A Report on Six-day Faculty Development Programme on
"AI-Driven Water Management Solutions for Smart Cities"
Organised by Department of CSE- Cyber Security
Sponsored by ATAL from 02.12.2024 to 07.12.2024

Madhusudhan Dhayanithi
Software Engineering Specialist
Trimble Inc.
Chennai, Tamil Nadu
Years of Experience: 19

Rajarajan Tamilmani
Founder
RETECH Solutions Pvt Ltd.
Chennai, Tamil Nadu
Years of Experience: 11 Years

R. Sriram
SCM Solution Manager
Oracle
Dubai, UAE
Years of Experience: 18 Years

Packiyaraj Raja
Senior Oracle PLSQL Engineer
EMIDS
Bengaluru, Karnataka
Years of Experience: 12 Years

D. Panner Selvam
CTO
FFUTUREWISE
Tiruchirappalli, Tamil Nadu
Years of Experience: 10 Years

Report Submitted by: Dr. K.P. Manikandan, Assistant Professor, Department of CSE-Cyber Security; Mr. V. Murugan, Assistant Professor, Department of CSE-Cyber Security .
Mode of Conduct: Online
Collaborating Institutions: Madanapalle Institute of Technology and Science and ATAL ACADEMY
Total Participants: 143
Report Received on 02.01.2025
Resource Person Details:
Faculty Development Programme Schedule:

| Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
6:00PM to 6:30PM	6:00PM to 7:30PM	6:00PM to 7:30PM	6:00PM to 7:30PM	6:00PM to 7:30PM	2:00PM to 3:30PM
Inaugural Session	Session 3	Session 5	Session 7	Session 9	Session 11
	Topic: AI-Driven Water Quality Monitoring Name of the Expert: Dr. D. Lakshmi Senior Associate Professor/AI VIT-Bhopal Years of Exp: 26	Topic: AI in Stormwater Management Systems Name of the Expert: Dr Suthendran Kannan Designation & Organization: Professor, Kalasalingam Academy of Research and Education Years of Exp: 22	Topic: AI-Enhanced Water Conservation Strategies Name of the Expert: Dr. B. Bazeer Ahamed Designation & Organization: Professor, University of Technology and Applied Sciences - Al Musanna Al Maladda, Oman Years of Exp:18	Topic: IoT and AI Integration for Water Management Name of the Expert: Madhusudhan Dhayanithi Designation & Organization: Software Engineering Specialist, Trimble Inc. Years of Exp: 19	Topic: Data Analytics in AI-Powered Water Systems Name of the Expert: Packiyaraj Raja Designation & Organization: Senior Oracle PLSQL Engineer, Emids Years of Exp: 12 Years
6:30PM to 8:00PM	7:30PM to 9:00PM	7:30PM to 9:00PM	7:30PM to 9:00PM	7:30PM to 9:00PM	3:30PM to 5:00PM
Session 1	Session 4	Session 6	Session 8	Session 10	Session 12
Topic: Introduction to AI in Water Management Name of the Expert: Dr. R. Mohan Designation & Organization: Asso. Professor / NIT, Trichy Years of Exp: 18	Topic: AI in Wastewater Treatment Optimization Name of the Expert: Dr. Suresh Kannaiyan Managing Director, Menmozhi Technologies Pvt Ltd India Years of Exp: 14	Topic: AI for Flood Prediction and Management Name of the Expert: Dr. Yuvaraj Durai Samy Designation & Organization: Professor, Department of Computer Science, Cihan University – Duhok Years of Exp: 23	Topic: Decision Support Systems for Water Policy and Governance Name of the Expert: Saakar Ganesh Udayakumar Designation & Organization: Vice President Global Connect, Elysium Group of Companies Years of Exp: 27	Topic: Smart Water Distribution Networks Name of the Expert: R. Sriram Designation & Organization: SCM Solution Manager, Oracle, Dubai, UAE Years of Exp: 18	Topic: AI for Smart Irrigation in Urban Green Spaces Name of the Expert: Rajarajan Tamilmani Designation & Organization: Founder, RETECH Solutions Pvt Ltd Years of Exp: 11
8:00PM to 9:30PM					5:00 PM to 6:30PM
Session 2					Session 13
Topic: AI for Predictive Water Demand Forecasting Name of the Expert: Dr. S. Nickolas Designation & Organization: Professor / NIT, Trichy Years of Exp: 35					Topic: Case Studies of AI-Driven Water Management Name of the Expert: D. Panner Selvam Designation & Organization: CTO, FFUTUREWISE Years of Exp: 10
					6:30PM to 7:30PM Online test & feedback
					7:30PM to 8:00PM Valedictory Session

Inauguration:

The inauguration of the program was held online on 2nd December 2024 at 6 PM. The event was chaired by Dr. C. Yuvaraj, Principal, and co-chaired by Dr. S. V. S. Ganga Devi, HoD, CSE-Cyber Security. The program was coordinated by Dr. K. P. Manikandan, Assistant Professor, CSE-Cyber Security, with Mr. V. Murugan, Assistant Professor, CSE-Cyber Security, serving as the Co-Coordinator.

