hands-on**, demonstrating how IoT-enabled bins collect and transmit data, and how real-time monitoring can optimize resource allocation and reduce inefficiencies.



Day 4 – 18th September 2025

Session 7 - (6:00 PM – 7:30 PM) by Mr. Naveen Gunasekaran, Principal Software Engineer, Walmart, Chennai.

Topic: *Designing Scalable IoT Architectures for Urban Waste Management.*

Mr. Naveen presented a real-time project demo using Spring technologies and shared detailed insights on designing robust, scalable architectures that can handle urban waste management challenges.

Session 8 - (7:30 PM – 9:00 PM) by Mr. Thamimul Ansari, Azure Data Scientist, 3 Pillar Global, Mumbai,

Topic: *Building Data Pipelines for Waste Tracking Analytics.*

Mr. Ansari elaborated on the essential tools and technologies for data pipelines, strategies to overcome challenges, and shared success stories from industry deployments, giving participants a strong foundation for applied analytics.

Day 5 – 19th September 2025

Session 9 - (6:00 PM – 7:30 PM) by Mr. Purshotham Reddy M, Senior Consultant, Oracle, Bangalore.

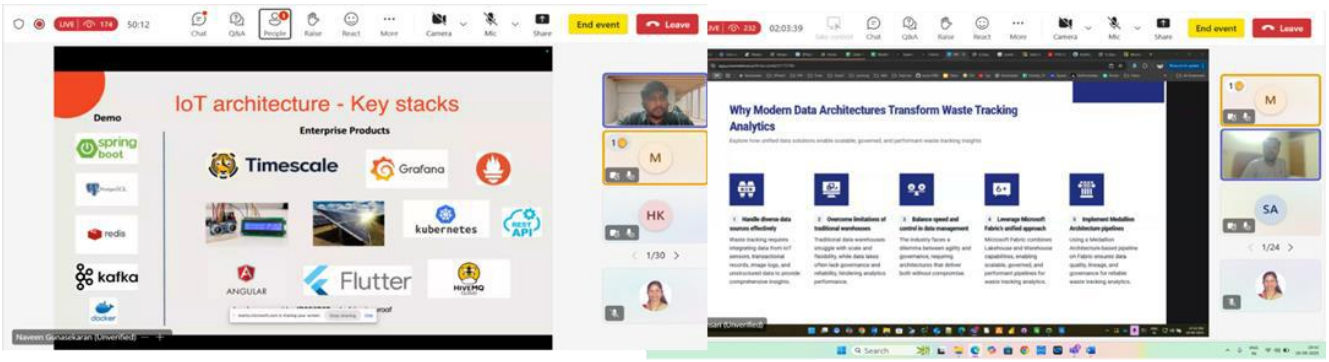
Topic: *Data Management for Smart Waste Systems.*

Mr. Reddy explained best practices in data integration, secure storage, and retrieval for IoT-enabled smart waste systems, highlighting industry applications.

Session 10 - (7:30 PM – 9:00 PM) by Ms. P. Madhuri Penikalapati, Senior Machine Learning Engineer, Visa, Bangalore.

Topic: *Machine Learning for Waste Volume Prediction.*

Ms. Madhuri demonstrated how AI/ML can be applied to predict waste volumes, optimize collection schedules, and support urban sustainability. She also highlighted future research opportunities in AI/ML for environmental applications.



Day 6 – 20th September 2025

Session 11 - (2:00 PM – 3:30 PM) by Mr. Noah Franklin, Regional AppSec Delivery Lead, Tech Mahindra.

Topic: *Cybersecurity in IoT-Enabled Waste Systems.*

Mr. Noah drew from his extensive experience in VAPT and penetration testing to explain the cybersecurity challenges and mitigation strategies for smart city waste networks.

Session 12 - (3:30 PM – 5:00 PM) by Mr. Manoj Kumar Soda, Industry Consultant – ESG, Rockwell Automation.

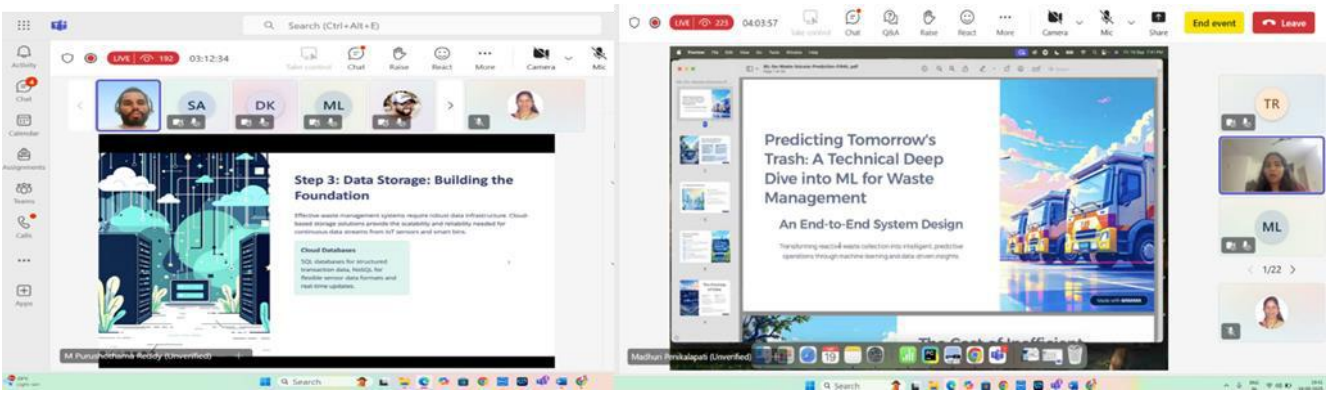
Topic: *Sustainability and Governance in Waste Management.*

