**CS 499 Self-Assessment**

My Computer Science Program taught me many skills that I will use to advance my career in Information Security. My ePortfolio showcases my experience with the Python programming language, collaboration tools such as GitHub, and code review practices. The artifact enhanced and presented in my ePortfolio allowed me to expand, not only the code functionality, but also my knowledge in programming capabilities such as data mining. Prior to pursuing my degree, I had no experience or training in programming, so this was a new world for me. Throughout the two years of my degree, I gained an invaluable understanding of how to write data structures and execute algorithms to complete specific tasks. Completing my Capstone further expanded my experience and refined my skills in the Python language, as well as how to navigate and manipulate databases efficiently. I also developed software in the C++ language that rendered images on a screen that were also interactive. My project resulted in a 3D chair with wooden textures complimented with shadows and positioned lighting.

As I developed programs throughout my journey, I sometimes had to rely on peer reviews and accept critiques of potential improvements to my programs. This exposed me to using GitHub for collaboration. Specifically, the team updated a preexisting jukebox program to incorporate their own personal playlists. The peer reviews ensured we worked together to prevent breaking the main program, while supporting each other on their additions. Using GitHub taught me the importance of communicating changes through comments and messages before committing those changes. In addition, it showed me the benefits of having local and remote repositories, especially when more than one person is working on a single program.

The artifact in my ePortfolio is all inclusive, as it is a software program engineered to query and modify data within a Mongo database. The algorithms and data structures used in the program include logical loops that allow a user to select menu options to complete specific tasks within the database. In addition, the design allows the user to confirm modifications to the database, as well as exiting the program or continuing to a new task. Before the additions of these loops and options, the program strictly ran through every function defined in the code and was limited to certain datasets within the database. After making these improvements, the user can now do broad queries and changes as many times as desired. It expanded the capabilities of the program and enables the user to be more efficient in their tasks. Further, the design allows the ability to add functions that could be used for security, such as access controls that take login input before proceeding to the menu.