**Bruce Gaudet**

**CS-499**

**8/13/25**

**Professional Self Assessment**

Throughout my time in the Computer Science program, I have gained a wide range of skills that have allowed me to grow from a student with a basic understanding of programming into a professional capable of producing secure, efficient, and well designed software solutions. The process of building my ePortfolio has been an important opportunity to showcase these skills while reflecting on my development as a software engineer. Each artifact in my portfolio represents not only a final product but also the work and decision making that went into enhancing its quality, security, and performance. These enhancements are supported by clear evidence of how they meet the five program outcomes, which has given me a strong and organized way to present my abilities to potential employers.

Working in collaborative environments has been an important part of my growth. Through code review exercises, I learned how to analyze and critique code in a way that promotes improvement and understanding for all team members. This practice helped me refine my communication style so that I can provide constructive feedback that is clear and specific, while also learning from the perspectives of others. I have also learned how to communicate effectively with different audiences, whether speaking with technical peers, presenting to a manager, or explaining features to a nontechnical stakeholder. My written narratives, pseudocode, and flowcharts reflect my ability to clearly convey ideas in a professional and technically sound manner.

The enhancements I completed demonstrate my ability to design and evaluate computing solutions that solve real problems using appropriate algorithmic principles and industry standards. In my Inventory Management Android App, I applied architectural improvements such as the Model View ViewModel pattern and integrated the Room persistence library to improve maintainability and scalability. I also applied secure coding practices to protect against invalid input and potential injection attacks. In a separate enhancement of the same application, I focused on improving algorithm efficiency by optimizing search and sorting logic, modularizing code for reusability, and implementing concurrency handling to improve responsiveness. These changes required careful analysis of trade offs to achieve the right balance between performance and usability.

My database enhancement of the Grazioso Salvare MongoDB CRUD Application demonstrates my ability to use well-founded and innovative techniques to create robust, industry ready solutions. I introduced schema validation, compound indexing, and detailed exception handling to improve both the security and efficiency of the system. This work shows my ability to anticipate adversarial exploits by validating all data and ensuring that update operations are limited to approved fields. By addressing these potential vulnerabilities, I strengthened the overall resilience of the application and demonstrated a security mindset in my approach to software design.

Overall, the work represented in my ePortfolio reflects my readiness to contribute in professional software development roles. I have shown that I can work effectively in collaborative environments, communicate clearly in different contexts, design and evaluate solutions with a focus on efficiency and quality, apply advanced tools and techniques to create value, and maintain a security first approach in all aspects of development. Completing this portfolio has solidified my ability to produce work that meets high professional standards and has prepared me to enter the workforce as a confident and capable computer science professional.