Journal Report 15
1/20/20-1/27/20
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Daily Log

Wednesday January 22

Got recordtrainingdata working reliably. We realized that we can force the LIDAR usb to be USB0 and arduino cable to the pi to be ACM0 if we plug both in with the Pi unpowered and then connect the power cable to the Pi. When we got it running, it got about 3 cycles (500 lidar points and 3 data points from the arduino) before it started slowing down. So we thought it was something to do with the subprocess, so I changed how we end each LIDAR subprocess using subprocess.terminate(). The data gathering program now works as we intended it to, except we still haven't found a way to completely end the LIDAR program within recordtrainingdata. Instead, we have another program we wrote a while ago called lidarpi, which just runs the LIDAR's included ultra_simple program through python. If we want to end recordtrainingdata and get the sensor to stop spinning, we just run lidarpi.py and then end that, which will stop the LIDAR sensor.

Hari also got the XBees to send messages to each other. We can choose which messages we send, and when we send the message. Next class, we plan on using this methodology as a wireless controller to guide the car while we log our training data.

Friday January 24

Tony was sick. I worked on a program to integrate the Xbee radio with the collecttrainingdata.py file.

Timeline

Date	Goal	Met
Today minus 2 weeks	Find a way to gather Lidar, steering data, and throttle at the same time	Yes
Today minus 1 week	Have our data logging program work reliably	No, but have been able to narrow down where our problem is coming from
Today	Make the collection of data wireless using the XBees	No, but have been able to send sample strings back and forth using the XCTU software
Today plus 1 week	Make the collection of data wireless using the XBees	No, but have been able to send sample strings back and forth using the XCTU software
Today plus 2 weeks	Make the collection of data wireless using the XBees	No, but have been able to send sample strings back and forth using the XCTU software

Reflection

This week, we have refined our process to the point where we can launch our training data collection script reliably, and on command. This was an important milestone, as now, we can move on to the next part, wireless integration. If we can control our car wirelessly, and send along how we are controlling it, we will be able to record what the car is doing while we record what we tell it to do. The next few weeks will be focused on developing our wireless control methodology.