

Individual Capstone Assessment

Christian Galang

For my group's senior design project, we're creating a medical mobile application to assist users with remediating muscle soreness in various parts of the body. The issue this project is facing is primarily within the field of fitness, although muscle pain can also be a result of stress, diet, and sleep. This is a medical issue that everyone faces, and this application will hopefully serve as an accessible mode for medical information needed to relieve muscle pain. From my academic perspective, this will involve research in medical areas such as physical therapy and orthopedics. Additionally, from a technical perspective, this will involve a large deal of mobile app development with both front-end and back-end development aspects. A large portion of this project will exist in the research and design phases to optimize the UI/UX of the application.

In my curriculum as a Computer Science major, multiple courses have trained me in technical skills that will be utilized in this project. User Interface I (CS 5167) will be especially helpful in front-end design and development of the application's interface. The design process I learned in this class will also pair well with the project planning and implementation process I learned in Software Engineering (EECE 3093C). I am also currently taking Applied Leadership of Project Teams (ENGR 6016), which will be valuable in playing my part as a strong leader and team player in this project. In terms of backend support of the application, the courses Data Structures (CS 2028C) and Database Design and Development (CS 4092) have taught me the technical skills needed for storing and retrieving the application's data in an optimal manner. Finally, the course Introduction to Effective Speaking (COMM 1071) was helpful in developing my presentation skills, which will be utilized towards the end of this course.

My co-op experiences have also taught me a significant amount that will help me perform well in this senior design project. In my first co-op, I was at Kinetic Vision as a Machine Learning + Training Data co-op. In this role, I created dashboards in MS Power BI displaying data to analyze the output of a synthetic data generation tool. Through this project, I learned to create effective interfaces that will transfer over into designing the front-end of this application. In my second co-op, I was at Honeywell Intelligrated as a Software Engineer co-op. In this role, I made various changes to product code by practicing Git and learned to work in an Agile development environment. I will continue to practice version control with Git in this senior design project. In both co-op experiences, I learned to work effectively in small development teams with various roles, which I will apply to this new project team.

I've been interested in doing a medical related software project for a while, so I was thrilled when my senior design group decided to pursue this project. It's a project that has real applications to help anyone with issues in muscle soreness and potentially other areas that require physical medical attention. Additionally, I have personal motivations in doing this project since my partner is a nurse, which will likely prove to be helpful when fact checking any provided medical information. I'm also highly interested in developing mobile applications since it is such an accessible format. My personal project of developing an educative AP Chemistry mobile application is also accommodating to my knowledge of app development. It's also motivating for me to work in a group of highly skilled members of various engineering

disciplines, as it will be an experience to see how our various perspectives add to the quality of this project.

For this project, my preliminary approach in the application's design is considering all its use cases. This includes who will use this app the most (Patients undergoing physical therapy? Athletes? Seniors?) and how do they want to use it (Relieve pain? Retrieve medical information? Track physical therapy progress?). Therefore, before designing the application, a research phase is necessary to understand what people would find most helpful in this app. At the end of this project, my expectation is that we've produced a user-friendly medical mobile application that users will find helpful in treating muscle soreness. I believe a huge accomplishment would be for it to be made publicly available (if permitted financially). Self-evaluation will be conducted informally throughout this project by comparison to the other members' contributions. My assessment of doing a good job relies on the other members' peer assessments.