Reflection Essay

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IDS 493: Electronic Portfolio Project

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Abstract

This paper aims to provide a reflection of the artifacts and skills displayed within my ePortfolio. In this paper, I will cover how my technical, communication, and critical thinking skills have drastically improved as a result of the numerous artifacts shown on my ePortfolio and how they will potentially assist me in the future.

Introduction

My time in the cybersecurity program at both Laurel Ridge Community College and Old Dominion University has been a very amazing experience where I have learned a unique and diverse skill set in relation to my major. With the constant growth and development of technology, these skills are extremely desirable to many employers (*Cybersecurity skills: Soft & hard skills for cybersecurity*, 2023). For example, these programs introduced me to many different topics including programming, red teaming, blue teaming, and many more. In addition to this, the experience has also significantly expanded both my hard and soft skill sets. These hard skills include my use of cybersecurity specific computer applications, programming, and computer hardware, while soft skills include problem solving, critical thinking, and teamwork. However, I believe that the skills that have grown the most include my technical, communication, and critical thinking skills. Throughout the various sections of my ePortfolio, I've included a wide variety of different artifacts that demonstrate these skills that I have developed during my college career. Due to the interdisciplinarity of the field of cybersecurity, I believe that many of these included artifacts exhibit more than one skill that would prove invaluable to any workplace. In this paper, I will discuss some of the more meaningful and important artifacts included in my ePortfolio, what I acquired from the experience working on them, and how they have prepared me for a position in my chosen career field.

Technical Skills

Possessing strong technical skills is extremely important for any discipline within the realm of information technology and cybersecurity. Understanding how electronic devices and applications work is critical in order to carry out many job functions. In my time at college, I've had extensive experience in a wide variety of industry standard cybersecurity applications, such as Metasploit, Wireshark, pfSense, and many more.

The first artifact located under my technical skills was the final project for cyber attacks class at Laurel Ridge Community College. This class taught me the basic skills and tools necessary in order to recognize cyber threats and completely halt or mitigate their damage to the target computer system. This artifact displays my technical skills with a popular cybersecurity and networking application known as Wireshark. Wireshark is frequently utilized by information technology and cybersecurity professionals in order to capture and monitor network traffic in real time (McRee, 2006). For the assignment, I was given multiple tasks to perform and documents to show my basic skills with the application, such as displaying the details of a captured packet. However, various other questions were scattered throughout the document in order to test my knowledge of basic networking protocols, defensive networking procedures, and how common cyber attacks would be displayed in the Wireshark interface. It was a great way to get me introduced to a popular application utilized in my intended career field.

The second artifact is from one of the most interesting classes that I attended during my academic career, ITN 276, or Computer Forensics. During this class, I learned information in regard to investigative techniques for collecting computer evidence from physical mediums and a variety of operating system file systems. This specific artifact showcases my skills in an

application known as Autopsy, a computer program frequently used by forensic investigators around the world. Before starting the assignment, I was given the proper files in order to carry the scenarios within the various tasks. This document displays some of the basic steps that I took in order to carry out the instructions of the assignment. Based on the evidence located within the scenario files, I was able to solve a case utilizing a similar process that real criminal investigators would use on computer data. Overall, this was definitely one of the most fascinating courses that I attended and I learned some very relevant skills if I choose to pursue a career in computer forensics.

The last artifact located under the technical skills section of my ePortfolio was created during my Computer Crime and Hacking class. During my time in this class, I learned about many different types of basic computer attacks and what tools can be utilized to stop them or mitigate their damages. This artifact showcases my skills with Kali Linux, a popular Linux distribution for those who are involved within the field of cybersecurity. In this specific document, I created various user accounts and groups on the computer system and learned how to properly manage them through the use of various commands on the Linux command line. Knowing these commands is critical for cybersecurity professionals in order to ensure that users are not granted too many privileges on the system, potentially compromising sensitive information.

Communication & Writing Skills

Communication and writing skills are critical in a wide variety of professions, especially in the field of cybersecurity and information technology. Throughout my college career, I have

had to communicate countless times with both my professors and classmates as well as construct technical computer policies and instructions. By further developing this skill, I'm confident in my abilities to relay information in both a technical and professional manner.

The first artifact located under the Communication and Writing Skills section is one of the more memorable assignments that I completed. CYSE 406 was one of the more interesting interdisciplinary classes that I participated in as it was located at the crossroads of two major disciplines; cybersecurity and law. It was very fascinating to see how these two disciplines combined in order to form the topic of cyber law. In regard to the assignment mentioned above, I was provided a scenario where in which the governor of the fictitious country, Governor Tar-Míriel of Númenor, tasked me with formulating a report on a wide variety of cyber law and data privacy topics, such as citizen's privacy rights, personally identifiable information protection, and the General Data Protection Regulation. Policies such as this are critical in order for organizations to protect sensitive information and establish safe guidelines for internet access and computer usage (Mishra et al., 2022). I feel that this assignment also demonstrates both my problem solving and critical thinking skills as I was tasked with formulating a potential solution to the problem based on the given scenario. Problem solving skills such as this are certainly important to cybersecurity and Information Technology roles, as troubleshooting computer systems or assisting customers with their computer needs is a common occurrence. Critical thinking skills are also extremely important for this same reason, as it allows me to come up with potential solutions faster in order to solve the problem at hand quicker. After conducting much research and taking into account many different conflicting points of view, I was able to write and suggest a simple privacy policy that would likely satisfy the citizens of Númenor. In addition to this, it greatly exhibits my research skills on such a sensitive topic as cyber law, as I had to

further research and take into account many different pieces of information and conflicting opinions on how nationwide privacy laws should be established for the citizens of the affected country.

