MyPAM Meeting 3 Minutes

05/07/19

Present: Justin, Adam, Will, Mitchell

* More people will be joining the project at some point – one individual will be working on adding pronation/supination to the MyPAM joystick for hand-rotation movement. It is unknown when this can be implemented, if it can be this summer.
* Sarah Daniels (manager/owner? of Motion Rehab based in Morley) - Motion Rehab is a commercial rehab clinic for people with motion issues - is coming up to see what progress has been made on the project – probably 2 weeks Friday. This will mean getting a commercial stakeholder (other than the NHS in a way) who will have an alternative viewpoint. We will be more likely to get access to patients in a private setting. We can setup a trial and obtain data for proving the usefulness of the project.
* An issue with ADL (Activities of Daily Living) is that there are 3 levels, incapable, perfectly capable, and somewhere in between. If a patient has improved then they will probably still be on the middle level, so would appear not to have improved. This project will want to demonstrate improvements to the patient and physiotherapist using the metric outputs.
* Logins: we need a central login server so that patients can use their profile on various devices for data logging. One system is not necessarily for one person. There might be multiple patients on one device e.g. in a clinic
* Need to consider data protection, GDPR, general security

**Mitchell**

General:

* Might have turned UDP into TCP
* Created a virtual controller, with data sent from the controller through the software to the “game” he has made
* Has connection detection between the software and the virtual controller / game
* When the connection is lost, the last known game point is sent repeatedly until the connection is re-established
* Discussed the architecture in the meeting
* Joystick workspace will be approximately A4 sized

Actions:

* we want the game to be decoupled from the controller so neither is reliant on the other’s refresh rate
* add an error message output for the loss of connection

**Will**

General:

* Spoke to a speech therapist at the MRI, discussed rehabilitation of stroke patients
* Added options for curved bridges using dozens of intermediate points
* Straight lines currently also have these intermediate points
* The current project design is to have multiple game types, e.g. curves and straight lines. We want the curved line games to provide the intermediate points, but not the straight-line ones as then the device can generate its own trajectory which will mean it will have a more natural velocity curve. Currently we do not have a solution for a smooth velocity curve with curved targets.
* Curved/arbitrary shape games will have intermediate points generated by the game and will treat it like a point to point game but without trajectory control.
* All other game types will be simple start and end points, with the controller generating a trajectory
* Effectively the game will just be sending start and end coordinates to the controller and will define what kind of game it is. Curved games will simply have a much greater density of locations

Actions:

* Look into BASIC (Brain And Spinal Injury Charity), check LinkedIn etc to find out who to approach since we don’t have a point of contact yet
* Make the curved bridges work with the game
* Remove intermediate points from straight line bridges
* Explore more arbitrary curves
* Explore attractors, deflectors, and obstacles
* Continue with uncompleted actions from meeting 2:
* Start sending data (coordinates, timestamp, target position, origin position, level, attempts, etc) to a CSV file
* Explore changing the size of the bridge if the patient is unable to complete the level
* Could provide the option to expand bridges at the expense of points

**Helcius**

General:

* Added more obstacles, levels, story, cutscenes
* We have a working game
* Polishing the game (editing the story, changing the visuals etc) is not essential at this point

Actions:

* Work on integration with MyPAM, this involves:
* Communication protocols
* Having a clearer trajectory around obstacles that the MyPAM can assist with
* Number of rings per level is quite variable, it would depend on time per ring, how engaging it is, lots of factors – this is something that can be done in the polishing phase
* Test out perspective view once the virtual joystick has been integrated
* Other changes will depend on user feedback which will require testing and possibly a larger sample size

**Justin**

Actions:

* Find documentation for sending data to a server, send to Mitchell with code
* Add Mitchell to the GitHub repository ([ll17mjc@leeds.ac.uk](mailto:ll17mjc@leeds.ac.uk))

**Adam**

Actions:

* Send out trajectory document by replying to this email