Print

week 1 meeting

Week 1

Supervisor was unable to have meeting this week. Therefore no meeting was held.

Week 2

Date: 29/09/2023
Meeting start: 12.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week: Conducted lots of research through various papers related to cycling studies and vibrotactile stimulation.

The group introduced each other and discussed with Stephen how the project will be structured this year.
Stephen gave Lewis Arduino parts and asked if Lewis can attempt to construct the vibrotactile helmet. It was not known whether all the parts necessary where given to Lewis - he would need to find that out himself.

For next week:

- Lewis to attempt to construct vibrotactile helmet.
- Lewis to continue research

Meeting end: 12.50

Week 3

Date: 03/10/2023
Meeting start: 11.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week: Started assembling the provided components for the Arduino, however multiple components were missing so could not complete.

Lewis stated he required multiple parts to continue assembling the helmet. Stephen noted parts needed and provided some (such as various resistors). However some parts (specifically a breadboard) is still needed to be obtained.
Lewis expressed his thoughts on what steps the project should take, asking Stephen to clarify what he meant by 'audio classification'.
Stephen explained how audio classification could be used within the project.
Also discussed the potential of conducting a survey for cyclists to express what they would like to see from such a helmet.
Both Lewis and Stephen then attempted to find a breadboard but with no success.

For next week:

- Stephen to acquire missing parts
- Lewis to continue assembling the helmet.
- Lewis to look into creating a user survey.

Meeting end: 11.30

Week 4

Date: 10/10/2023
Meeting start: 11.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Built first version of the circuit with working tactors
- Created a prototype app on MIT App Inventor to control the motors
- Started creating a React Native app.

Lewis stated he had made good progress since their last meeting. He had managed to assemble an initial version of the circuit and had tested establishing a Bluetooth connection via a prototype app he had made via MIT App Inventor.
Stephen gave Lewis a bike radar for him to integrate into the system.
Lewis remarked he hadn't had a chance to think about a user survey yet but would like to get started on that this week.
Stephen and Lewis discussed ways in which the vibro-tactors could be arranged on the helmet to convey different information.

For next week:

- Lewis to start creating an initial user survey
- Lewis to look into how motors can be arranged on helmet
- Lewis to integrate sensor into the system
- Lewis to continue building the app.

Meeting end: 11.50

Week 5

Date: 17/10/2023
Meeting start: 11.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Created most of the user survey
- Established connection to bike radar from react native app

Lewis first talked about his progress on reading sensor data from the Bryton bike radar. He stated he had managed to establish a connection with the radar, but struggled to interpret the data from it. The reasoning was - the data retrieved from the sensor comes as a byte array, where the meaning of each byte relates to some property (e.g. distance of detected car, sensor mode, etc). The encoding of this array is done by the developer and tends to be unique, meaning there is no way of knowing how to understand what each byte means (this is made even more difficult by the fact it is difficult to get the radar to detect anything in the first place).
Because of this, he asked if he could receive the other Garmin bike radar to test with. Stephen stated he could pick this up within two days.
Lewis additionally stated he had almost finished creating a user survey to be distribute to various cycling groups.

For next week:

- Lewis to finish and figure out how to distribute user survey.
- Lewis to test bluetooth connection with other bike radar.

Meeting end: 11.50

Week 6

Date: 24/10/2023
Supervisor was not available for a meeting, therefore no meeting was held this week.

Week 7

Date: 31/10/2023
Meeting start: 11.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Added all 4 motors to circuit
- Deciphered bike radar data and continued with app
- Started interim report

Lewis began by commenting on Stephens comments on Lewis's user survey. Lewis said he agreed with the comments and would make the necessary changes.
Lewis and Stephen discussed if ethical approval is needed for the survey. Stephen said most likely not as any personal information collected is optional. Nevertheless, Lewis will look at the Ethics checklist to make sure.
Lewis discussed how the bike radar does not provide data for what angle a detected threat is arriving from. Therefore, he would like to change the helmets design so that only threats directly behind the user is accounted for, and proximity is communicated via a straight line of tactors.
Stephen discussed the possibility to run a separate lab study to test different vibration mappings to see which is the most effective before a real-world user study.
Lewis stated that he would like to mainly continue working on the interim report.

For next week:

- Lewis to check ethics checklist and distribute user survey.
- Lewis to continue working on interim report

Meeting end: 11.45

Week 8

Date: 07/11/2023
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Continued with interim report
- Gathered results from user survey

Lewis began by commenting on the results from the user survey. He passed on some initial comments from the survey to Stephen - discussing some results.
Lewis states he is still to properly analyse the user survey in greater detail.
Stephen mentioned again about planning a lab-based study comparing different vibration styles. Lewis agreed he would like to do this.
Lewis stated that he would like to mainly continue working on the interim report.

For next week:

- Lewis to continue writing interim report.
- Lewis to properly analyse user survey.

Meeting end: 13.35

Week 9

Date: 14/11/2023
Supervisor was not available for a meeting this week, therefore, no meeting was held.

Week 10

Date: 21/11/2023
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Continued with interim report
- Refactored code on app

Lewis began by discussing his progress on the interim report. One again stating that he would like to mainly continue working on this
Lewis also mentioned refactoring the code of the app so that it is better built.
Stephen mentioned not to leave planning the lab-based study too late - Lewis agreed.

