17 May 2017

Time:

1: 45 pm

Duration:

+-45 minutes

Present:

- Assoc. Prof. James Gain
- Assoc. Prof. Deshendran Moodley
- Anna Borysova
- Shaheel Kooverjee
- Erin Versfeld

Excused:

None, all were present.

Summary:

Discussed the proposal and agreed to submit it for feedback no later that the morning of 18 May, with feedback anticipated early the following week. The team should begin generating data sets for themselves for the purposes of getting familiar with data gathering and algorithm training etc. It was decided to use all the alphabet gestures, i.e., both dynamic and static gestures. Pilots should run as soon as possible. Aim to have three techniques implemented (plus one which combines all three) by the beginning of August.

Next meeting:

Wednesday 24 May, 1:45 pm

Points of Action for next meeting:

- **D**
  - email the team a paper introducing the various machine learning techniques, along with a list of suggested libraries and tools for implementing them.
  - put **A** in contact with Andrew
- **J**
  - introduce **S** to Paul.
  - investigate booking an experiment lab for recording pilot data.
- **S** will arrange with Paul to share the use of the Kinect.
- **E** will submit the first draft of the proposal to **D** and **J**.
- **A**, **S**, and **E** will begin experimenting with data capturing methodologies and implementations of their techniques.

Discussion:

- **E** raised issues which needed resolving for the project proposal, namely:
  - Anticipated outcomes

        - **J** indicated that these should be kept to a sufficiently high level and need not be very long. Primarily concerned with system artefacts rather than research outcomes
    - Research question
        - Current phrasing appears to be fine. Must make sure to clarify what is meant by things like “best”
    - Recording test data
        - **D** indicated that it would be valuable having a ‘pre-pilot’ recording of test data to establish the best means of recording the data before entering the pilot stage
        - Recording should happen as soon as possible
        - **J** gave **A** two Leaps so that she could begin and undertook to introduce **S** to Paul around the time of next week’s meeting so that the usage times of the Kinect can be discussed. **E** already has access to a Myo.
        - **J** also indicated that he would be able to look into how the team can go about securing an experimental lab for gathering pilot data
    - Timeline
        - **A**, **S**, and **E** were concerned that there would be insufficient time if exploring more than three algorithms. **D** and **J** agreed, with **D** emphasising the need for a fourth which combined all three. This fourth one will likely be some kind of Bayesian inference, and will probably be applicable for Phase 2 too
        - **D** indicated that he could provide a paper which introduces the various algorithms very well
        - **D** can also advise on implementing Bayesian inference
- The ensemble of devices should look at classifiers rather than data fusion, and should bear in mind the computational cost of these classifiers
- **J** brought up the risks of equipment and backup failure