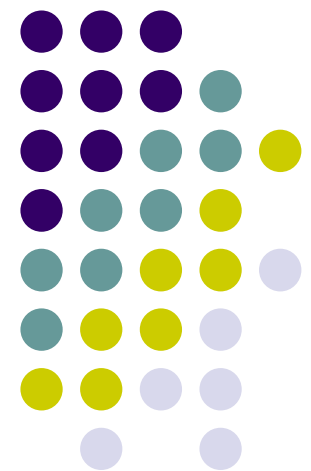


# Computer Science MQP Interests 2015-2016

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**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

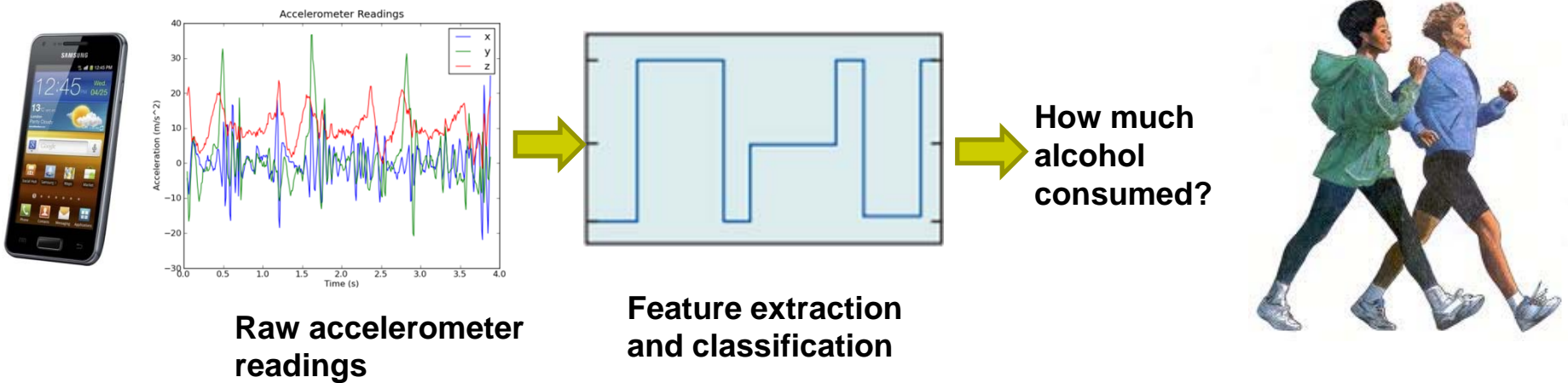


# My General Areas of Interest

- 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

