# ABV-Indian Institute of Information Technology and Management Gwalior
## (An Institute of National Importance, Ministry of Education, Govt. of India)

## One-Week Faculty Development Program (FDP)

**HYBRID MODE** | on | **FEBRUARY 03 - 09, 2025**

## "AI/ML Applications for Next-Generation Wireless Communication"

### Organized by the Department of EEE

## ABOUT THE INSTITUTE AND THE DEPARTMENT

Atal Bihari Vajpayee - Indian Institute of Information Technology & Management Gwalior (ABV-IIITM Gwalior) is India's premier Institute incepted by Ministry of Human Resource and Development (MHRD), Government of India in the year 1997 as a center of excellence in the field of Information Technology and Management. The Department of EEE is one of the major departments being created in 2022 to achieve the mission and vision of the institute. The Department is currently in its development phase and engaged in teaching, research and development in the areas of VLSI, RF and Microwave Communication, Signal Processing, and Control and Automation. Currently, the department offers B.Tech in EEE, M.Tech. in IC Design and Technology, and Ph.D. program in different areas. The faculty members of the department are also engaged in outreach activities by organizing workshops, faculty development programs, conferences, and academic and industry collaborations. Many government-sponsored research projects are also being undertaken by the faculty members of the department from SERB, DST, DBT, TTDF, MeitY, DSIR, TEQIP, and institute sponsored projects.

## FDP OBJECTIVE

This FDP aims to provide participants with comprehensive knowledge and hands-on expertise in applying AI/ML techniques to address modern wireless communication and sensing challenges, with a focus on applications in intelligent autonomous systems, smart cities, and advanced vehicular networks. It emphasizes practical implementation of AI/ML models for critical tasks such as channel estimation, channel equalization, localization, and solutions for mitigating the channel impairments and nonlinear hardware impairments. Participants will explore state-of-the-art technologies such as millimeter-wave, terahertz, visible light communications (VLC), orthogonal time frequency space (OTFS) modulation, integrated sensing and communication (ISAC), and reconfigurable intelligent surfaces (RIS) using real-world datasets and advanced simulation tools.

## HANDS-ON TOOLS

MATLAB | Python | Ansys HFSS | CST

## FDP COURSE CONTENTS

- From RF to THz: Road-map to Beyond 5G Wireless Communication
- Hands-on Live Project for Channel Estimation in mmWave Communication
- Terahertz Communication: Simulation and Deep Learning Solutions
- Visible Light Communication: Hands-on Precoder & Post-Distortion Solution
- Integrated Sensing and Communication
- Hands-on Deep Learning Deployment on Embedded Targets using MATLAB
- Hands-on Live Project on Antenna Optimization Using ML Approaches
- Reconfigurable Intelligent Surfaces

### CHIEF PATRON
**Prof. S. N. Singh,**
**Director, ABV-IIITM Gwalior**

### PATRON
**Prof. Manisha Pattanaik,**
**HoD (EEE), ABV-IIITM Gwalior**

## RESOURCE PERSONS
### ACADEMIA

Dr. Surendra Pal, Academy Professor, Former Vice-Chancellor DIAT, Pune
Prof. Vimal Bhatia, IIT Indore
Dr. Kuntal Deka, IIT Guwahati
Prof. Sudhan Majhi, IISc Bangalore
Dr. Sanjeev Sharma, IIT (BHU) Varanasi

Dr. Anand Sharma, MNNIT Allahabad
Dr. Anshul Gupta, NIT Raipur
Dr. Rahul Kala, ABV-IIITM Gwalior
Dr. Pinku Ranjan, ABV-IIITM Gwalior
Dr. Praveen Singya, ABV-IIITM Gwalior
Dr. Sandesh Jain, ABV-IIITM Gwalior

### INDUSTRY

Mr. Saket Porwal,
Senior Engineer, Mathworks

Mr. Ravikanti Vinay Kumar,
Senior Engineer Qualcomm

## WHO CAN PARTICIPATE

The applicants are welcome but not limited to B.E./B.Tech., M.E./M.Tech., PhD., Research Scholars, Faculty Members, and Industry Personnel.

## FDP COORDINATORS

**Coordinator**
Dr. Sandesh Jain, Assistant Professor, ABV-IIITM Gwalior (sandesh@iiitm.ac.in) (Contact no.: +91-9713814789)

**Co-Coordinator(s)**
Dr. Somesh Kumar, Assistant Professor, ABV-IIITM Gwalior (somesh@iiitm.ac.in) (Contact no.: +91-9569955745)
Dr. Pinku Ranjan, Assistant Professor, ABV-IIITM Gwalior (pinkuranjan@iiitm.ac.in) (Contact no.: +91-7991101270)

## BANK DETAILS
Account Name: ABV IIITM FDP Account
Account Number: 945210110009380
IFSC Code: BKID0009462
Bank name, address, and Branch: BOI, IIITM Branch, Gwalior

## REGISTRATION FEE

| Category | Online | Offline | Offline (Including Accommodation and Food ) |
|---|---|---|---|
| Research Scholars /PG/UG Students | Rs. 1000/- | Rs. 2000 | Rs. 5000/- (Including Accommodation and Food) |
| Faculty from Institutes/Universities | Rs. 1500/- | Rs. 2500 | |
| Engineers from Industry and R&D Organizations | Rs. 2000/- | Rs. 3000 | |

## REGISTRATION LINK

Register using any one of the following:
**1. Use the link below:**
https://forms.gle/n5oTYPYudE9mv96a6
**2. Scan the QR code**