Supervisor Meeting

30 October 2020

Time: 1200
Location: MS Teams
Attendees: Darragh, Anthony, Michael, Damien

Introduction We used today to update Damien on the progress we had made throughout the last week. We also set out some goals to aim for for the following week. See below lists.

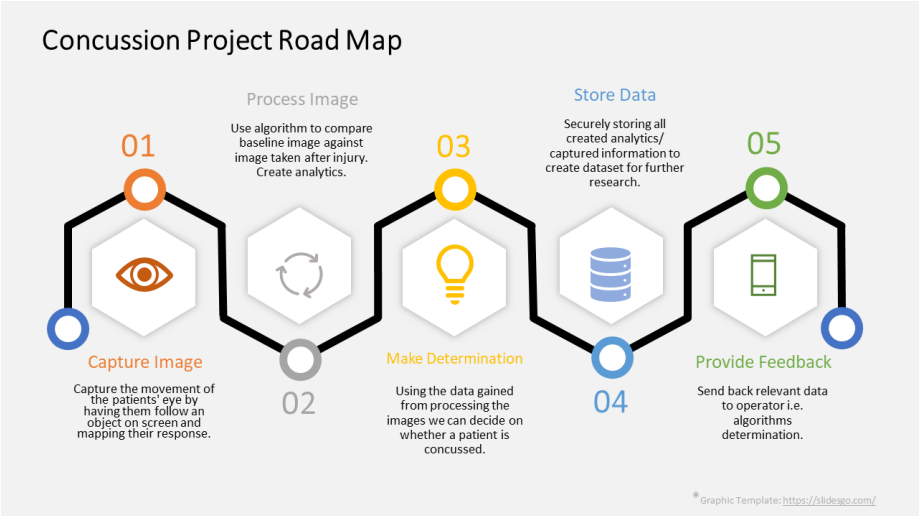
From Us

- In relation to the eye movement capture; we now have the eyes co-ordinates in relation to the screen (x,y) printing to a text file as an array in the form of a string. To this end, it may be a more efficient solution to use these (x,y) co-ordinates to compare against historical co-ordinates to determine an injury.
- Concerns that the starting x,y will differ each use, meaning we would not have accurate data to work off. We have two possible solutions we are considering implementing.
    1. Placing a static target on the device screen for the patient to focus on at the start of each use.
    2. Re-zero co-ordinates from an anchor on patients face every time app is started.
- We are using an older version of Python on a Linux-VM to develop at present. We have two prototype versions on the go.
- We haven't yet found the need for an IR camera. At the moment we are capturing the data through integrated web cameras on our laptop devices.
- We passed on our 'project elements' slides, which describes the project road map as we see it at this moment in time. See below.
- We are to start writing up the 'Research' section of our dissertation this week.

From Damien

- Damien suggested we add some form of patient identification technique to a finished application. For example displaying a photo of the patient we are recording data on.
- Regarding the co-ordinates, Damien suggested that we move the 'static target' to the 0,0 position as possible fix.
- It was suggested that we consider the measurement of the pupils dilation. This was another route we have considered. Our thought is that the current hardware we are running is not accurate enough/ of high enough quality. Not ruling it out at present.
- Damien would like to see us use the x,y co-ordinates we are getting to draw a graph to see what kind of pattern we will get.
- It would be beneficial for us to conduct tests on the co-ordinates under varying conditions.

1 Project Element Slides



- Add new patient – patient personal information
- Baseline eye movement capture – run application on patient under normal circumstances to gather a baseline image for comparison later.

- Capture patient eye movement - In conjunction with standard medical tests
- Record additional information – e.g. Type of injury, answers to Maddocks questions, symptoms etc.

Data Processing

- Server will run the algorithm on the two images generated from an individual patient.
  Image 1 – Baseline image taken when adding patient to database
  Image 2 – Image taken after suspected injury
- Algorithm will compare images and return its determination.
- The result of the processing will be returned to the technician's mobile device.
- This is also where we will create our analytics.

Data Storage

- Our database will store all the captured and created data.
- This dataset could be used in the study of concussive injuries/ head trauma.
- Database will need to be secure – We are dealing with personal information.