

## **EE/CprE/SE 491 WEEKLY REPORT 1**

**1/18/22 – 2/6/22**

**Group number: 14**

**Project title: Machine Learning for Human Biometrics**

**Client &/Advisor: JR Spidell & Professor Akhilesh Tyagi**

**Team Members/Role:**

**Ron Mei Hang Teoh - TBD**

**Nathanael Morris - TBD**

**Yee Shen Teoh - TBD**

**Zi-Jan Wong - TBD**

**Ritvik Maripally - TBD**

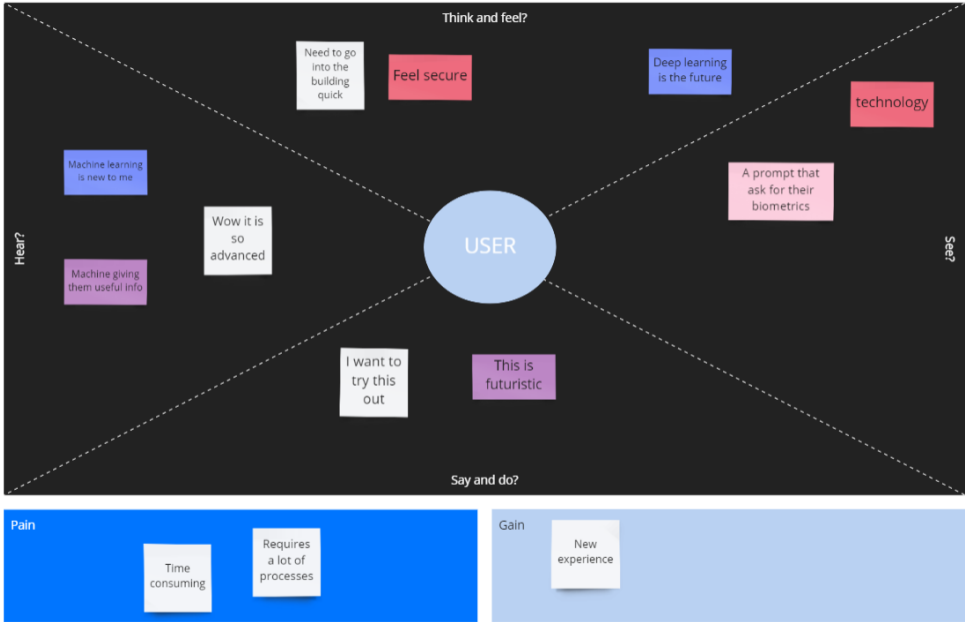
### ○ **Weekly Summary**

The objective for this week is to connect with our advisor and client, and start thinking about the general ideas for this project. Our advisors gave us some tips and ideas on what our projects should look like, and we had scheduled a meeting with our client for the coming monday to discuss expectations and requirements of the projects. We also worked on design thinking on the Miro link given by professor Rachel Shannon.

- **Past week accomplishments** *(Please describe/summarize as to what was done, by whom, when and, collectively as a group. This should be about a paragraph or two in length. Bulleted points are acceptable as well. Please keep only your technical details related to your project. Figures, schematics, flow diagrams, pseudocode, and project related results are acceptable, but please ensure that they are legible (clear enough to read) and to provide an explanation. If researching a topic, please add a few details about what was learned and how it is relevant to the project. If two or more people worked on a single task, be sure to distinguish how each member contributed to the task. Specific details relating to the assistance provided to other members may be included here. **Do not include classwork, such as individual reflection assignments, and group meetings as part of your duties.**)*

- Contacted and had our first meeting with the advisor, Professor Akhilesh, via Zoom meeting.
- Contacted and will be having our first meeting with the client, Spidell, via Zoom meeting.
- Attended Design Thinking workshop held by Nick Fila.
- Worked on Empathy, Define, and Ideate part in Miro Board.
  - Empathy:

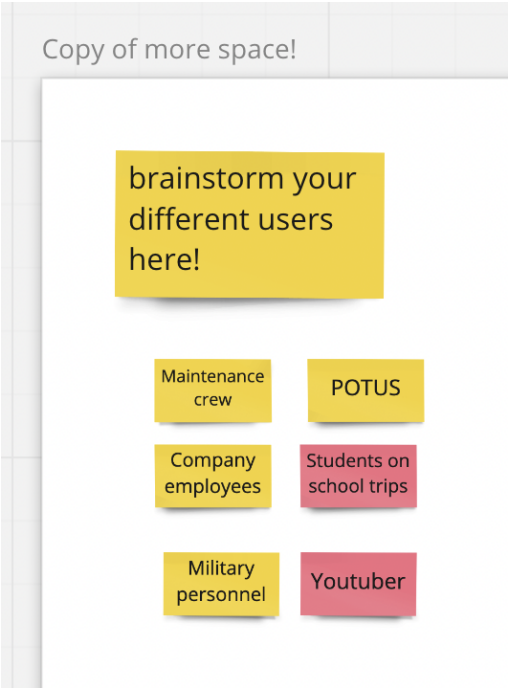
Ron and Zi-Jan worked on the Empathy part of the Miro Board:



Screenshot of the Ideate Section of the Miro Board

- Empathized how users would think, feel, see, hear, say, and do about machine learning for human biometrics.
- Came up with the pain and gain of machine learning for human biometrics.

