MEng Design Project Announcement – 2018-19 AY

Project title: Fine-grained Activity Recognition through Reconstructing 3D Body Posture using wearable sensors

Brief Description of Design Project Goals:

Overview: Human activities are complicated, which usually involves rich body movements. Distinguishing different activities from body movements can be very challenging without knowing the complete body posture of the person. In this project, you will reconstruct 3D upper-body postures using wearable sensing data. Then use the derived body posture info to recognize fine-grained activities (e.g., eating, drinking, exercising).

Specific MEng Contribution:

The tasks for this project including:

1. Build wearable sensing devices to be collect data at different body positions (e.g., wrist, head, torso).
2. Collect activity data in the wild using the devices and label the data.
3. Reconstruct body postures from sensing data
4. Analyze the data and recognize fine-grained activities using the estimated body postures.

ECE Field Advisor Name: Kirstin Petersen
- Email - kirstin@cornell.edu
- Phone – 607-255-9335
- Office – 324 Rhodes Hall

Outside Field Advisor Name (if applicable): Cheng Zhang
- Email - chengzhang@cornell.edu
- Office – 244 Gates Hall

Number of MEng Students Needed: 3 – 4

Required Skills: It requires skills in hardware prototyping (e.g., 3D printing, soldering), signal processing, and some machine learning.

Estimated Project Time Frame: 2018-19 Academic Year, Two (2) Semesters

If you are interested, please directly contact Prof. Cheng Zhang (chengzhang@cornell.edu).