Mr. Manoj explained carbon footprint measurement, decarbonization programs, ESG frameworks, and the role of emerging technologies like AI and data analytics in environmental governance.

Session 13 - (5:00 PM – 6:30 PM) by Ms. Sherin Batcha, Senior Lecturer & Trainer, Singapore.

Topic: *Pedagogical Perspectives and Training for Sustainability.*

Ms. Sherin provided international insights into capacity building, curriculum design, and teaching-learning methods that can help institutions train future generations in sustainable technologies.



Valedictory: 20/09/2025

- **Assessment: 6:30 PM – 7:30 PM** via ATAL portal.
- **Valedictory Session (7:30 PM – 8:00 PM):**

The FDP concluded with an online assessment followed by the Valedictory Session, which included reflections from participants. The concluding remarks were given by Dr. S. Kusuma, HOD of Data Science. Participants shared their reflections, praising the breadth of topics and the expert delivery of sessions. The FDP formally ended with a Vote of Thanks by Ms. S. Manjula Prabakaran.

Outcome of the Professional Development Program (PDP):

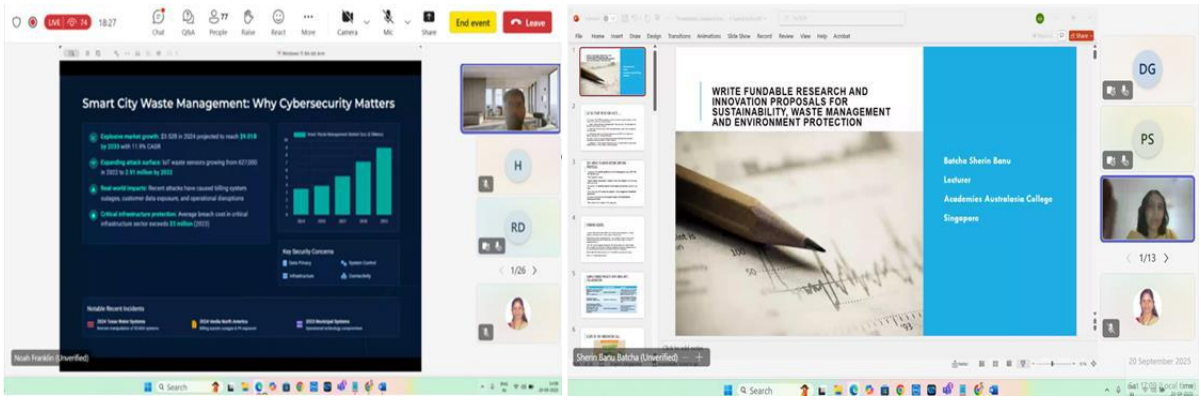
Participants gained:

The FDP enabled participants to gain:

- Knowledge of IoT architectures and smart bin analytics
- Applications of AI/ML in intelligent waste management
- Insights into scalable systems and data pipelines
- Awareness of cybersecurity and ESG strategies
- Skills for research, training, and proposal writing

Participants expressed that the FDP provided an excellent blend of academic and industrial expertise, with hands-on exposure to tools and technologies. It further aligned with the **United Nations Sustainable Development Goals (SDGs)** by promoting:

- **SDG 9: Industry, Innovation, and Infrastructure**
- **SDG 11: Sustainable Cities and Communities**
- **SDG 12: Responsible Consumption and Production**
- **SDG 13: Climate Action**



Thus, the FDP not only strengthened technical competencies but also encouraged participants to contribute towards global sustainability objectives.

Conclusion:

The AICTE-sponsored FDP on *"Smart and Sustainable Waste Management Using IoT and Data Analytics"* was successfully conducted. It provided a valuable platform for knowledge sharing between academia and industry.

The Organizing Committee thanks **AICTE**, the management of **MITS**, the distinguished **resource persons**, and all the **participants** for their support and contributions in making this FDP impactful.

Certificate Distribution:

All participants who successfully completed the assessment and feedback submission received their AICTE-approved FDP certificates.

Appreciation Certificates: Resource persons were honored with appreciation certificates acknowledging their valuable contributions and insightful sessions.