Computer Science MQP Interests
2015-2016

Emmanuel Agu
Important Notice

- Sabbatical: I will be away in fall 2015
- Will only advise projects in C, D term 2016
- Only students okay with working on MQP C,D term 2016 should contact me
My General Areas of Interest

- Mobile computing/apps
  - Especially health, wellness (eating, drinking, activity)
- Especially intelligent apps
  - Figure stuff out about user
  - Using machine learning algorithms on phone sensor data
Example: Inferring Alcohol levels from Gait

- **Current MQP**: determining how many drinks user had from
  - Phone accelerometer data
  - Human gait analysis
  - Machine learning

- **MQP idea 1**: infer alcohol from smartwatch heart rate? Combine with gait analysis?
MQP2: Predicting Falls

- Old people fall a lot, die from falls
- Current work: detect fall AFTER old person falls
- We want to implement algorithms that
  - Analyze old person’s gait, walking problems,
  - Predict imminent fall
  - Some medical gait algorithms exist (e.g. time to do sit-stand)
MQP 3: Smoking Gesture Recognition

- New smartwatches have accelerometers, sensors
- **MQP**: Detect smoking gestures
  - Record time, location, social context
  - Present to user who wants to quit