○ Brainstormed users:



Screenshot of different potential users

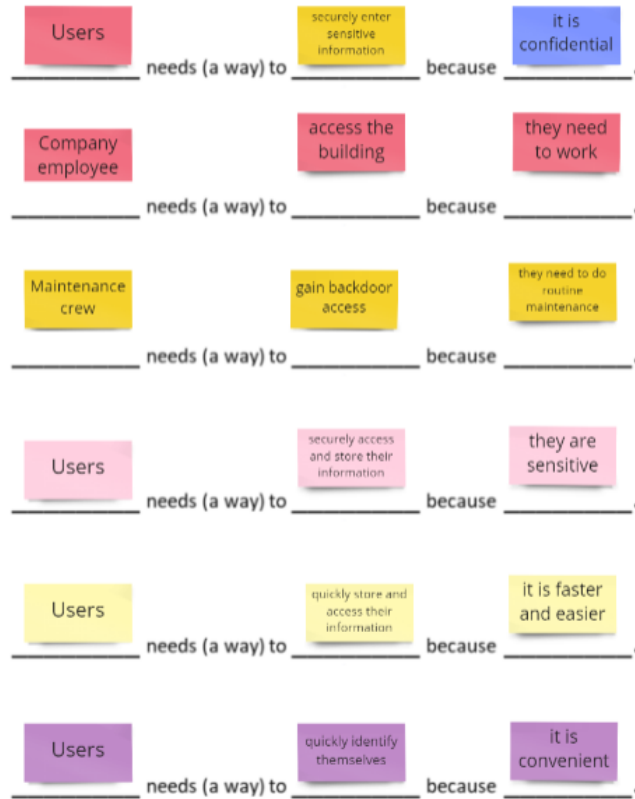
- Maintenance crew and company employees are most likely going to use the system very often, if not every day.
- Other users such as military personnel and the President of the United States

might be rare, but still possible since our client is from an aerospace company, which sometimes relates to national security.

- The user Youtuber is just a random idea being thrown in since we are still at the brainstorming stage. A Youtuber might a one-day access to the factory/facility to film a short video or documentary.

- Define:

Ron and Zi-Jan worked on the Need part of the Miro Board:



A screenshot of the Define Section of the Miro Board

- Defined the different needs of user, their goals and reasons.

- Ideate:

Zi-Jan worked on the Ideate part of the Miro Board:



<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b> <i>(Quick list of contributions. This should be short.)</i>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Ron Mei Hang Teoh	Miro Board (Empathy, Define), Researched Collins Aerospace, Researched Machine Learning, Uploaded Report Template to Google Docs	6	6
Nathanael Morris	Design Thinking workshop, Miro Board, Researched Machine Learning	6	6
Yee Shen Teoh	Design Thinking workshop, Miro Board, team discord meeting	6	6
Zi-Jan Wong	Design Thinking workshop, Miro Board (Empathy, Define, Ideate)	6	6
Ritvik Maripally	Design Thinking workshop, Miro Board	6	6

○ **Comments and extended discussion**

We have not yet met with our client, since we are meeting with them a day after this report is due, 2/7/2022. We will not know the requirements and constraints for the project until that meeting.

○ **Plans for the upcoming week** *(Please describe duties for the upcoming week for each member. What is(are) the task(s)? Who will contribute to it? Be as concise as possible.)*

- Ron Mei Hang Teoh: I am going to research the potential users of our project and narrow them down so that we could build a project that meets their requirements.
- Nathanael Morris: I am going to continue researching machine learning and start working on what our client wants us to do.
- Yee Shen Teoh: I am going to work on design thinking for our project. Also, I will get started on researching and getting familiar with machine learning.
- Zi-Jan Wong: Researching on machine learning and work on what our client's requirements and constraints.
- Ritvik Maripally: Keep on researching and seeing what I can incorporate cybersecurity knowledge into this project (more planning).

○ **Summary of weekly advisor meeting**

During our weekly advisor meeting, we talked about contacting our client to set up a meeting to get started with our senior design project. During that meeting, which is going to be on Monday, February 7th, we will figure out the requirements and constraints for our project, and also we should discuss deadlines for certain aspects of the project. These requirements should be as

quantitative and specific as possible to determine if we have met this requirement.

Our faculty advisor also recommended that we research what kind of biometrics we will be working on. Will we be working with identification EKG to determine stress, what kind of sensors are being used, and what kind of data will be collected?

We also talked about the weekly time commitment that we should put into the project. For each group member, we should spend around 6-8 hours on the project per week, which will amount to 30-40 hours per week being spent on the project from our entire group.

### **Grading criteria**

Each weekly report is worth 10 points. Scores will be awarded as follows:

- **8 – 10:** Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.
- **6 – 8:** There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.
- **< 6:** Please talk to instructors/TA after class hours about any difficulties that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.