Two-Week FDP on Sensor Networks and IoTs
(Sponsored by ICPS Division of DST, Govt. of India)
Department of Computer Science and Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad

FDP Obejective

The growth of the Internet of Things (IoT) is explosive and unsustainable under various applications such as Smart cities, agriculture, health care, industries, etc. IoT is a technology that has deliberately grown momentum and is now silently shaping the future. IoT is the result of humankind s intention and curiosity to lead a connected and convenient lifestyle, reducing the chances of human errors and decreasing labor. IoT is an ecosystem of various interconnected physical objects that are accessible through the internet, and they can be controlled from anywhere. IoTs provide improved process efficiency, proper utilization of assets, and productivity with low-cost. IoT provides deep functionality and broad, connecting the edge nodes to the cloud, so we can build better solutions in various fields using IoT. Wireless sensor network (WSN) is the backbone to the IoTs. Since IoT integrates with machine learning algorithms for the WSNs data, we can make Things or objects smarter, even with/without Internet connectivity.

Course Overview

This course designed with the state-of-art concepts of WSNs and IoTs in two modules, Theory, and Practical. 20% of the course designed for theory, use-case demonstrations, and research-oriented discussion which help to process the remaining 80% of hands-on experiments. In brief this FDP covers Introduction of WSNs and IoTs, Integration of WSNs to IoTs, start-of-art WSNs algorithms, advances in IoTs and its applications, IoT hardware and software and its uses, Theoretical explanation and practical demonstration on various IoT communication, Application protocols, followed by cloud integration, demonstration of practical experiments conducted in our institute, along with various hands-on experiments such as Environment monitoring, Smart home automation, Fire detection, Smart lighting, Water quality check and etc., for the participants.

Who Can Attend ?

Course is open to faculty members/research scholars/PG students from colleges/universities working in the relevant/allied discipline.

How to Apply

- Applicants are requested to download the registration form from
  https://www.iitism.ac.in/~tarachand/fdp1.html
- Send the Scan copy of filled application to tarachand@iitism.ac.in and Hard copy to the following Address:
  Prof. Tarachand Amgoth,
  Assistant Professor
  Department of Computer Science and Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad, Jharkhand, India, pin-826004.
- Mention on top of the cover "Application for Two-Week FDP on Sensor Networks and IoTs"

Course Contents

The course content is designed for the faculty/PhD/PG students to motivate them in learning various tools and techniques of IoTs with Hands-on sessions. Broadly,the course contents are as follows:

- Introduction to WSNs vs IoTs and its applications
- IoT Hardware & Standards
- IoT Communication/Application Protocols
- IoT with Fog & Cloud
- Machine learning for IoT/WSNs
- Demonstration on IoT Project
- Hands-on sessions on IoT Applications
- State-of-art research in IoTs and WSNs
- Other start-of-art topics on IoT

Speakers

Speakers from IITs, Research Labs, Startups and Industries only

Course Outcomes

- Understand the usability of the IoTs across various real-world applications
- Understand and design different application and communication protocols for IoTs/WSNs
- Demonstrate and Hands-on various IoT applications
- Demonstrate integration of IoTs/WSNs with cloud platform and perform data analytics
- Design solutions for several applications using IoTs by integrating machine learning

Participants

- Maximum Number of participants allowed: **30**
- Registration Fee: **Nil**
- Free shared accommodation will provide on prior intimation
- Working lunch, snacks & dinner will be provided
- Travelling Allowance will be provided (Max. Rs. 2000 to and fro, 3AC Train)
- Participants are advised to bring their own Laptops for experiments

Important Dates

- Application Notification: **May 10, 2019**
- Last Date for Application: **May 30, 2019**
- Notification: **May 31, 2019**
- Start of FDP: **June 20, 2019**
- End of FDP: **June 29, 2019**

Organizing by

Venue

Executive Development Centre and Department of Computer Science and Engineering, IIT (ISM) Dhanbad

Contact Information

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