During the summer of 2017, Michael and I had this crazy idea of making a self-driving golf cart. Both of us were inspired by new techniques in the fields of machine learning, and we wanted to apply these in the real world. After about six months of programming and two months of engineering, our vehicle can drive autonomously on certain roads and can also avoid obstacles.

The vehicle relies on computer vision and deep learning technologies to navigate. The cart relies on a camera to understand the world. Instead of explicitly extracting features from the video feed, we developed and trained machine learning models to implicitly learn from human driving data. Then, the software can apply that knowledge to control the golf cart.

We also modified the steering system, throttle, and brakes on the golf car. The brain behind the vehicle, the NVIDIA Jetson, along with two Arduinos control these systems electronically. More specifically, the modifications included: designing and making a specialized steering column, tapping into the accelerator’s potentiometer, and motorizing the brake system.

We would also like to express our deepest gratitude to everybody who supported us during this project. We look forward to continuing this in the months to come.