**Monday, April 22nd, 2024**

I continued working on my presentation. I added slides giving context to the problem of self-driving cars and the basics of reinforcement learning.

**Tuesday, April 23rd, 2024**

I continued working on my presentation and completed an initial complete slide deck. I added slides about the improved reinforcement learning process using the autoencoder as well as slides talking about the physical car

**Wednesday, April 24th, 2024**

Austin was attempting to get the car working and needed some help with getting the right Python environment. I helped him out and tried running the code I ran at home. It worked perfectly fine, except for one problem. I had calibrated the throttle values based on driving on carpet. However, it was now driving on a smoother surface in the Syslab. Thus, the wheels skidded, causing the motor to reach its maximum instantaneous current draw (200A) and burning out the ESC rated for a [max current draw of 50 A (18 A continuous).](https://www.hobbywingdirect.com/products/ezrun-18a-sl-esc) Thus smoke was released and I quickly turned it off. However, now the car will not move, so a new ESC will be needed. The VESC motor controllers are available, but since I already spent months trying to interface with them with no success, I think getting a better version of what is already on the car would be suitable.

Thus, I looked for a motor driver which can drive the max allowable current from the motor. Of course, I never intend to run it at this current (it would go much, much too fast), but a higher-rated ESC will prevent the risk of smoke. Furthermore, it will overheat less. I already saw the current ESC overheated after a few minutes of continuous normal usage. I found an ESC rated for 80A continuous and 480 A peak, which should be more than enough even for worst-case scenarios. (The old 18A controller worked fine over spring break, so I am confident that under normal operation the motor draws much less current). Dr. Gabor informed me it would come by next week at best.