CSE6349: Special Topics in Advanced Networks

Theory and Applications of Internet of Things

Instructor: Prof. Yonghe Liu

Prerequisites: CSE5311, CSE5344

Course Description: The Internet of Things (IoT) are empowered by connected devices at an unprecedented scale, penetrating our daily lives in every aspect. The economical impact of IoT is projected to be on the order of trillions while promising a cyber-physical system with a seamless integration of physical objects, information, and human beings.

This course will focus on the state of art IoT design theory and applications, with a focus on data collection, communication, processing, decision making, and actuation. Starting with traditional lectures covering systematic paradigms on front end physical systems, local/wide area interconnection, and cloud storage and processing, the course will transit to seminars based on paper readings and presentations. The course will conclude with a team based project deployed and verified in real-life environments.

Course Content:

- Sensor based and sensorless sensing
- Embedded systems for IoT
- IoT networking: from mm to miles
- Cloud support for IoT: storage, processing and analytics
- Paper reading and presentations
- Team projects