CS 5001

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Assignment 3 – Individual Capstone Assessment

The idea for my group’s project is data visualization in esports, with an emphasis on UI/UX. My partner Colin Conn and I share an interest in every facet of this project, so we’re both very excited to learn new skills and leverage our unique experiences to develop something we’re proud of. We envision a web application that uses 3D rendering to display gameplay data from one of the games for which UC has a competing team – likely Overwatch, CS:GO, Valorant, or Rocket League. We would ultimately like to deploy our application on a live site hosted by the UC Esports Club, with a public set of data available for viewing as well as private access for UC team members to view and analyze their own data. The public data may act as a showcase of not only our project, but the club and their Esports Lab facility in the 1819 Innovation Hub as well. I have a lot to learn before we can bring this project to life, but I can safely say I’ve never been more enthusiastic about such a large undertaking.

My background for this project is somewhat unorthodox, in that I am a computer engineering major with effectively no development experience who wants to use this project as a portfolio centerpiece as I pivot my career towards software. As such, the number of courses that I’ve taken which are directly applicable is limited. I have taken the standard run of programming courses for CE majors (EECE 1080C Programming for ECE, EECE 2080C Engineering Data Structures, EECE 4038C Advanced Data Structures/Algorithms) and feel that I have a strong core understanding of programming. However, I don’t have significant experience with languages other than C/C++, and I have only a beginner’s grasp of secondary development skills (ex. version control with Git). I definitely feel like I have a lot of catching up to do compared to my partner Colin. What I am confident in is my ability to learn quickly and build on the foundational knowledge I do have. For example, while I have never worked with or developed a database for a web application, I have taken multiple courses on data structures and understand the concepts necessary – I just need to put them into practice.

Similar to my academic experience, my past co-op rotations are not perfectly suited to this project but have given me the base knowledge and confidence I think I’ll need to be successful. I worked 4 of my 5 rotations with GE Aviation Systems, with the first two being on embedded software teams. For my first rotation I worked on integration and testing for platform software, which involved working with Jenkins test automation software and gave me experience setting up and working with Linux machines while also exposing me to some basic networking. My next role was in high-level testing of flight management software using VB .NET scripts, which gave me more of a taste of working with developers and their code but was still separated from any actual development work. This development-adjacent work has given me a deep look into the software development lifecycle – especially as it pertains to aviation – and taught me all of the soft skills needed to work effectively on different teams and across disciplines. Most importantly, I learned while working for GE to learn by doing, and to constantly stretch myself and my skillset. This will be essential for every stage of our project.

The goal that Colin Conn and I have had since partnering together is to structure our project around new skills we can build for the future, rather than focusing on leveraging our existing experience. We both want to use this project as a way to showcase our ability to learn and use skills applicable to the kind of work we’d like to do, helping us to pivot towards career paths we’re interested in. The subject of the project is also something that we’re both passionate about, and leaving a working and useful app for the Esports Club would be incredibly fulfilling. With all of this in mind, we’re both extremely motivated to put our best foot forward. We’re also both very aware that this is going to be a big task for only two people, so we’ll need to be careful to pace ourselves and our work if we’re going to deliver something impactful in the spring.

The focus areas for this project will include game data acquisition, database development and management, user experience and interface design, and 3D application development. These are roughly in chronological order in terms of how I expect we’ll tackle things, but I also expect some parallel work to occur. For example, Colin may work on the UI/UX design while I focus on developing our database implementation. We plan to meet on a weekly basis with our advisor Dr. Aurisano, and will be setting weekly progress goals with feedback from her. We will likely also create a larger project management plan soon to make sure our long-term trajectory is in line with the final product we’re shooting for. Our general goal right now is to have a prototype app with major functionality completed by the end of this semester so that final development and deployment can be our focus in the spring. Ultimately the success of this project will hinge on whether the Esports Club and corresponding team(s) find the tool we create useful. We not only want it to be something the players enjoy using, but also something that’s worth using.