The session commenced with the welcome address by the Chair, Dr. C. Yuvaraj, who emphasized the importance of cybersecurity in today's digital era. Dr. SVS Ganga Devi highlighted the department's role in fostering innovation and research in cyber security. Dr.KP Manikandan elaborated on the objectives of the program, while Mr. V. Murugan presented an overview of the schedule and activities planned.

The event witnessed enthusiastic participation from faculty members across various institutions. Insights were shared on emerging trends in cybersecurity and academic contributions.

The screenshots of the participants taken on the closing:
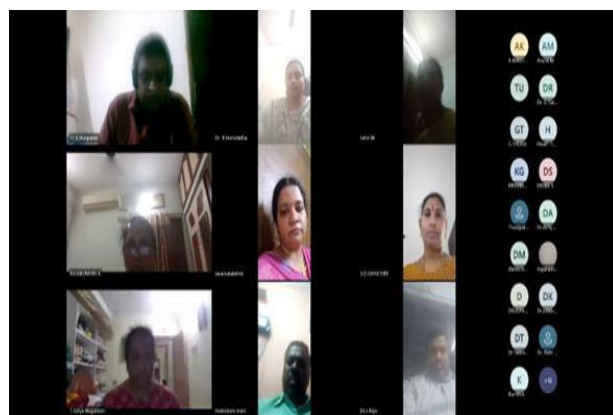
Some of the feedback received for the FDP are as below:
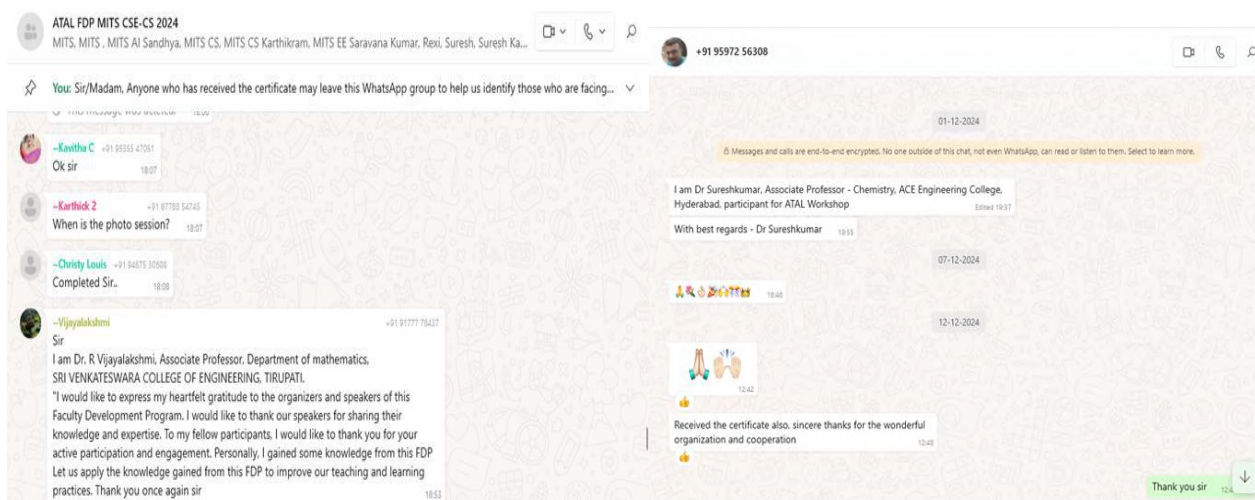
Objective:

- Introduce participants to various AI-driven solutions for water demand forecasting, distribution networks, quality monitoring, and flood management.
- Demonstrate the role of AI in optimizing wastewater treatment, enhancing water conservation strategies, and improving stormwater and smart irrigation systems.
- Showcase the integration of AI with IoT technologies for real-time data collection and monitoring of water resources and infrastructure in smart cities.
- Teach the use of AI-powered predictive analytics and machine learning techniques for forecasting water demand, improving distribution, and managing urban water systems efficiently.
- Present AI-based decision support systems for policy-making, governance, and sustainable management of water resources in smart urban environments.

Outcome:

- The FDP would enable faculties to develop and implement AI-based solutions for predicting water demand, distribution, quality monitoring, as well as flood management.
- Faculties will be trained through hands-on experience to integrate AI and IoT for real-time data acquisition, predictive analytics, and smart irrigation systems in urban water supply.
- The program will explain how AI has been used in optimizing wastewater treatment, conservation, as well as stormwater management.
- Participants will share their knowledge concerning AI-based decision support for policy-making in sustainable water resource management and leave with an implementation framework on AI in smart city water projects as well as a professional network to continue knowledge exchange.

It was a great Initiative by ATAL Academy. We are thankful to AICTE for giving us this opportunity to conduct online FDP for faculty members of technical institute of India free of cost. We got huge response for registration as well as lots of compliment of arranging the online FDP, content and hands on.