

ECE180DA : Lab 6 Report

Tasks Planned

- fine tuning and pull request of hand tracker
- gesture recognition (main focus)
 - make labeled data base for one gesture and garbage gestures
 - train classifier
 - create sliding window
 - integrate blocks into gesture recognizer that can print out when gets gesture (can be replaced with triggering event)
- look into use of neural nets for hand tracking (see if that is a more robust option)

Tasks Completed

- hand tracker fine tuned, validated in several different light scenarios and with several different backgrounds (some intentionally trying to confuse the algorithm)
 - item was pushed and merged
 - validation gives confidence in performance for location
 - number of fingers open seems to be an unstable calculation
- mounting solution made for our raspberry pi and IMU
 - allows us to have consistent and robust readings
 - better track the position of the hand (aid our data base creation)
 - also looks pretty cool having a bunch of electronics strapped to your arm
- gesture recognizer progress
 - pushed code for the soft SVM classifier we validated on images
 - wrote script to record IMU readings and create a data base
 - soldered up leds with connectors to act as a indicator when making the database
 - learned GPIO manipulation
 - wrote script to carry out the training on this database
 - currently making final database

- validation on all objects written thus far for midterm
 - mqtt
 - hand tracker
 - gesture recognition algorithm

Future direction

- finish database for gesture recognition
- testing for the gesture recognizer
- make sliding window object
- add event handling to the object so can interface