EE/CprE/SE 491 WEEKLY REPORT 2

Date Span:
    Feb 8th - Feb 15th
Team:
    sddec19 - 17
Project:
    Goose Chaperone
Client/Advisor:
    Dr. Randall Geiger
Team Members:
    Johnson Phan
    Weston Berg
    Alec Morris
    Woodrow Scott
    Zhihao Cao

Summary

The goal for this week was to research the components necessary for this project. This included researching the following areas: controller boards, robotics platforms, identification software, camera and IR sensors, and legal issues with the project. All of these areas were successfully researched.

Accomplishments

Over the past week team members individually worked on the following:

Johnson Phan:	Researching three main development boards to choose from. Raspberry Pi, MSP430, and Arduino.
Weston Berg:	Researched if a pre-built robot is feasible or we should build our own Researched the advantages and disadvantages of wheels vs. treads Initial research of what is needed for building a custom robot
Alec Morris:	Researched legal issues with the project. Found the Migratory Bird Treaty Act of 1918. Did further research and found some new constraints for the project and how we are legally able to interact with geese. Also researched existing similar products, there weren't really any high-quality ones available.
Woodrow Scott:	Researched 3 embeddable image recognition libraries. The Tensorflow library looks like it would be best, in terms of performance and training time.

Zhihao Cao: Researched 2 sensors. First one is PING distance sensor to measure the distance between object and sensor. Measure range from 2cm to 3 meters. The second one is the High sensitivity enable detection of Stationary Human Presence and it measure the temperature of the object.

Time Contributions

Team Member	Hours Contributed	Cumulative Hours Spent
Johnson Phan	4	8
Weston Berg	4	8
Alec Morris	4	8
Woodrow Scott	4	8
Zhihao Cao	4	8

Client Meeting

The team met with Dr. Geiger, who is our team's client and advisor, to discuss the teams research into the project areas listed in the summary. Dr. Geiger was pleased with our progress in the research areas and gave some suggestions/insights into the controller board he suggests should be used for the project.

Future State

In the coming days team members will work on the following:

Johnson Phan: Researching MSP430 development board. How to connect to analog Sensors and digital sensors. Check for larger flash memories.

Weston Berg: Research robot platforms customizable to our needs and within budget Now that pre-builts are out of the question I can focus my research

Alec Morris: Research robot "arms" that will be usable for the for the project. Will also look into mimicry from said arms while also keeping in mind the legal aspects of the project.

Woodrow Scott: Will be researching emulators for the MSP430 and RAM upgrade options to test the viability of each option, and research requirements for writing software to the device. I also plan to play around with tensorflow.

Zhihao Cao: Research image sensor or scanner that could obtain image data to help identify goose.