Journal Report 9
11/11/19-11/15/19
Hari Shanmugaraja
Computer Systems Research Lab
Period 5, White

Daily Log

Monday November 11

I got an intel edison board from Mr.Kosek. I also did my presentation towards the end of class. Tony began to gather supplies to begin controlling steering servo through an Arduino wired up to breadboard with buttons. Went to Mr. Bell to get resistors and buttons from the Electronics lab.

Wednesday November 13

Tony got his button-based wheel controls to work, and is now working on replacing the buttons with a potentiometer. I am currently working on using a website to control the car, but I am running into some issues with installing packages that I need to run a web server on the edison. Will try to continue wrestling with the javascript libraries, express, and npm, but will fall back to flask and python if this continues. Thinking about uninstalling node and npm and installing a fresh version with scp.

Tony wired up a circuit to steer the car with 3 options: full right, full left, and center. Wrote a program using Arduino so that the steering direction would print on the screen. Started looking into using a potentiometer so we could steer using more than three discrete options. Mr. Bell helped us out here by helping us pick out a potentiometer with the right distance by looking at the data sheet for the chip on the Arduino. Found some sample code online that will make an LED flash at different rates based on potentiometer input.

Friday November 15

Tony wrote a program to steer car based on potentiometer input. Tested it on the car and wired the potentiometer onto the breadboard next to the two existing buttons, so we could alternate between the two steering modes we created this week. We were able to use a power bank to power the Arduino, and walk around the commons with one person controlling the speed on the Traxxas remote, and another following behind the car with the Arduino and breadboard. A drawback of this setup is that you have to walk closely behind the car to steer it, since the wires from the breadboard are linked to the servo.

I got npm installed and upgraded on the edison with the help of John B., but although express installs, the .js file says that express can't be found.

Timeline

Date	Goal	Met
Today minus 2 weeks	Have the car navigate a hallway on its own with hard coding	Yes/No, the car can controll its own steering, but we have no way of conrolling its throttle yet
Today minus 1 week	Have the Raspberry Pi gather Lidar data	No, we have not started
Today	Have the Raspberry Pi gather Lidar data	No, we have not started
Today plus 1 week	Find a way to gather camera and Lidar data at the same time	No, we have not started yet
Today plus 2 weeks	Find a way to gather Lidar, camera, steering data, and throttle at the same time	No, we have not started yet
WINTER GOAL	Have training data gathered from the lidar, steering, and camera, and format it all in one array or csv, so that it can easily be fed into a neural net	No, we have not started yet

Reflection

JavaScript on the Edison was practically useless until this week. With the help of John, I got npm and node fixed and updated. When I went to install express however, it worked, but was not recognized by the program. Although I have already invested time in this, I am thinking about ditching the edison, and putting the express server on the PI, and then having the pi provide a less specific signal to the arduino which in turn provides a precise control to the pi. With this methodology, we will have two different boards, but it may simplify our method of reaching our winter goal.