**CS 499 Professional Self-Assessment**

In March of 2019, I took my first steps toward a major career change. Not an easy thing to do for a father and husband. I have worked as a commercial electrician for 20 years in nearly every capacity: master electrician, foreman, project estimator, project manager, etc. I knew that to be successful in the computer science field, I would need more than just my dedication and hard work ethic. I would need professional training, a degree that shows I am capable, and a willingness to commit to a lifetime of learning. Over the course of my time in the Computer Science program at SNHU I have been pushed harder than I ever have been before. I have also pushed myself farther than I ever have before. I have gained more than just knowledge of programming in Python, C++, and Java. I can do more than just create class diagrams, collect user stories, query databases, and troubleshoot network connections or programming errors. I can now look at practically any real-world problem or business need and imagine a software solution for it.

Over my time spent in this program I have worked on many different types of projects. I have learned to collaborate on projects by working with classmates and my professor on a jukebox application. For this project, we were all assigned a portion of the program to work on and then commit to the master branch in our version control system (Bitbucket). This project showed me the value of version control, commit messages, branches, and pull requests. A new level of attention to detail arises when working collaboratively on a project. I also gained experience in the SDLC (Software Development Life Cycle) by collecting user stories, working on design with class diagrams, implementing code, testing code, etc. One of my favorite, and most difficult, courses required us to build a 3D rendering of a picture we took ourselves of three different objects resting on a plane. Here we used Visual Studio and OpenGL to build shapes using triangles, create a plane for the objects to rest on, position and control camera movements and set lighting all within C++ code. I had the chance as well to work with assembly language in my Software Reverse Engineering class. By breaking a program down into its basic components, and then recreating that program myself, I gained a more seasoned understanding of just why we use things like classes and methods in our programs today.

For my CS 499 Capstone course at SNHU, I created an ePortfolio that is a testament to the newfound skills and knowledge I have acquired during my time in this program and serves as evidence that I am now equipped to begin a professional career in the Computer Science field. Looking through this ePortfolio, will show how I will be a valuable asset to any software development team. In effort to best portray the breadth of my computer science knowledge, I have taken a program I created in a previous class and performed enhancements to it across three categories of professionalism in software development: Software Design & Engineering, Algorithms & Data Structures, and Databases. My process began with a code review of my original program that can be found on YouTube [here](https://youtu.be/IwnrzGqmY8c). In this review, I describe the structure of the original program as well as identify areas for improvement. I also touch on the enhancements that I went on to make in the areas of data structures, decision loops, iterators, input validation, security improvements, and databases. More detail on the enhancements and their benefits can be found in the narrative included in the ePortfolio on GitHub. The original code as well as enhanced Java program are also available for you viewing in the ePortfolio. I am confident that upon exploring the included artifacts in this ePortfolio, you will be convinced, as I have been by it, that I am ready to take the valuable skills I am now a proud owner of and put them to work for you. Thank you for taking the time to read this intro! Happy exploring!