## 4 April 2017

### *Time:*

12.30 pm

### *Duration*:

+- 45 minutes

### *Present:*

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

### *Excused:*

None

### *Summary:*

* The project must be carefully contextualised as it is situated in a highly political sphere
* Possible avenues in the following domains were discussed:
  + Devices
  + Machine learning
  + Benchmark datasets
  + Context
  + Evaluation
  + Literature review
* J will be away from 14 April

### *Next meeting:*

13 April 2017, 12pm

### *Points of Action for next meeting:*

* **A**, **S** and **E** will do a preliminary review of the literature
* They will decide on the context in which they wish to base the project
* They will agree on possible avenues of investigation
* Their decisions and findings will be discussed in the next meeting

### *Discussion:*

* **J** highlighted the possible devices which could be used to conduct the study, namely:
  + The Kinect
  + The Leap
  + The Myo.
* **J** also highlighted the avenues which should be investigated and background reading which should be done for the purposes of this study. These were:
  + The devices
    - Capabilities
    - APIs
    - Previous uses
  + Computer vision
  + Machine learning algorithms
    - SVM
    - ANNs
    - Bayesian learning
* **D** emphasised the things to take not of when reviewing articles concerning these topics, namely:
  + Lighting
  + Camera angles
  + Position of camera
  + Machine learning techniques used
* **D** highlighted that these common features could be compared in a table to weigh the pros and cons of various approaches when conducting the literature review
* It was brought up that a benchmark dataset would be required
  + **E** pointed out that whilst there were some for other sign languages, SASL specific ones would have to be found
  + It may be necessary to generate this dataset ourselves prior to more formal testing
* **J** highlighted several means of evaluating the performance of the selected algorithms’ performances, namely:
  + Accuracy
  + Precision
  + Recall
  + Latency
* **D** highlighted the need to identify the context in which the project would be framed, namely:
  + Research or system development
  + SASL interface or learning tool for hearing
* **D** pointed out that this context would influence the evaluation strategy used, and suggested other evaluations, such as:
  + Roc curve
  + Cost trade-off
    - Performance vs cost
* **J** emphasised the political context within which this project sits, namely the past extortion of the Deaf community by researchers.
* **D** pointed out that this makes it even more important for us to try and find a SASL dataset which can be used for the project
* **E** suggested getting input from Deaf UCT students, Edwin and his colleagues to help navigate these issues
* For the immediate future, it was decided to focus on the literature review
* In this regard, **J** and **D** both suggested investigating the value in focussing our review and project on one or more of the following angles:
  + Data types (EMG, etc.)
  + Devices (Myo, Leap, Kinect, etc.)
  + The value of AI in this problem domain
  + Tool construction
* **J** indicated that he will be away from 14 - 30 April.
* The next meeting will be held on 13 April at 12pm