Journal Report 7
10/18/19-10/25/19
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Daily Log

Friday October 18

We finally got the Pi connected to the internet, via an Ethernet cable after John B. helped us configure some stuff. We can now instll packages with pip and push our code to GitHub from the Pi. We also finalized our turning servo code. It turns out that we did not need to loop through duty cycle values. As a result, our code is much cleaner, with three methods for left, right, and center, that all take in a time parameter to determine how long we hold that wheel position.

Monday October 21

We fixed a problem with the front right wheel on the Traxxas. A piece of metal holding the tire to the frame was bent so we went to the Robo Lab and straightened it with the help of a vice grip.

Wednesday October 23

Started working on controlling the speed with the Raspberry Pi. We are having some trouble figuring out how to wire the Raspberry Pi with the Electronic Speed Control and radio. It looks like the signal is part of the circuit putting out power. The battery is wired to the ESC, which in turn powers the radio. We tried to read in values that the radio was getting when we pulled the trigger on the transmitter, and we got a bunch of 1s and 0s as we expected, but we can't seem to find a pattern in between the pulse widths.

Friday October 25

Continued working on controlling esc, but to no avail. Tony tried some new wiring and killed the Raspberry Pi permanently (R.I.P). We wired the Traxxas Radio voltage into the Pi and fried the board. We let Mr. White know and got another unused one from the Syslab.

Timeline

Date	Goal	Met
Today minus 2 weeks	Hook up the Pi to the Rustler, and write a program to steer the car from the Pi.	Yes, we have a system that has been tested to satisfaction
Today minus 1 week	Have the car move on its own via the pi interfacing with the esc	No, we have tried but made little progress
Today	Have the car navigate a hallway on its own with hard coding	No, we have not started we meed the previous step to be completed
Today plus 1 week	Have the Raspberry Pi gather Lidar data	No, we have not started
Today plus 2 weeks	Build a program where we throw a object in front of the car and avoids the obstacle	No, we have not started

Reflection

We have now pretty much finalized how we will control the steering with the Pi. We are struggling a lot with getting the ESC to work though. If we do not get it by class on Wednesday, we may need to seek help from someone more knowledgeable with robotics, perhaps Mr. DC. I changed our timeline to include a week where we try to have the car navigate a hallway all by itself with hard coded instructions. I included this step, so we would have more cushion time, if we do not have the ESC working by the end of this week, and to get familiar with how the car controls based off of the values we give it.

The next two steps are rather large, and depending on how unlucky we are, we may have to write our own code for connecting to the Pi. This may prove to be extremely difficult, or it could only take a class period. We will most likely have to adjust our near goals depending on how things go.