

ECE180DB : Lab 6 Report

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Tasks Planned

- help team with remaining threading issue in PyQT
- complete SVM classifier
 - install remaining packages since pi got bricked previously
 - run sampler on existing data base
 - modify data-base to include more gestures or remake if the live results are not what we expect
 - add kalman filtering to the loop to help ensure that the data is less noisy and will hopefully provide more distinct features

Tasks Completed

- MQTT Server/Integration
 - reworked the server to integrate acknowledgements with the pyqt framework, as there were some bugs with the current integration and a code restructure was being performed
 - created new testing scripts to reflect the modified public interface
 - integrated final server implementation with raspberry pi controller scripts
- looked into fixing relative imports, some patchy solutions found but nothing worth
- Gesture detection
 - installing dependencies for our SVM classifier on the pi. There is a new issue with Scipy on the updated version of raspbian. As a result Cvxpy cannot be installed on the pi. However, this is not necessary to execute the classifier—only for the training
 - * code restructure to eliminate dependency on cvxpy for the actual classification
 - * more modular
 - * offload training to cpu that can actually perform fast
 - * patched testing script to prevent corrupted csv file from being created from data recording
 - * enforce a given sampling rate
 - * included kalman filtering to provide more stable measurements
- Integration
 - final integration for demo presented with extension
- read through pyqt implementation so can help edit front end issues

Future Tasks

- help team with pyqt integration of any further developed features
 - possibly adding more keystroke actions for allowing better debugging not dependent on audio quality
- complete SVM classifier
 - run sampler on existing data base
 - modify data-base to include more gestures or remake if the live results are not what we expect
 - validate results on generated data base
- film video of state of project as presented on thursday for the ta's