

IDS493 Reflection Essay

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Introduction

As I started on my path toward attaining my degree in cybersecurity. I remember being filled with excitement and anticipation. Despite the many hardships I experience, the determination I have toward my degree has not wavered. Cybersecurity provides an important role in society. It protects supply chains, and our online identity in a world that depends heavily on constantly remaining online (Comptia, 2023). That is why the skills necessary to become a cyber professional are extremely important in a society dependent on the internet. The coursework I experienced along the way has prepared me for the professional world. I developed technical skills in programming, network security assessment, and Linux. My analytical skills improved, giving me greater attention to detail, research, and implementation of moral principles for decision-making. Lastly, along my path, the soft skills I developed before starting my path, have been reinforced along the way. In particular, the skill to adapt to my situation promptly, my communication skills to convey understanding, and my cultural awareness to be more open to ideas. This reflection will examine the previous coursework that helped instill these vital skills necessary to succeed as a cyber professional.

Technical Skills

Developing adequacy in technical skills associated with your field of study is the main qualifying factor for advancing in any field. Within cybersecurity, the list of technical skills is numerous, to the point that your interests will determine the technical skills you attain. For example, a cybersecurity professional specializing in policies may not have the same technical skill as one in penetration testing. I have developed an interest in penetration testing. According to an article by Coursera, key skills employers look for in penetration testing include

programming, network security assessment, and operation systems Coursera (2023). I have realized that many of these skills are present throughout the coursework of my education career. Through coursework, I was able to gain technical skills in programming, network security assessment, and Linux.

Programming

Before the start of my degree path, I had no knowledge or experience when it came to programming. It wasn't till my Basic Cyber Programming and Networking class CYSE 250, had been the first time I would experience programming in depth. During this class, I would learn the programming language Python. For the class project, I would have to develop a program that would be capable of sending messages between two systems on a network. For this, I developed a program of two-player Hangman, which is included as an artifact under the programming tab in my ePortfolio. I would end up developing a client-side script that ran on one system, and another server-side script that ran on another system. Utilizing what I learned from class and outside resources I was able to successfully develop a program of hangman that worked. One user would create a word, then send it to the other user that would attempt to guess the word. For every guess, both users would be notified of the results. It was a project that required a great deal of creative thinking to get the program to work as intended. In the field of Cybersecurity, not all problems that arise have a straightforward solution. There will be unforeseen situations where creative thinking becomes a necessity to form a solution.

Network Security Assessment.

For this section, I included artifacts that demonstrated my capabilities in penetration testing. I decided to include artifacts from Cybersecurity Techniques and Operations class CYSE 301 in my ePortfolio. Demonstrating the ability to conduct penetration tests on networks is one

of the major focuses in the field of cybersecurity. It assists practitioners in understanding the tools and techniques malicious users would apply to an organization's network and develop an appropriate response to mitigate outside threats. This class would teach us how to conduct penetration testing in a remote environment, and proper documentation of our process. Unlike other classes, I had that walked you step by step through assignments. This class in particular would simply ask you to accomplish a task, and it was up to us to figure out how to accomplish tasks by applying what students had learned. For example, the artifact titled Assignment 5 would have students crack passwords, then have us briefly describe our process for accomplishing the tasks along with a screenshot. Of all the courses, this class would be one of the most challenging, yet rewarding ones I have taken. I felt as though we had more freedom to accomplish assignments and required students to develop critical thinking skills. In the field of cybersecurity, these critical thinking skills will prove useful in evaluating situations and determining the most efficient solution promptly.

