Binh Luong
CS5001
Professor Annexstein

Capstone Assessment

For my senior design project, I have grouped up with four other students, three being computer science majors and one being a computer engineering major. Together we plan to develop a VR glove, hand gesture-controlled RC car. My primary focus is the construction and testing of a DIY haptic VR glove, utilizing what I have learned from UC's computer engineering curriculum to make the necessary changes. Even though I have some experience with hardware, this project will have me step out of my comfort zone using new tech I have yet to use in a classroom like motors and potentiometers.

As a computer engineering major, I have dabbled on both sides of the line between hardware and software so I believe that this will assist me greatly in the development of this project. The construction of the VR glove requires both knowledge of hardware circuitry and utilization of arduino firmware. Once the general construction of the glove is finished, I will be able to assist in the developing necessary changes in the firmware to fit the parameters of the project. There seems to be a few ways we can implement communication between the glove and RC car so I will need to adjust accordingly to meet the needs of the project.

All of my coops have been at FOX Sports for QA Software Engineering for web api's, so I don't think it's extremely helpful on a technical level. On a fundamental level, I've acquired many skills such as communication and teamwork, which will be extremely important here to stay on task. From a quality assurance standpoint, I've come to understand that there are an infinite number of ways one can see, process, and tackle a problem. There's also an infinite number of ways we can make or break a product so I believe that insight will be handy when it comes to testing and ensuring the project works to its full potential.

To be honest, this all started from a goofy idea that sounded like a lot of fun but the more we thought about it, the more we saw the potential it had in real world applications. I also feel that this was a good opportunity to really work on something that interests me and will challenge me down the road. This project meshes both hardware and software together, giving me the chance to test my grit as a computer engineering major, which to me feels better than doing something that was solely electrical or solely computer science.

My approach for this project has been gathering the necessary materials and constructing a DIY haptic glove that I was interested in making before, but didn't have the time nor tools to make the necessary parts (a 3D printer to be exact). With my time at UC, I came to learn about 1819 Innovation Hub where UC students could have access to 3D printers and print whatever they needed. Once I construct and test the glove using my Quest 2 VR goggles, I will be moving to help my teammates in researching a way to bridge the communication between the RC car and VR glove.