

Reflective Essay

CYBERSECURITY

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Introduction

During the time I have studied cybersecurity I have obtained a variety of skills that is required for my success in this field that is continuously evolving and expanding. I have found that my top 3 skills amongst the many that I have developed are programming and scripting, networking, and incident response. The methods that these skills were developed through include interdisciplinary coursework, theoretical studies and homework. To tackle the complex challenges that come with cybersecurity a well-rounded foundation was created by pulling from disciplines such as information systems, computer science, and criminal justice. The purpose of this reflective essay is to dive into the how the specific artifacts on the Eportfolio display how proficient I am in the skills that I claim are my top 3. This essay also explains the impact of the contributions from my academic experiences and how prepared me for my future career in cybersecurity.

Programming and Scripting

Programming and scripting were some of the if not the most vital skills I have acquired during my cybersecurity studies. To carry out actions such as task automation, data analysis, and solution creation for cybersecurity specific challenges it is required that you have a deep understanding of programming and scripting. This skill was sharpened by participating in in courses such as Cyse 250 which is basic cybersecurity networking and programming and Cyse Linux systems for Cybersecurity. The artifacts I have chosen which best demonstrates my skills which are a shell scripting assignment, and 2 python scripting assignments. The shell scripting assignment demonstrates I can write a script and move it through the directories and rename the script without corrupting or misplacing it. The python scripting assignments deeper

understanding and practical experience of fundamental concepts of Python and conditional statements.

Interdisciplinary Connections

In the courses Cyse 250 basic cybersecurity networking and programming and Cyse 270 linux systems for Cybersecurity the knowledge I acquired while doing the hands-on assignments were invaluable. The reason I am able to structure data in a way that promotes quicker analysis and carry out efficient database management is rooted in my time in my Network and security course and my Linux systems course.

Career Relevance

In the cybersecurity career path especially with positions such as Penetration Tester and Security Analyst programming and scripting are essential skills. A majority of job listings place an emphasis on the requirement of having a deep understanding of how to use Python and Bash. This is Python and Bash are utilized in various aspects of role including the automation of repetitive tasks, and the conducting of penetration tests. The scripting experience I have developed has allowed me to meet the demands of these positions effectively.

Networking

Networking is the core element of secure communication and data transfer, so Networking is an indispensable skill for cybersecurity professionals. Most of the course I have taken have such IT 315 Intro to Network & Security, Cyse 270 Linux System for Cybersecurity CS 467 Reverse Software Engineering have covered many elements of Networking. These courses taught topics network architecture, TCP/IP protocols, firewall configurations, etc. The artifacts I chose that best display my expertise in networking are my VirusTotal assignment, Wireshark assignment,

and VI editor assignment. The VirusTotal assignment's purpose was to analyze files to see if there is any malicious content in them and understand the other items contained in the file. The Wireshark assignment for IT 315 taught us how to navigate and understand the application using different display features. It also taught us why is it important to have network traffic encrypted rather than appearing in clear text. The VI Editor assignment for Cyse 270 was a demonstration on how to input various commands in the terminal navigate through the system editor on Kali Linux.

Interdisciplinary Connections

In these homework assignments both knowledge in Computer Science and Information technology were heavily utilized. Also, my Entrepreneurial course in cybersecurity taught me essential lessons such as resource administration and aided me in creating solutions that were not only effective but also cost effective. Lastly, my risk management courses provided insights on efficient resource allocation and action prioritization.

Career Relevance

Knowledge in Networking is a requirement for positions such as Cybersecurity Specialist or Network Engineer. Often job descriptions are after individuals with knowledge in managing IDS/IPS systems, firewalls, and ensure compliance with security regulations and standards. I am well-rounded for such roles and many more due to the hands-on experience I gained through the projects and homework assignments of these networking-based courses.

Incident Response

In order to manage and mitigate cybersecurity breaches and their impacts you have to possess the skills to plan and carry out Incident responses. The foundation for responding to incidents effectively stems from my coursework in Cyse 465 Info Assurance. The main artifact that demonstrates my ability to respond to incidents such as cyber breaches effectively is my final project. This project was based on a fictional company called ABC who's internal was compromised and financial and administrative operations were paused for a few weeks. My task was to create a set of information assurance (IA) policies and procedures to reduce the risk of company disruption and of internal proprietary information being compromised again.

Interdisciplinary Relevance

The Incident response plan incorporated concepts from course I have taken that are criminal justice and ethics based. The information I gained in those courses ensures that during legal proceeding the digital evidence I obtain can be utilized. And the ethical based course provided moral based instances of what interact with while finding solutions, so I can learn from previous ethical mistakes. The ethical based course also ensures that I do not jeopardize the integrity of the company trying to be cheap because just because the solution is cost effective does not mean it is morally correct. Additionally, my time in my philosophy course provided insights into the human aspects of social engineering and phishing attacks.

Career Relevance

In cybersecurity roles such as Incident Response analysis and consultation in cybersecurity skills in incident response are desirable to employers. Cybersecurity employers seek out candidates who can lead efforts in the damage minimization of security breaches and can remain calm under

pressure. My projects and homework assignments in my Info assurance course displays my readiness to fulfill these responsibilities in a profession setting.

Conclusion

My understanding of cybersecurity has been influenced by the interdisciplinary nature of the cybersecurity degree program. Durin this degree program I have developed a comprehensive approach to solving issues that are complex. Interdisciplinary courses such as PHIL 355E and CYSE 425W installed effective communication and critical thinking skills in me which were crucial for the completion of assignments and projects.

In cybersecurity where the challenges that occur encompass a broad range of areas it is essential for me to be an interdisciplinary thinker. Examples of situations that utilize Interdisciplinary thinking include legal knowledge, technical expertise, and organizational behavior understanding. My adaptability and problem-solving skills have been strengthened by my ability to draw from various fields. These abilities I have developed have made me an idea candidate for the cybersecurity workforce.

In summary, throughout the duration of my studies in the cybersecurity degree program the skills I have acquired have prepared me to succeed in my future cybersecurity career. The mix of Programming and Scripting, Networking, and Incident response skills I gained, and my interdisciplinary academic experiences are not only aligned with the cybersecurity industry requirements. These skills and experiences establish a strong foundation for professional growth and lifelong learning in this field that is continuously and rapidly evolving.