Linux

In the field of cybersecurity having proficiency in the Linux operating system is important. Depending on the type of work or simply personal preference, the operating system preferred by people can vary drastically. I have included artifacts from my Linux CYSE 270 class. In this class, students would learn about the Linux operating system. Assignments consisted of simply navigating the operating system, setting up users, and configuring networks for a virtual environment to practice penetration testing techniques. At the time it was exciting to learn a new operating system. Before this, I grew up primarily with Microsoft and Android systems. So, the transition to learning Linux was fascinating. The feeling was similar to exploring a new place and making discoveries. In a sense, this excitement of wanting to learn

something new demonstrates a strong passion for personal growth. Technology advances at a substantial rate, and to be successful in the field of cybersecurity. It is important to demonstrate continuous growth. demonstrated

Analytical Skills

Analytical skills are a valuable asset for cybersecurity professionals. The field of cybersecurity relies on the analysis and discovery of patterns in data to discover potential areas of concern (Raju, 2022). Throughout my coursework, I have attempted to refine my analytical skill by developing competencies in conducting research, attention to detail, and decision-making.

Attention to Detail.

To demonstrate the level of my attention to detail. I included artifacts from my Cyber Strategy and Policy class CYSE 425W. In this class, students learned about the development of policies and strategies in cybersecurity. At the beginning of the class, students would have to choose a specific policy, and each assignment would focus on the chosen policy from an array of perspectives. I chose to examine the California Consumer Privacy Act or CCPA. This is one of the few acts that attempt to give users more control over their information online. At the time I felt this act provided potential and could act as an inspiration for states across America to begin implementing privacy laws. The reason for choosing assignments in this class as artifacts representing attention to detail is due to the amount of research, I had conducted on the CCPA. Since all my assignments revolved around this topic, I took special care in paying close attention to every piece of detail within the CCPA, going as far as to examine the social implications, political implications, and the entire history behind the act. Attention to Detail in the field of

Cybersecurity is important. When analyzing data even the slightest suspicion would warrant further investigation. Malicious users are sophisticated and can cover any traces of their actions. Having a high level of attention to detail could potentially catch malicious users in the act or discover existing vulnerabilities, saving an organization.

Research

To demonstrate my skill in Research, I have decided to include a memorandum assignment for my Cyber Law class CYSE 406 as an artifact in my ePortfolio. This class informed students about the laws and regulations that govern the digital domain. I found this subject very intriguing and enjoyed learning how laws applied to the internet, even though the internet extends beyond borders into international territory. One particular area that caught my interest, was the lack of privacy laws in the United States when compared to other countries. I felt strongly about this issue and was baffled that the United States, one of the most formidable superpowers in the world, lacked a consistent law governing privacy across the nation. This is where I would the topic of focus in my memorandum assignment. The assignment required students to write a memorandum to a fictional governor bringing attention to an important issue and proposing a possible solution. My memorandum would focus on persuading the fictional governor to develop regulations governing privacy. I feel this artifact is a good example to demonstrate my ability to conduct research and apply evidence to back my stance. Within the assignment, I acknowledge the opposition and potential issues that may result from attempting to address the issue. However, I felt solutions existed based on studies conducted and that addressing the issue would have benefits that would outweigh potential concerns. The ability to conduct research in the field of cybersecurity is an essential skill to have. To address threats or vulnerabilities, conducting extensive research is necessary to find a viable solution. It allows for

the refinement of techniques and enhancement of current technologies to address new emerging threats.

Decision Making

To demonstrate my competencies in decision-making, I have chosen to include artifacts from my Cyber Ethics class PHIL 355E. This class focused on the ethical implications in the field of cyber security. Assignments in this class involved applying ethical theories that support your choice in a hypothetical situation. At the onset of this class, I had reservations concerning the relevance philosophy and ethics would have on the field of cybersecurity. As time progressed and the class continued, I started to realize that ethics would play a major role in each situation even at times acting as the deciding factor. These artifacts demonstrate how I attempt to factor in all possible perspectives before making an important decision. The field of cybersecurity requires a high degree of decision making often based on moral principles. Cybersecurity professionals are often entrusted with sensitive material or encounter a situation that puts them in a moral predicament.

