**Ryan Skotnicki Professional Self-Assessment**

Throughout my journey in the Computer Science program, I have developed a robust set of skills and acquired extensive knowledge that has prepared me to enter the workforce as a competent and innovative professional. The culmination of this program in the CS 499 capstone course has allowed me to reflect on my accomplishments, showcase my expertise, and align my professional goals with industry demands. This professional self-assessment highlights my achievements, the skills I have honed, and how my work aligns with the program learning outcomes.

**Accomplishments and Expertise**

My journey through the Computer Science program has been marked by several significant accomplishments that have shaped my expertise and set me apart from my peers. Here are a few highlights:

1. **Proficiency in Programming Languages**: I have gained proficiency in multiple programming languages, including Java, Python, and C++. This versatility has enabled me to develop a wide range of software applications, from simple scripts to complex systems.
2. **Data Structures and Algorithms**: Understanding and implementing data structures and algorithms have been a cornerstone of my education. I have designed efficient and scalable solutions for various problems, demonstrating my ability to apply theoretical knowledge to practical scenarios.
3. **Software Engineering and Database Management**: I have developed strong software engineering skills, including software design, development, testing, and maintenance. My experience with databases, particularly MongoDB, has equipped me with the ability to manage and optimize large datasets effectively.
4. **Cybersecurity Principles**: My knowledge of computer networks and cybersecurity principles has been essential in ensuring the security and reliability of software systems. This expertise is crucial in today's digital landscape, where security threats are prevalent.

**Program Learning Outcomes**

**1. Design and Evaluate Computing Solutions**

The program has equipped me with the ability to design and evaluate computing solutions that solve specific problems. For instance, in my CS340 course, I developed a Python CRUD module application for the Austin Animal Center database. This project involved designing a system that allows users to interact with a MongoDB database, demonstrating my ability to create effective solutions using algorithmic principles and computer science practices.

**2. Use Well-Founded Techniques and Tools**

Throughout the program, I have demonstrated the ability to use well-founded techniques, skills, and tools in computing practices. My work on the Pirate Intelligent Agent project in CS370, where I implemented a deep Q-learning algorithm, is a prime example. This project showcased my ability to apply innovative techniques and tools to solve complex problems in the field of artificial intelligence.

**3. Develop a Security Mindset**

I have developed a strong security mindset, anticipating adversarial exploits and designing systems to mitigate potential vulnerabilities. My coursework in cybersecurity principles has been instrumental in this regard, allowing me to incorporate security measures into my projects proactively.

**4. Communicate and Collaborate Effectively**

Effective communication and collaboration are essential skills I have honed during the program. Working on group projects, such as the banking application project in CS230, has taught me how to collaborate in a team environment, communicate with stakeholders, and present complex information in an accessible manner.

**Showcasing Strengths and Shaping Professional Goals**

Completing my coursework and developing the ePortfolio have been instrumental in showcasing my strengths and shaping my professional goals. The ePortfolio serves as a comprehensive collection of my work, demonstrating my abilities and achievements. It highlights my technical skills, problem-solving capabilities, and commitment to continuous learning.

**Examples from the Program**

* **Collaborating in a Team Environment**: In my CS230 course, I worked on a banking application project with a team of peers. This experience taught me the importance of teamwork, effective communication, and leveraging each team member's strengths to achieve a common goal.
* **Communicating with Stakeholders**: Throughout the program, I have presented my projects to instructors and peers, honing my ability to convey technical information clearly and concisely. This skill is vital when communicating with stakeholders who may not have a technical background.
* **Data Structures and Algorithms**: My coursework in data structures and algorithms has been rigorous and rewarding. Projects like the Bank Application in CS230 and the Pirate Intelligent Agent in CS370 have demonstrated my ability to design and implement efficient algorithms and data structures.
* **Software Engineering and Database Management**: Developing the Python CRUD module application in CS340 showcased my expertise in software engineering and database management. This project required designing a user-friendly interface and optimizing database interactions for performance and reliability.
* **Security**: My knowledge of cybersecurity principles has been applied in various projects, ensuring that the software I develop is secure and resilient against potential threats.

**Artifacts and ePortfolio Summary**

The artifacts included in my ePortfolio provide a comprehensive overview of my computer science talents and abilities. Each artifact demonstrates a specific set of skills and how they contribute to solving real-world problems. Here is a brief introduction to the artifacts:

1. **Pirate Intelligent Agent (CS370)**: This project showcases my skills in artificial intelligence and machine learning. The implementation of a deep Q-learning algorithm highlights my ability to design and optimize complex systems.
2. **Bank Application (CS230)**: This project demonstrates my proficiency in data structures and algorithms, as well as my ability to create user-friendly applications with robust functionality.
3. **Python CRUD Module Application (CS340)**: This project highlights my expertise in software engineering, database management, and data visualization. It demonstrates my ability to develop secure, efficient, and user-centric applications.

**Conclusion**

In conclusion, my journey through the Computer Science program has equipped me with a diverse set of skills and knowledge, preparing me to excel in the field. My accomplishments, as highlighted in this professional self-assessment, demonstrate my ability to design, develop, and optimize complex computing solutions. The ePortfolio serves as a testament to my capabilities, showcasing my strengths and aligning with my professional goals. I am confident that the skills and expertise I have gained will make me a valuable asset in any organization, and I look forward to contributing to innovative and impactful projects in the computer science field.