



## Faculty Development Program



**VIT**<sup>®</sup>  
Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

### Discussion Points

**Title :** Trends and Challenges in Implementing Internet of Things for Digital Twin Applications

**Date :** 2024-04-01 - 2024-04-05

**Time :** 10:00 - 17:30

**Venue :** MB111

- Introduction to IoT and Engineering Applications
- Hardware and Software in IoT
- Node MCU ESP8266 in IoT Platforms
- IoT system development using microcontroller
- Data Acquisition and Analysis through Labview
- IoT Protocols
- Applications of MQTT
- AI ML vision
- Digital Twins Application using SIEMENS NX software
- IoT with MATLAB and Industrial IoT with Digital Twins using MATLAB SIMULINK
- AI Foundation with IoT and Case Studies AI, ML, IoT, Robotics
- Industrial IoT and Industry 4.0

	<p><b>Resource Person 1 - Details</b>  <b>Name :</b> Sujatha R  <b>Designation :</b> Associate Professor Sr., School of Electronics Engineering  <b>University/ Company :</b> VIT, Vellore  <b>Address :</b> India, 632014.</p>
	<p><b>Resource Person 2 - Details</b>  <b>Name :</b> Karthikeyan S  <b>Designation :</b> Technical Head, IOBIT  <b>University/ Company :</b> IOBIT Solutions India Pvt Ltd, Bengaluru  <b>Address :</b> INDIA, 1.</p>
	<p><b>Resource Person 3 - Details</b>  <b>Name :</b> Ashok Kumar  <b>Designation :</b> Founding Director , Ensino Research and Development Private Limited Dehradun  <b>University/ Company :</b> Ensino Research and Development Private Limited Dehradun, Dehradun  <b>Address :</b> INDIA, 248001.</p>
	<p><b>Resource Person 4 - Details</b>  <b>Name :</b> Rajasekaran V  <b>Designation :</b> TRAINER, Innovative Invaders Technologies  <b>University/ Company :</b> Innovative Invaders Technologies, Coimbatore  <b>Address :</b> INDIA, 641018.</p>
	<p><b>Resource Person 5 - Details</b>  <b>Name :</b> Pratik Roy  <b>Designation :</b> Software Engineer, Texas Instruments Bangalore  <b>University/ Company :</b> TEXAS INSTRUMENTS, Bengaluru  <b>Address :</b> INDIA, 560093.</p>
	<p><b>Resource Person 6 - Details</b>  <b>Name :</b> Parvathy G  <b>Designation :</b> CEO, Aveon Infotech Pvt Ltd Coimbatore  <b>University/ Company :</b> Aveon Infotech Pvt Ltd Coimbatore, Coimbatore  <b>Address :</b> INDIA, 641004.</p>
	<p><b>Resource Person 7 - Details</b>  <b>Name :</b> Mr Kannan Murugadoss and Mr Promod  <b>Designation :</b> TRAINER, Marconi Technologies Chennai  <b>University/ Company :</b> Marconi Technologies Chennai, Chennai  <b>Address :</b> INDIA, 600032.</p>
	<p><b>Resource Person 8 - Details</b>  <b>Name :</b> Dr Pradnya Gaonkar  <b>Designation :</b> TRAINER, MathWorks India Private Limited Bangalore  <b>University/ Company :</b> MathWorks India Private Limited Bangalore, Bangalore  <b>Address :</b> INDIA, 560103.</p>



**Resource Person 9 - Details**

**Name :** Dr Pramod Kumar Singh

**Designation :** PROFESSOR, IIITM Gwalior

**University/ Company :** IIITM Gwalior, Gwalior MP

**Address :** INDIA, 474015.



**Resource Person 10 - Details**

**Name :** Dr Sanjay Kumar Singh

**Designation :** HOD and PROFESSOR, IITBHU VARANASHI UP

**University/ Company :** IITBHU VARANASHI UP, VARANASHI UP

**Address :** INDIA, 600002.

## **Resource Person's Profile :**

### **1. Profile of Sujatha R**

She has 15 years of teaching experience and has been serving as an associate professor in School of Information Technology and Engineering in Vellore Institute of Technology, Vellore. Organized and attended a number of workshops.

