

ECE180DA : Lab 8 Report

Thomas Kost

UID:504989794

Tasks Planned

- finish database for gesture recognition
- make sliding window object
- add event handling to the object so can interface
- Train classifier
- Validate classifier

Tasks Completed

- Some further debugging on the database creation script (issues with the GPIO pins).
Additionally, noted some extreme delays in ssh speed (raspberry pi would take extremely long to perform pip installs, leading to some delay in actually being able to generate the environment needed to run the script)
- ran database generation script
- Generated 800 sample labeled training data base, denoting between 'garbage' gestures and a 'left swipe' gesture. Also generated separate database for testing data (another 200 labeled instances)
- completed training script (executes running of the soft SVM) so preliminary classification has been completed. Currently, checking on the resulting accuracy and performing validation.
- added to database for flat surface segmentation to train our neural network to identify flat surfaces in the environment
- skeleton code for sliding window object, needs validation but general structure is there
- wrote classifier object to read in pre trained coefficients and classify an event
 - unit tested

Future Tasks

- Finish Validating classifier (in progress)
- final integration of classifier

- unit test sliding window object
- investigate removing sampling time jitter from raspberry pis (there seems to be a difficulty in doing so as the pi's os can suddenly deem some operation more important than my code, so might have to be something we live with)
 - if possible add interrupt based sampling to the sliding window