

**Reflection Essay**

Amira Muaket

Old Dominion University

IDS 493 Electronic Portfolio Project

Professor Carin Andrews

December 1. 2025

### **Abstract**

The ePortfolio I'm going to demonstrate will serve as a reflection of my past classes and experiences during my time at Old Dominion University. An ePortfolio helps tell my story, who I am, and about what I have learned. "According to the American Association of Colleges and Universities, it is" a personal website used to deepen student learning through reflection on, and curation of, work products produced across the college experience.'"(Meade, 20) I am currently a Cybersecurity major and plan on graduating on December 13, 2025. Throughout my time at ODU, I have acquired many hard and soft skills that align with my major and future career path. The way I will be displaying my skills will be through artifacts, digital evidence of my progress, achievements, and goal fulfillments.

Throughout my years at ODU, I want to highlight my technical, communicating, and critical thinking skills, as these skills will showcase what I have learned and applied through course settings/assignments, my internship, and personal/professional environments. Combining hard and soft skills is essential" The main differences between these skills are how you obtain them and how you apply them in the workplace." (Long, 20) It's important to indicate and match a set of skills for future job opportunities, as this will improve chances of being selected. The artifacts I will exhibit to showcase my chosen skills will consist of coding/lab assignments, papers, presentations, and my internship tasks.

I believe choosing these skills and artifacts will illustrate the qualities needed for a career in cybersecurity. The classes and assignments I have completed especially will not only apply to interdisciplinary skills and subjects, but they also align with cybersecurity ideals and frameworks.

## **Technical Skills**

Having technical skills is extremely important when wanting to pursue a career in cybersecurity. It's fundamental to understand and know the basics of cybersecurity technical aspects, such as command lines, scripting, python, etc. ODU offers a "School of Cybersecurity" courses through "The National Centers of Academic Excellence in Cybersecurity (NCAE-C) program managed by the National Security Agency (NSA) has designated Old Dominion University (ODU)". The artifacts that I will show display the Cybersecurity B.S program, developing proficiency in protecting computer networks, systems, and online data from any cyber threats.

### **CYSE 270: Linux System for Cybersecurity - Password Cracking**

This class, in particular, was an introductory class to basic Linux operating systems focusing on cybersecurity by using a graphical interface and command-line interface. It focuses on teaching installation and configuration, shell scripting and the Linux system. From taking this class I am able to perform the essential system administration functions and strengthen my overall skills on Linux, which I didn't have prior to taking this class.

I specifically displayed a lab about password cracking, which was one of my favorite assignments in this class. It helped understand password security and the types of password attacks associated. Allowing myself to thwart hackers with stronger passwords. I learned different types of password cracking, such as brute force, dictionary attacks, phishing, social engineering, and malware. The one we learned in class and focused on was the "John The Ripper" password-cracking tools. It works by detecting weak passwords on Unix and macOS operating systems.

**CYSE 301: Cybersecurity Technique and Operations - Ethical Hacking**

The Cybersecurity Technique and Operations course focused on real-world cyber operations, through concepts, tools, and strategies to perform cyberattacks and defenses. Although some of the material in this class was a bit difficult, through trial and error, I learned a lot and definitely strengthened my cybersecurity knowledge. Once I completed this class, I was able to grasp the knowledge of understanding components of computer networks and how to identify network traffic while detecting anything abnormal in the network. This ties to the artifact I presented. Ethical hacking centers on the idea of using tools and techniques to gain access, and to spot out any vulnerabilities in the system. Once those vulnerabilities are found, then one can implement resources to improve cybersecurity posture. In this assignment, we used “Metasploit”, which is a penetration testing tool against “RAT”, which is malware implemented in the network through TCP connections. Our goal was to exploit the system, then configure a payload (which would generate a shell to connect to the victim's machine). Then we had to set up a “Listener” (which is configuring the ports), finally manage the meterpreter and shell session (which is implementing the attack and obtaining access to one's VM).

**CYSE 301: Cybersecurity Technique and Operations - Hide Your Secret!**

“Hide Your Secret” entails digital steganography, which is a method used as a form of hiding digital information in order to protect multimedia data and copyright. This is done through hiding a piece of information under an image file, without it being detected by any third party interference. The assignment we conducted was implementing and then revealing a hidden message inside images by using “Steghide”. Steghide is used along the command line, and I was able to embed the text file into the picture. Once that was done, we then had to extract the hidden contents from the image file through “steghide extract.”

## **Communication Skills**

Communication skills in cybersecurity or any other related job are essential to have, as they help convey and articulate your thoughts and opinions in certain situations. It can come in different forms, such as verbal, non-verbal or written, as it displays a wide range of abilities that can be shown in both personal and professional settings. Through the artifacts I have provided showcases my communication abilities through different forms.

### **CYSE 250: Basic Cybersecurity Programming and Networking - Milestone 2**

Basic Cybersecurity Programming and Networking was a class that focused on the Python programming language, where I conducted research to find solutions and complete labs to common problems found in computer science. Once I found the solution to the problems, I had to display it in algorithms, which is a programming technique. In this class I was able to learn basic Python implementations such as conditional and loop statements, the data structures (lists, dictionary, and tuple), and the client-server architecture and socket programming.

