Josh Miles

Individual Capstone Assessment (Assignment 3)

Senior Design

Professor Annexstein

From my individual academic perspective, my team’s senior design project is a great opportunity to bolster my skills. While the scope is mostly ambiguous at the current moment, I foresee the project being incredibly valuable for learning new tools that I can use transitioning out of college and into my future careers. The idea is essentially to code an application that captures gym traffic data and provides analytics and information for gym owners / gym staff. The way by which this data will be captured is probably going to be motion/human recognition through cameras in the gym. The app will also feature a user interface where gym-goers can locate vacant areas of the gym in order to save time in their workout routines and busy schedules. The project should be a great opportunity to learn how to integrate my code into a program that works in tandem with a camera, among other items.

The development of this project will be guided by steady task management and aided by my academic experiences thus far in my college career. In year 5 of my pursuit of a bachelor's degree in computer science, I have taken several courses that have given me experience in different programming languages. The computer science courses like CS2011 and CS1100 have provided a base of understanding for which to start. The course CS3003 has provided an overview of the key differences and nuances of different programming languages both dynamic and static. Overall, my coursework has given me small bits of experience in a variety of programming languages – some being C++, python, java, etc. It is hard to say which programming languages we will be using and for what, but time will provide better insight.

The development of this project may or may not also be guided and aided by my coop experiences. In all 5 of my coop experiences, not one was focused on software development, coding, or anything related to computer science. The work that I did in my first 2 coops was IT technician related work at Cincinnati Insurance Co. The 3rd coop was independent research on this very project, which could prove to be quite useful in the outline and general concept design. It was during this time that I discovered how this implementation could realistically solve a real problem that the UC rec center has. My final 2 coops were in project management at EMCOR Facilities Services. While project management does teach some useful skills in collaboration and leadership, I am unsure how relevant these skills will be in the development process. My 5 coop experiences may not aid in the development of the product very much, if at all.

This project excites me quite a lot because of a few different factors. For one, it solves a very real problem that many others and I have identified in large gyms and commercial gyms. Properly implemented solutions to problems are rare and valuable – this is another key factor in the motivation for this product. If it is developed properly and in accordance with our vision, it has very apparent grounds to be sold as a fully-fledged product. As stated earlier, it will also provide a fantastic opportunity to learn new skills. These skills, along with our completed project, should catch the eye of company recruiters and provide career opportunities.

The preliminary approach for implementing this solution should be relatively simple. Firstly, we need to create a database where all the raw data will be stored/sorted. We will create a front-end user interface, a backend, some sort of elementary program that works with a camera for person-tracking, and possibly a website. It is already known that cameras can recognize faces. The project could eventually be steered in a more malicious direction to meet consumer needs/demands. Generally speaking, however, the product could be taken in many different directions. I expect to have a functioning prototype by the end of the two terms. We will know the project is complete when the concept either gets sold to a large corporation or when we hit all of our action items. This will be a lengthy endeavor and my team, and I will likely continue to work on the product well after the terms have come to a close.