Her area of research interest includes data mining, including data mining applications in human health care, machine learning, software engineering, and image processing.

### **2. Profile of Karthikeyan S**

Mr Karthikeyan is Technical Head (IoT, EDGE AI) of IOBIT Solutions India Pvt Ltd Having experience in the field of internet of Things, Artificial Intelligence, Internet of Things using ESP32 and Embedded C, Raspberry pi and Python, and Lora WAN Infrastructure Development, and Machine Learning with Python.

### **3. Profile of Ashok Kumar**

Founding Director with experience in training industry that involves trainer role, director role, manager role, counsellor role, marketer role and IoT Engineering role since 2016 with technical skills on IoT, PLC-SCADA, Embedded Systems, AutoCAD-EE, PCB Designing, CSS Editor and MATLAB.

### **4. Profile of Rajasekaran V**

Experience in working and as trainer in simulation software MATLAB and LabVIEW, Power flow and fault analysis ETAP, Programming in C

### **5. Profile of Pratik Roy**

As an adept embedded software developer, I possess a fervent desire to utilize technology for real-world problem-solving. My focus lies in the domains of edge AI and IoT, and I have a wealth of experience in working with medical devices, along with expertise in integrating various types of sensors with industry-grade microcontrollers. My proficiency in a diverse range of languages such as C, Embedded C, and C++, coupled with my familiarity with advanced frameworks like MbedOS and RTOS, enable me

### **6. Profile of Parvathy G**

After accumulating vast expertise in the IT domain, Mrs. Parvathi started Aveon Infotech, with a vision to redefine the landscape of the information technology industry and rethink the way at which one would approach solutions such as College Management Systems, Learning Management Systems, Enterprise Resource Planning software etc.

### **7. Profile of Mr Kannan Murugadoss and Mr Promod**

He is authorized Solution Partner for Siemens Digital Industries Software and registered Consulting Partner for Amazon Web Services. We are providing solutions and services related to Product Engineering, Smart Manufacturing, Additive Manufacturing, Cloud Computing, Industrial Internet of Things and Low-code application development platform.

### **8. Profile of Dr Pradnya Gaonkar**

Ms.Pradnya Gaonkar works as an Education Customer Success Engineer at MathWorks India (Bangalore office). In this role, she collaborates with educators, academicians, and researchers across the country to accelerate STEM education, research, and innovation through effective use of MathWorks resources. she has worked in the fields of sustainability and wireless communication for industrial applications at Siemens Technology and ABB Research, respectively.

### **9. Profile of Dr Pramod Kumar Singh**

Dr. Pramod Kumar Singh is currently working as a Professor at Atal Bihari Vajpayee - Indian Institute of Information Technology and Management Gwalior. He has an experience of more than 33 years in academics, research, and academic administration.

### **10. Profile of Dr Sanjay Kumar Singh**

He is working as Professor and Head of the Department, Indian Institute of Technology BHU, Varanasi. His area of interest are Image and Video Processing, Pattern Recognition, Machine Learning, Deep Learning, Data Science, Medical Imaging, Quantum Neural Networks and Biometrics.

Basic knowledge on Internet of Things, Sensors, Microcontroller, Industrial Programmable Logic Controllers are the need of time especially for engineers to apply their knowledge further in emerging areas like machine learning, digital twin, robotics and automation. The proposed program will boost confidence among engineers and technology aspirants by providing overview of basic IoT and digital twin technology along with hands on experience starting from sensors to data collection through microcontroller and data communication over IoT gateway.

Faculty development program will start with introducing hardware and software require for IoT applications and areas of application. The program will continue with the sessions on IoT system development with compatible microcontroller and data analysis followed by some sessions on IoT protocols and AI ML applications in IoT or included, sessions on digital twin and applications will be discussed in the subsequent sessions. The program will be concluded discussing the basic concept and case studies on industrial IoT and industry 4.0.

IoT Kits, MATLAB, ECLIPS, LABVIEW, SIEMENS NX

**Coordinator's: Prof. BIKASH ROUTH 14054 - Assistant Professor Sr. Grade 2 - SMEC  
Prof. SENTHIL KUMAR S 11151 - Professor Grade 1 - SMEC**