**Friday, March 15th, 2024**

I secured the wiring on the car using zip ties so that when the car moves, everything wouldn’t come apart and stop working. To do this, I tied down the I2C multiplexer board to the wooden mounting plate and also tied down some extra long wires which were getting tangled up in the wheels. Then, I turned on the car while it was on the floor. The Nvidia Jetson board automatically connected to the router that I set up and I was able to access it by connecting my laptop to the router as well. Once I did that, I could remote-control the car through the web interface hosted on the Jetson.

I quickly found that the steering and throttle limits I had put in while the car was still on the stand were way off. I had to run at full throttle in order to get the car to crawl forward. While this is a safe behavior, it’s not good for RL where we want a smooth response for throttle 🡪 velocity. Thus, I bumped up the maximum forward and reverse throttle so that the car would start moving (very) slowly when a throttle of +-0.2 was applied. Next, I tuned the steering. The left steering limit and right steering limit I had put in resulted in the car turning slightly to the right when the steering value was 0. Through some trial and error, I found a left/right limit which let the car turn symmetrically both left and right and allowed the car to go in a straight line when steering = 0.

Once I had got the basic setup, I re-connected the other components which I had removed when I had disassembled the car. First, I re-connected the camera, and verified the camera livestream appeared in the web interface. Next, I re-connected the lidar, and ensured that the data was still streaming.

**Monday, March 18th, 2024**

I worked on setting up the reinforcement learning code to test. I first want to test the reset() method, which will drive the car back to a set, known position. My first attempt at doing this will simply replay back the last N steering/throttle commands, where N is the number of timesteps since the last reset. To do this in python, I created a deque which stores the commands, and then popped them off from the right, inverting the throttle value so that it will go backwards.

**Wednesday, March 20th, 2024**

All seniors were on a field trip in DC.