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SENIOR DESIGN

Self-Assessment

My senior project was a bit unorthodox as it ended up taking a path that I wasn't anticipating to be a sink for my time. As I was a solo project, I was naturally in charge of the entirety of the workload whilst juggling classes and part-time work. Last fall I identified the languages and software I would need to become familiar with to succeed: SourceMod, SourcePawn, Tianshou (deep RL library), RCBot2, and the Valve Developer SDK (C++). I felt confident entering the project due to my background in Source-engine games, having worked with the Valve SDK previously.

While I was prepared to dedicate most of my time into developing my Python and RL skills, I was unable to due to the greatest obstacle of my project: Needing to update an old modification for modern architecture. For a majority of the project timeline, a defective environment prevented a necessary connection between all the parallelly running applications necessary for my initial project proposal to be achievable. Feeling as if my project had been upended, I dedicated my time to manually updating an old modification to be functional in a post-updated Team Fortress 2.

The pivot from researching PPO (Proximal Policy Optimization) reinforcement learning to digging through defunct forums and Discord servers to try and edit nearly twenty-year-old C++ and SourcePawn code was an unwarranted change to my plan. I feel more confident in not only my C++ project knowledge, but my system engineering skills as well. This project became managing multiple applications to create a functioning process. Whilst the goal of a TF2 playing robot was not met, the success of updating Metamod:Source to function in a modern TF2 environment was a resounding success; meaning that the prospect of a TF2 playing robot is very possible and a project I would like to pursue further.