**Project 1: Wearable EMG for Sign Language Recognition**

Wireless System Research Group (WiSeR) has developed a wearable EMG for fine-grained finger gesture recognition. It has been demonstrated to detect finger movements during typing tasks. The goal of the project is to collect data and develop machine learning solutions to sign language recognition using this platform.

1. Suggested team size: 3 students
2. Expected skills: python programming
3. What you will learn: machine learning
4. Tasks: 1) interviewing sign language experts and people with speech/hearing difficulties; 2) requirement specification, 3) data collection, 4) develop machine learning algorithms, 5) develop user interface

You will be interacting with researchers in WiSeR and guided by Dr. Rong Zheng.
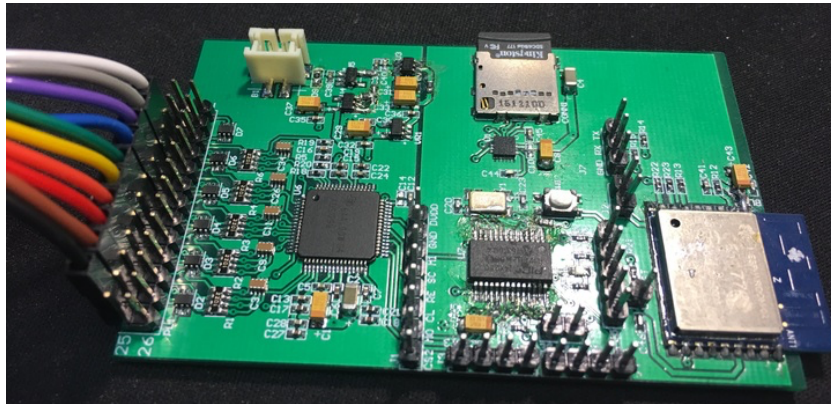


**Project 2: Mobile Crowdsourcing Made Real**

Recently, with the proliferation of mobile devices with rich sensor peripherals and computation capability, mobile crowdsourcing where communities contribute sensing information and human intelligence using mobile devices has gained much interest in a variety of environmental, commercial and social applications. The aim of the project is to develop a platform for exchanging mobile crowdsourced data and dispatching crowdsourced tasks. We use McMaster campus as playground for experimentation. It consists of two parts, 1) a mobile client that extends our current campus navigation app, MacQuest, that provides the ability to push requests to individual's mobile and verify the completion of tasks, and 2) a server backend that stores user profiles, data captured, dispatches requests, and incentivize users.

1. Suggested team size: 3 students
2. Expected skills: Android development, web development
3. What you will learn:
    a. Project management
    b. Data processing pipeline

This project will be supervised by Dr. Rong Zheng and with inputs from Dr. Ruhai Wu from Business school