AutoDrive Project Weekly Report - October 5th

1. Fails of the week

We accidentally burned the raspberry pi on board of the car due to some wiring issues. We had to buy a replacement. This is a good lesson to keep replacement parts in storage when the hardware components fail and needed to be replaced. Redundancy is perhaps not what we need given the small scale of our project, but we should be prepared for hardware failure and a hasty recovery from the failure.

2. Successes of the week

We have successfully identified and established a roadmap for our project and a general timeline for our deliverables as follow:

Fall: Prototype setup and minimum viable prototyping

- By December 13th, 2018, assemble a working car prototype with ability to steer itself along a track

Spring: Additional features and more advanced autonomous control

- By February 15th, 2019, the prototype should be able to detect traffic signs.
- By March 15th, 2019, the prototype should be able to maneuver around hindering obstacle on the track.

In addition, we have positive feedback from Darryl Williams at The Franklin Institute who may become another sponsor. If things goes well, we will have an opportunity to put our car at a display at the museum when the project finishes. In addition, we have finished re-wiring the car motor and servo onto the raspberry pi and we are able to control the car from the pi.

3. Difficulties this week

Given that we only have one copy of the hardwire, it is difficult to divide the tasks of implementing the hardware-software interface without the access to the hardwire. However, we discussed the role of simulator in training our neural networks, and concluded that our team role should be assigned to either software simulation (training and testing deep learning models) and realization on the hardware (control and transfer learning).

4. Goals for next week

- Explore simulation platform including CARLA and research on existing related projects
- Implement hardware-to-software interface in controlling the car's steering