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Professor Phillips

CS – 499 Computer Science Capstone

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During my time at SNHU, I have been able to gain so many skills and tools tailored to my degree in Computer Science and to my personal development. Over these past four years, I have learned the ins and outs of the Software Development Life Cycle. I have developed strong skills in programming, debugging, and problem-solving, as well as experience working with different programming languages, frameworks, and tools. I have also learned how to approach projects from the ground up—starting with planning and design, moving through development, and ending with thorough testing and deployment. Beyond technical skills, I’ve grown in areas like collaboration, communication, and time management, which are just as important in the field.

The coursework and projects I have completed throughout my time have been the catalyst for my technical growth. From learning how to solve problems by creating proper algorithms and selecting the right data types in my Data Structures and Algorithms course, to building coded visualizations in my Computer Graphics and Visualization course, each experience has pushed me to think critically and creatively. These projects not only strengthened my coding skills but also helped me understand how to apply theoretical concepts to real-world problems. Like with all experiences, you discover what you’re good at and what you enjoy doing. During this course, I found myself leaning toward the data side of computer science. While software development is rewarding, I discovered a real enjoyment in cleaning, manipulating, and analyzing data to answer real-world questions.

Working in collaborative environments was also a big part of my learning. Group projects taught me how to break down work efficiently, track progress, and merge contributions without conflict. I’ve also had to clearly communicate with stakeholders—both technical and non-technical—ensuring that requirements were understood and solutions met their needs. My exposure to databases and software engineering practices allowed me to design systems that are both functional and scalable, while my security coursework reminded me to approach projects with a “secure by design” mindset, integrating protections from the very start rather than as an afterthought.

The artifacts in my portfolio bring all of these skills together. They range from software engineering projects to algorithmic problem-solving challenges, as well as data cleaning and analysis, visualization work, and full stack development. Each artifact was chosen to highlight a different area of expertise, but collectively they demonstrate my ability to take a project from concept to completion, apply the right tools for the job, and maintain quality and security throughout the process. The project in this repository serves as a strong example of integrating my technical expertise to deliver a complete, high-quality software solution. It showcases my ability to follow established coding standards and best practices, implement efficient data structures and algorithms, and design, maintain, and manage databases effectively. Together, these artifacts paint a full picture of my capabilities as a computer scientist and my readiness to contribute meaningfully in the field.