Another memorable artifact included in my ePortfolio is the second artifact located under the Communication and Writing Skills section. This class involved many different interdisciplinary topics that revolve around the central topic of cybersecurity. Many of these other disciplines include politics, economics, law, and criminology. However, this specific artifact included multiple viewpoints from the disciplines of sociology, criminology, and technology. For this assignment, I was tasked with reviewing a research paper of my choice and deciphering how the determined results impact both individuals and society as a whole. Throughout my early educational career, such as throughout high school, writing has always been one skill that I felt the weakest in. However, throughout my college career, I feel that numerous writing assignments such as this one have helped better develop and build upon my writing skills. Writing is definitely a crucial skill to have developed for any workplace. In many workplaces, writing is utilized in order to communicate with one another, and cybersecurity and information technology is no different (Penn, 2021). However, writing is even more important within these sectors, due to the many policies that are needed to be developed in order to properly protect sensitive data. Information security professionals must have extremely strong writing skills in order to ensure that these policies are very detailed and leave no room for confusion.

The last assignment listed under the Communication and Writing Skills section was the final project for my Information Assurance for Cybersecurity class, CS 465. In this class, we learned a wide variety of strategies in planning for and deploying methods to protect the integrity

of sensitive information. In addition to this, I learned the steps that are taken when a cyber attack or network intrusion takes place in a business. For this project, we were presented with a scenario in which the fictitious company, ABC Manufacturing, experienced a detrimental cyber attack. As a result of the attack, we were tasked with formulating a document that summarizes various aspects of the incident and proposes potential solutions that could have been taken to mitigate or outright stop the attack from occurring. This artifact is very similar to a real document that cybersecurity professionals draft after a similar incident, as I had to take into account much information in order to achieve a comprehensive and detailed proposal. This document displays my skills at creating an incident report and strong cybersecurity policy that can be easily understood and followed by those with or without strong technical skills, an extremely important aspect of creating policies.

Critical Thinking/Analysis Skills

The last skill that I chose to exemplify in my ePortfolio are my critical thinking skills. Critical thinking is an especially important skill for all cybersecurity professionals to possess as well, as this allows them to make better and more informed decisions, an extremely important trait to have when dealing with potentially sensitive information (Nowduri, 2018).

The first artifact located within the critical thinking skills section of my ePortfolio is from my Introduction to Linux Class at Laurel Ridge Community College. This class taught me many of the skills that were crucial throughout my college career, such as Linux commands and basics of the Linux operating system. This specific assignment that I showcased was the final project for that class. For the assignment, we were given multiple scenarios in which we had to research

and find a solution to the problem at hand. We were strongly encouraged to utilize any resource we could find online. In order to show our thought process, I had to document every step that I took in the research and implementation process. As with many aspects of Linux, there is always more than one way to solve a problem, therefore, this was a great way to display my critical thinking, problem solving, and technical skills. However, I do remember having quite a bit of difficulty on some sections of the project, such as the first problem in particular. Nevertheless, it was a great way to test my basic Linux skills that I learned in the class.

The second artifact located within this skill's section is from my Computer Crime and Hacking class from Laurel Ridge Community College. This course discussed many interesting topics related to both attacking and defending computer systems, such as intrusion detection systems, malicious code, espionage, and much more. As with many of my other assignments and projects, I was presented with a few scenarios and had to formulate the appropriate next steps with the given information. One of the main things that I learned with this assignment was the steps needed to be taken after a cyber attack has occurred. Learning that an attack has targeted your business is likely very nerve wracking and stressful, therefore, it's important for the IT and cybersecurity team to have a good understanding of the proper and necessary steps involved.

The last assignment located under the critical analysis section of my ePortfolio was created during my enrollment in IDS 493. This class actually assisted me in the creation of this ePortfolio and aided me in determining which skills I have developed the most during my college career. For this writing assignment, I was tasked with locating a job posting on a popular job forum that interested me and was in my desired career field. I then had to provide a detailed analysis of the job posting, such as providing inferences based on the description of the position. In addition to this, I analyzed how my experiences in college have prepared me for this job. My

analysis skills were critical in completing this project due to the many aspects of my personal experiences and the job description that needed to be connected. This assignment was ultimately a great way to reflect on what I've learned throughout my academic career and gauge how prepared I am to enter the job market in my intended career field.

Conclusion

My college career taught me a wide range of interdisciplinary techniques and skills. The interdisciplinarity included throughout the cybersecurity program helped further my understanding of various topics and how they relate to information technology and cybersecurity. Learning about this relation is important and significantly aided me in my coursework by allowing me to understand and consider multiple viewpoints in order to solve problems relating to multiple disciplines. In fact, without Old Dominion University and my required interdisciplinary course, IDS 300W, I likely would have never learned about the vast realm of interdisciplinary subjects, as I had no prior knowledge on the subject. However, it's important to remember that interdisciplinary strategies and techniques are not only restricted to the realm of information technology and cybersecurity. Many other fields utilize interdisciplinarity in some way as well. As shown by the artifacts above, many of these skills will certainly be invaluable to my future and career as a whole. I'm very eager to grow these skills to new heights in the workforce after my college graduation.

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