ADVANCED IOT APPLICATIONS

ELECTRICAL ENGINEERING

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IISc Bangalore

TYPE OF COURSE : New | Elective | PG

INTENDED AUDIENCE : Practising IoT engineers.

COURSE DURATION : 8 weeks (28 Jan'19-22 Mar'19)

EXAM DATE : 31 March 2019

PRE-REQUISITES : Computer Network Basics, IoT protocols

INDUSTRIES APPLICABLE TO : Automotive, Industrial

COURSE OUTLINE :

A selected set of applications for the IoT world are introduced. In our topic on first responder networks, we try to build a system to detect human life under a building debris. The sensors and the algorithms designed will be described. Our topic on automotive sector includes sensors such as LiDARs and Cameras used for obstacle detection. Anomaly detection in streaming will be discussed. We also explain some of the current protocols from the Wi-Fi world which have been made suitable for the V2X communication.

ABOUT INSTRUCTOR :

Dr. Prabhakar works as Principal Research Scientist in the Department of Electronic Systems Engg, IISc, Bangalore. His area of work is in Networked Embedded Systems. His research interest is in Energy Harvesting and Power Management Algorithms for sensor networks. The broad spectrum comprises of Modeling, Virtual Prototyping,System Building and Performance evaluation. His current work in LED based communication won the best demo award in COMSNETS 2014. He is currently working on energy harvesting technologies in chip design, indoor localization applications, and other batteryless applications.

COURSE PLAN :

Week 01 : First responder IoT networks
Week 02 : Sensors and protocols for next generation automobiles
Week 03 : Automotive IoT
Week 04 : Speech to text processing
Week 05 : Air quality monitoring
Week 06 : Localization in IoT
Week 07 : Smart energy monitoring
Week 08 : Cargo monitoring