COMP7570 WSN – eHealth Applications
Instructor
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Overview

A wireless sensor networks (WSN) is composed of many inexpensive sensor and actuator nodes. These low-cost, low power, small scale, and multi-functional sensors can communicate untethered in short distances. Recently, these networks became the underlying mechanism of Internet of Things (IoT). This course aims at focusing the use and applications of WSNs in Healthcare environments. Basic WSN technologies, including network protocols; sensors, actuators, as well as edge and cloud computing will be broadly discussed and the focus will shift onto the use case scenarios of these technologies in eHealth domain.

Objectives

The objectives of this course are to introduce the students to the fundamental topics of this broad area, including (but not limited to):

- Review of underlying technologies for IoT devices
- Work with sensor and actuators in a networked environment
- Programming embedded systems and mobile platforms
- Build RESTful web services on the cloud
- Integration of edge devices to networks of sensors and actuators
- Analysis and visualization of the sensor data
- Use-case scenarios in eHealth domain

Evaluation

The students will be evaluated with the following

- A team project 50%
  - Report 20%
  - Prototype 30%
- A programming assignment 20%
- Participation 5%
- Presentation of research papers 25%

The students will form a team of 3-4 members, depending on the registration. The projects will cover eHealth topics, such as gait analysis or monitoring of older adults in various environments.

COMP4060 students will not have paper presentations, instead, they’ll do a second assignment.

Prerequisite: Instructor approval.

Format

Lectures: M-W 13:00pm – 14:15pm

The course will be delivered online, and is composed of introduction material presented by the instructor and regular discussions over an online platform.