For next week:

- Lewis to continue writing interim report.
- Lewis to plan lab-based study.

Meeting end: 13.35

Week 11

Date: 28/11/2023
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Continued with interim report
- Thought about lab-based study

Lewis began by discussing his thoughts on what the lab-based study should entail. He discussed with Stephen various variables they could measures, and asked for help refining the study. After some discussion, Lewis stated that he would continue to think about the study and would try to have a plan written up.
Lewis also stated that the interim report was going well.
Finally, Lewis showed Stephen the app he had been working on to control the bike radar and vibro-tactile motors. This app had all the basic functionality required to start implementing vibro-tactile cues.

For next week:

- Lewis to continue writing interim report.
- Lewis to plan lab-based study.

Meeting end: 13.50

Week 12

Date: 05/12/2023
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Continued with interim report
- Planned out lab-based study

Lewis began by explaining his planned out lab-based study - sharing what he had learned by researching studies investigating how rhythm has been used to code distance. Stephen agreed that it seems like a good idea.
Lewis continued that he had been making good progress with the report and will try and give a first draft to Stephen by the end of the week.

For next week:

- Lewis to send Stephen interim report draft

Meeting end: 13.35

Week 13

Date: 12/12/2023
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Continued with interim report

Meeting took place online over Zoom. Discussion with Lewis entailed discussing his progress with the interim report, which we had mostly finished, with just minor changes to make.

For next week:

- Lewis to submit report

Meeting end: 13.30

Week 14

Date: 09/01/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster

Meeting began with discussing any progress made over the Christmas holidays. Lewis explained his plan for this semester, starting with conducting the lab-study. Stephen suggested he create some sort of plan for it for next week.

For next week:

- Lewis to write up plan for lab-study
- Lewis to start coding necessary cues for study.

Meeting end: 13.30

Week 15

Date: 16/01/2024
Meeting start: 13.10

Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis created page on app to control the motors in depth

Lewis showed Stephen his progress on his app, which can now control various aspects of a rhythm, and has encoded various commands and schemes. Lewis and Stephen discussed different encoding schemes and narrowed them down to six potential schemes for study. Lewis suggested that for next week, he has a participant-brief written, and the actual helmet prepared.

For next week:

- Lewis to have detailed plan for lab-study written up
- Lewis to attempt to have helmet built.

Meeting end: 14.00

Week 16

Date: 23/01/2024
No meeting this week.

Week 17

Date: 30/01/2024
Meeting start: 13.05
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis created brief and debrief for lab-study
- Lewis constructed helmet

Lewis showed Stephen the working helmet which included a demonstration to control the vibration motors from the app. He stated that he still has some final planning to do for the lab-study, but the study should commence by latest a weeks time.

For next week:

- Lewis to have started conducting the lab-study

Meeting end: 13.50

Week 18

Date: 06/02/2024
No meeting this week.

Week 19

Date: 15/02/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis midway through conducting lab-study

Lewis discussed with Stephen current results which had been obtained from the lab-study. Stephen also suggested than Lewis starts to plan the user-study as to not leave it too late.

For next week:

- Lewis to finish lab-study

Meeting end: 13.45

Week 20

Date: 20/02/2024
No meeting this week.

Week 21

Date: 01/03/2024
Meeting start: 14.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis finished lab-study

Lewis started by stating that he had just finished conducting the lab-study, with a total of 20 participants. Lewis and Stephen discussed plans on how to proceed with the user-study. Stephen sent over previous studies.

For next week:

- Lewis to have written plan for user study

Meeting end: 14.20

Week 22

Date: 05/03/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis mid-way through writing up user study plan

Discussed exact parts of the ethical permission checklist, including how to alter experimental design so it was more efficient. Most important thing to do for next week is to get ethical permission to perform study.

For next week:

- Lewis to have gained ethical permission for user study

Meeting end: 13.40

Week 23

Date: 14/03/2024
Meeting start: 16.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis gained ethical permission for user study

Discussed ways in which to improve the design of the helmet. Also discussed exactly what data is being collected. Steve also helped Lewis with some further analysis of the lab-study data. Lewis said he has also been working on his final diss.

For next week:

- Lewis to redesign helmet and test our TactiHelm on real roads.

Meeting end: 16.30

Week 24

Date: 19/03/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis attempted to test TactiHelm

Lewis stated that he had redesigned the helmet and had tested it on roads. However, a part of the helmet broke and so he is currently waiting for a spare part to arrive.

For next week:

- Start getting participants for study

Meeting end: 13.40

Week 25

Date: 26/03/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis wrote large part of diss and had a few participants.

Discussed current data so far for user-study. Lewis to continue with writing diss.

For next week:

- Finish user study and show Steve draft of diss

Meeting end: 13.40

Week 26

Date: 02/04/2024
No meeting this week.

Week 27

Date: 09/04/2024
Meeting start: 13.00
Present: Lewis Trundle, Stephen Brewster
Progress since previous week:

- Lewis completed most of diss

Discussed various parts of Lewis's dissertation.

For next week:

- Finish the project!

Meeting end: 13.40