Soft Skills

I decided to include soft skills in my reflection paper due to the important role it plays in the application process for employment. A study conducted by the ESCP Europe Business School found that employers had an emphasis on soft skills for recent graduates seeking employment (Succi & Canovi, 2020). The reason for this is that employers understand that recent graduates do not have the work experience to effectively demonstrate hard skills relating to their particular degree. So, when it comes to entry-level jobs, the emphasis is on soft skills. Being so close to graduation I will be seeking employment shortly for entry-level positions. That is why I would like to emphasize my skills in adaptability, communication, and cultural awareness.

Adaptability

For this skill, I have chosen to include an artifact from my Interdisciplinary Theory and Concepts class IDS 300W. This class consisted of conducting research through an interdisciplinary approach. Taking insight from other disciplines to examine a problem requires the researcher to take various perspectives into account to form a solution. For my term paper, I would attempt to research the topic of Cyberstalking, a fairly new phenomenon that needs to be addressed. During this assignment, I would have to adapt and look at the issue from three different disciplines. Not only did I have to take insight from disciplines in the field of computer science, which I am extremely comfortable with. I had to reach out to other branches of study I had relatively little to no experience with. This assignment required me to expand out of my comfort zone and develop adequacy in the fields of Psychology and Political Science in a short period. I was able to come up with a viable solution to address the issue of cyberstalking through integration. The field of cybersecurity is an integration of multiple disciplines, and many solutions require taking an interdisciplinary approach. Remaining able to quickly adapt to constant change is a much-needed skill in the field and one I hold in high regard.

Communication.

To depict my communication skill, I have chosen an artifact from the History of the World Civilization class HIS 111 I had taken at Tidewater Community College (TCC). In this class, students learned about ancient history across the world up to the 1600s. I enjoy learning about history and grew up as a child watching the History Channel. History is important in providing society with a wealth of inspiration and the ability to reflect on previous mistakes for a prosperous future. The assignment consists of a written essay detailing the history of Augustus Caesar the First Roman Emperor. The reason for choosing this artifact is due to the fact I felt it

demonstrates my ability to communicate effectively. Through extensive research, I was capable of compiling multiple sources of data into a brief biographical, that would be easily comprehensible to the average reader. In the professional world, there will be times when it is necessary to present technical works to an audience without a technical background. Having the ability to break down and convey this technical work so that the audience can understand is a valuable communication skill to have.

Cultural awareness

To demonstrate the soft skill of cultural awareness, I have included an artifact from my History and Appreciation of Art I class ART 101 I had taken previously at TCC. In this class, students learned about the history of art and developed skills to interpret artistic works from around the world. Understanding other cultures proved to be an important aspect of the class and was necessary to succeed. The artifact involved a project that required students to visit a museum to choose five art pieces and give our interpretation of the art based on its history and cultural background. It was important to consider the artist's cultural background to understand symbolism within the piece and read between the lines the message the artist attempts to convey. Having this skill of cultural awareness opens doors and broadens opportunities. It increases the potential of working in a foreign country, a goal I am currently aiming for which involves traveling. It could also assist in the development of other skills, such as teamwork. By understanding the different cultures within a workplace, I could demonstrate respect for others and form strong bonds leading to a welcoming work environment.

Conclusion

After reflecting on my previous coursework, the skills I have obtained will be crucial in progressing into the future. I acknowledge that this is only the starting point of my professional

career, but having a solid foundation is necessary for a successful future. Through the development of technical skills in programming, network security assessment, and Linux. I have developed specialized skills to handle the job of a penetration tester. With analytical skills, I have expanded in the areas of attention to detail, research, and decision-making. I am confident in my abilities to not only analyze data, but situations having the capability of making informed decisions. Lastly, through the refinement of my soft skills of adaptability, communication, and cultural awareness. I believe I have the capability of standing out amongst similarly qualified candidates when applying for the same position. The future of cybersecurity is promising with the U.S. Bureau of Labor Statistics job outlook projecting a 35% growth in the next decade (Information security analysts: Occupational Outlook Handbook 2022). With a promising job outlook, I am confident the skills I've attained at TCC and ODU will translate well into the professional world.

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