For my EE I first tried finding a topic about game development. I began thinking about doing it on object pooling, a technique I used while making a game in Unity to improve performance. I researched a bit about the requirements and the scale of the Extended Essay and decided it wouldn’t be very fitting, although possible.

Later I looked at machine learning as a general subject I can do my EE on and remembered a TED Talk I watched a year prior. The TED talk was about machine learning algorithms designing machine parts from scratch automatically, given constraints and requirements. Even though I didn’t have deep knowledge about machine learning I wanted to my extended essay on the topic to actually learn about the topic.

As I discussed the topic with my teacher in the reflection session my teacher told me that this could make a good extended essay topic, however I should be careful about how I handled the subject to make sure it fits with the EE criteria.

As I did more research on machine learning algorithms designing machine parts, I realized the technology was much more experimental than I thought. Although there were some Autodesk products I couldn’t find anything I could easily test or any sizeable research I can talk about. However, I stumbled upon an EE topic by luck while I was trying to make another game. The game was about drawing shapes on a phone screen to cast magic and my own algorithms weren’t very good at detecting shapes. So I did research.

After my initial research, I found the $P Recognizer algorithm as the most suitable option for me. It was simple to implement and, according to their research, quite accurate. I changed my research topic and question based around this algorithm.

In the interim session, I talked with my teacher about how I will test the algorithm myself, as their own research had limitations about the specific shapes they used, and their effect on the algorithm.

Before doing my EE, I had never very closely inspected an algorithm about how it was designed. I learned a lot as I read research about various shape recognition algorithms, including the $P, and how they were developed.

Also I was surprized that for some algorithms finding the big O value was quite difficult. The version of $P I used in my paper for example, doesn’t have a clear big O value but something between O(n) and O(n3). So I didn’t include it in my paper.

My research did raise a lot more further questions. I talked a bit about using internal and in between variance to see predict how a gesture set would perform. However, although I had clear results for my other variables, I saw that I would need a much bigger research to be able to draw conclusions on these two factors. I think I may do research about this specifically when I go to university.