

**CPRE 491**

**Team 45**

**Project Title: Prototyping and Testing Embedded Machine Learning in an Application**

**Date: 10-03-2021**

### **Weekly Report #1**

#### **Members: (With team roles)**

- Amy Wieland: Project Manager
- Tyler Ingebrand: Project Manager & Machine Learning Manager
- Nathan Bruck: External Hardware/Arduino Manager
- Yi Ting Liew: Task Board Manager
- Sean McFadden: Machine Learning Manager
- Nayra Lujano: Research Manager
- Chris Hazelton: Security Manager

#### **What we've accomplish in the past week / what we've been researching:**

- Amy: Researched existing software that could be used for machine learning speech recognition for one of our potential application ideas, contributed to the team presentation for requirements that we presented in class
- Tyler: Created a PPT for machine learning general info, did the required presentation
- Nathan: Researched a robotic platform suitable for walking machine learning applications. Researched locking mechanisms for a voice controlled bike lock. Researched and presented engineering standards associated with our robotic platform.
- Yi Ting: Researched on understanding more about Machine Learning as well as searching examples of walking robots; did a presentation in class on Tuesday.
- Sean: Researched how audio is processed for speaker verification models for potentially implementing a voice-detection bike lock.
- Nayra: Presented in class on Tuesday for the required presentation, researched machine learning to get a more solid understanding of what the project is entailing. Watched and worked toward a class on machine learning that was recommended by Dr. Rover, as well as attending as much as the Imagine 2021 event.
- Chris: Researched security aspects of the possible speech recognition bike lock project. Also attended and presented the required slides on our presentation on Tuesday.

#### **What we are planning to do in the coming week (short 1-2 sentences on what you will be doing):**

- Amy: Finish lightning talk audio, eng standards essay contribution
- Tyler: Finish lightning talk audio, eng standards essay contribution
- Nathan: Finish all assignments due this Sunday. Gain more knowledge on machine learning through Coursera and a book, "Machine Learning: Hands-on for Developers and Technical Professionals". Research the communication requirements for the Arduino/Raspberry Pi and the peripherals on the robot dog.
- Yi Ting: Finish lightning talk audio, continue with research on ML application

- Sean: Finish lightning talk audio, do more research on reinforcement learning to get a better understanding on the topic.
- Nayra: I am planning to finish up the assignments for this course including the lightning audio talk, the weekly report and the requirements and constraints document. I will also work on completing the coursera class Dr. Rover suggested for us to complete so I can ensure I have enough understanding of machine learning to feel comfortable.
- Chris: Finish the lightning talk audio, do more research on machine learning and check out any security aspects of the dog robot we chose

**Issues or concerns we had in the previous week (will be brought up in a meeting for a full conversation):**

- Amy: No issues at this point
- Tyler: None
- Nathan: None
- Yi Ting: None
- Sean: None
- Nayra: None
- Chris: None