Shane Reilly

CS5001-001

Individual Capstone Assessment

My senior design project will be a testament to the skills I have acquired during my time at UC. Not only will it require the technical skills that I have learned in class and on the job but will also require me to branch outside my comfort zone and learn about new tools and technologies I have little exposure. This will require the most important skill I have gained here at the University of Cincinnati: learning how to learn. As a software engineer, one is constantly exposed to new cutting-edge tools and techniques. The field is rapidly changing and embracing a learning mindset at all times is of critical importance. Undertaking new projects and welcoming challenges helps you grow.

My academic experience will greatly assist me in the development of this project. I believe some of my lower-level programming courses, such as Operating Systems and Compilers will help bridge the gap between the hardware and software elements of the project. For any programming project, a through grasp of Data Structures and Algorithms is essential to writing clean, performative code. My experience in those courses will no doubt come in handy. Furthermore, I believe the Networking course I am currently taking will benefit me in brainstorming ideas for and implementing the communication protocols that we will use to be talking to the device.

I believe my past co-op experiences will also come into play throughout the course of this project. My very first co-op was a reverse engineering role at Radiance Technologies, in which I gained a good grasp of looking at unfamiliar code and figuring out how it works. This will be very handy in looking at the solutions to similar problems and seeing how we can apply similar techniques to our problem. My other co-op experience was a more standard software engineering role at CADTalk, in which I gained exposure to good software engineering practices and learned how to properly write good unit tests. This got me in the habit of writing clearer, more easily testable code. I expect these habits to benefit me in writing the software components of this project.

I am excited to work on this project as it is outside my comfort zone. I feel I will learn a lot about the hardware/software interface, embedded programming, and wireless communication protocols. These are areas in which I am interested, but do not feel as though I have fully explored. This will allow me to grow as a programmer/developer and really round out my skillset. Working with a group will also put me out of my comfort zone. I typically prefer working alone and collaboration is not my strong suit. It will take some concerted effort on my part to be a team player.

I believe we will go through many iterations in getting this project to work. Much like writing a paper, there will be a rough draft. Then, over the course of these two semesters, will slowly inch closer and closer to a final product by solving various problems and optimizing what is working. I will know when the job is done when we have a reasonable version of our initial goals. I am sure there will need to be design compromises to be made. I can’t necessarily predict what they will be right now, but when the time comes the team will need to discuss and weigh the associated tradeoffs.