**Professional Self-Assessment**

My experience in this computer science program has been enlightening. When I first enrolled, I only had a little programming knowledge and the data analysis skills taught to me by the military. I learned something new from each class I took. As I progressed throughout the program, I discovered how each class used concepts from previous classes and built upon them. I’ll provide examples on the topics of team collaboration, communicating with stakeholders, data structures and algorithms, software engineering and databases, and security. I’ll also explain the different artifacts that are in my [ePortfolio](https://sacruffnex.github.io/CS_Capstone/).

Team collaboration and security were merged after I took Southern New Hampshire University’s (SNHU) CS-310 Collaboration and Team Projects course and managing a shared Excel file to organize and collect data. The CS-320 course taught me how to collaborate with others when they’re working different hours and/or are geographically separated. The course used Bitbucket and Eclipse Git to collaborate with everyone in the class. Knowing how to use each of these greatly increases our ability to complete projects while also creating the best product. The shared Excel file fosters collaboration but also focuses on security. I limit the read and write ability to only those with a need-to-know. By restricting the file to specific people, the sensitive data is more secured. Possible compromises can be narrowed to those people.

Communicating with stakeholders is something I do for my job and the importance was reinforced after taking SNHU’s CS-250 Software Development Software. As a data analyst I produce regular reports and conduct special studies based off of organizational data. These products are delivered to lateral organization’s leadership as while as my own. They help inform and allow those in leadership positions to make data-driven decisions to better their organizations. The software development course demonstrated this by holding meetings with the business’s customers. The feedback received was then incorporated into the program. If the meeting with the customers didn’t take place, the end product wouldn’t have been as useful to the customer and wouldn’t sell. Both of these examples establish the importance of communicating with stakeholders because the usefulness of the end product is based off of their input.

My data structures and algorithms skills were strengthened by SNHU’s CS-260 Data Structures and Algorithms. The course taught me different search algorithms such as binary trees and linked lists. I learned how different search algorithms operated and how their Big O notation affects speed and scalability. I had an idea of how different algorithms worked, how long they took and the computer’s resources they used but didn’t have any knowledge on them. After taking the class, I have created different programs with those aspects in mind and made them more efficient, scalable programs.

For software engineering and databases, I created a product for my job. The product is extracting data from a relational database, altering the data and displaying key performance indicators in graphs. I had to learn the database schema and how each table interacted with each other. Once I figured out the layout, I determined the simplest way to alter and display the data. The tradeoff I had to make was ease of maintainability for automation. The main thing I was thinking of was how to maintain the program when I leave the position. Creating this program bolstered the skills I learned throughout this program. Whether it was a relational or flat database, learning how data was stored and how to extract it has helped me during my career.

The three artifacts in my ePortfolio are from SNHU’s IT-145 Foundation in Application Development, CS-250 Software Development Lifecycle and DAT-220 Fundamentals of Data Mining. They demonstrate my skills in software design and engineering, algorithms and data structures, and databases. Each of these skills are fundamental to the computer science field and knowledge in them have given me a strong foundation for which to build upon.

The artifact from IT-145 is a program for the Luxury Ocean Cruise Outings Company to coordinate cruise bookings. This program only allowed for adding and printing to the console. I updated this by adding in edit functions that represent a more complete program. This involved diving into the code and creating new algorithms.

The artifact from CS-250 is a program for SNHU’s Travel Company that is used as a booking tool assistant. The program displayed the top five wellness destinations with a description and location of each. I updated this by incorporating feedback received from the initial meeting with customers that wasn’t reflected in the end product.

The artifact from DAT-220 is an analysis for the Bubba Gump Shrimp Company. The analysis is to provide recommendations for increasing website sales. I updated this analysis to provide recommendations to increase restaurant and third-party retailer sales by demographic and geographical location. The analysis used data that wasn’t implemented in the original dataset and include data from the United States Census database.

Each course taken throughout the program has greatly increased my knowledge and skills in the computer science field. Not only have I learned these skills, but I’ve been able to implement them during my career. I’ve had the belief that one should never stop learning and formal education is one method to accomplish this. My journey through this program has motivated me to continue my formal education and to earn my graduate degree. I believe an undergraduate degree gives an individual a strong foundation but a graduate degree will provide expertise in a specific field. My goal is to make a significant positive change and I believe the knowledge gained from a graduate degree will help achieve that goal.

The artifacts are located at the following link – [Kyle’s GitHub Artifacts](https://github.com/sacruffnex/CS_Capstone) (https://github.com/sacruffnex/CS\_Capstone)

My main GitHub README is located at the following link - [Kyle’s GitHub Artifact Page/README](https://github.com/sacruffnex/CS_Capstone/blob/main/README.md) (https://github.com/sacruffnex/CS\_Capstone/blob/main/README.md)

My GitHub page is located at the following link - [Kyle’s GitHub Artifact Descriptions](https://sacruffnex.github.io/CS_Capstone/) (https://sacruffnex.github.io/CS\_Capstone/)