This ties to my assignment where I was assigned to a group project with another person where we had to conduct a presentation regarding python and socket programming. We generated a database where it will print out a popular song of 2023 by allowing users the option of choosing a month or viewing the full list. We displayed both the server code and client code and ensured it was user-friendly while following the assignment needs, which are socket programming, loops, functions, files, strings, lists and dictionaries. After that was completed, we had to present our findings to our professors by presenting it in a video that had to be at least 15 minutes in length. In this artifact, it shows both written and verbal communication to explain our presentation.

**CYSE 368: Cybersecurity Internship - Final Paper**

For this class, we had to enroll in an internship that specifically focused on cybersecurity. The paper we had to conduct in this class consisted of 20 pages where we had to describe in detail our internship experience. I was fortunate enough to land an internship with the Commodity Future Trading Commission (CFTC) and had to describe in detail all of my duties that I have done as well as the interactions and communications I had to endure throughout the process. Highlighting my efforts, completed work, and the overall experience. These artifacts will show in detail my communication process when placed in a professional setting.

**IDS 300W: Interdisciplinary Theory & Concepts - Final Paper**

Interdisciplinary Theory and Concepts was a writing intensive course that focused on examining different issues through the scope of interdisciplinary. From this course, I learned the history and application of interdisciplinary studies, while gaining the ability to use interdisciplinary skills in different approaches to examine a problem. Regarding the artifact, we had to construct a paper about a chosen topic that has a complex query, incorporating three diverse disciplines through Repko and Szostak's 10-step interdisciplinary research method to discuss the chosen topic. I decided to center my essay on "How has the use of cosmetics affected individuals?" As this issue can be both positive and negative through the scope of environmental, physiological, and socially.

**Critical Thinking Skills**

Critical Thinking Skills really come down to how you examine a situation and what judgement you make. It's taking into account different possibilities and approaches to an informed decision. Especially being aware of a situation and examining/analyzing it logically. As this can boost connections and present many opportunities with this skill. Having critical

thinking skills is highly essential in cybersecurity as well as other fields. The artifacts I have presented display my critical thinking skills through different approaches.

### **IT 315: Intro to Network and Security - Home Network Diagram**

Intro to Network and Security focused on modern networking concepts and technology. Where I examined the fundamentals and concepts related to communications and data networks, I was able to learn basic network architecture and apply this knowledge to design and construct a working network. Especially this artifact, I was tasked to create a home network diagram using Microsoft Visio. Drawing a diagram of my home computing network through applying routers, modems, computers, and other related devices that are connected to the network. This displays my critical thinking skills, as I had to be detailed about my approach to completing the assignment by displaying all my findings.

### **CYSE 407: Digital Forensics - Midterm Paper**

The Digital Forensics course introduced the concepts and technology associated by collecting, processing, and preserving digital evidence. Conducting several labs centering on the field of digital forensics. The midterm paper I had to complete was to create and run a brand-new digital forensic lab for a mid-sized police department in detail. We had to include a diagram of the lab's visual layout. Additionally, we had to include an inventory of equipment, a lab accreditation and maintenance plan, and staffing of both manager and technicians. This assignment has strengthened my critical thinking skills through thinking logically and executing a plan, which helped with recognizing the duties of a digital forensic investigator.

### **CYSE 280: Windows System Management and Security - Research Paper**

Windows System Management and Security focused on the tools and techniques when conducting configuration, management, and the implementation of Windows and IT-related

security situations through client and server operating systems. From that we had to conduct a research paper relating to Windows Management and Cybersecurity. I decided to write about the “Social Media impacts on Cybersecurity”, especially its influence on how cybersecurity is enforced and constructed. It's essential to identify the problem and find various methods for how, as a society, we can improve on user awareness around cybersecurity implementations. Using data from reports and case studies to help combat cybersecurity threats that social media faces.

### **Conclusion**

After my time at ODU, I've learned that having strong skills in technical, communication, and critical thinking are extremely important when wanting to pursue a career in cybersecurity. Ensure a promising career path, where I can confidently use these learned skills in a professional setting. The artifacts I provided and completed during my time at ODU have definitely played a significant role when obtaining and strengthening these skills. As each artifact has contributed to my overall goal fulfillment and helped shape my growth both personally and professionally. As applying and showcasing my skills in real-world scenarios while enhancing my understanding of cybersecurity through my e-portfolio. All my experiences that I have endured differently contributed to the development of these skills and prepared me to pursue a career in cybersecurity.



### References

Meade, L. (2023). Building a Portfolio: Why You Should Show What You Know.

[https://uark.pressbooks.pub/eportfolio/chapter/introduction\\_to\\_portfolios/](https://uark.pressbooks.pub/eportfolio/chapter/introduction_to_portfolios/)

Long, B. (2022, February 9). Hard Skills vs Soft Skills: Definitions & Examples. Insight Global.

<https://insightglobal.com/blog/hard-skills-vs-soft-skills/>

School of Cybersecurity. (2022, August 30). Old Dominion University

<https://www.odu.edu/cyber>

Windle, R., & Warren, S. (2022). Communication Skills | CADRE. Cadreworks.org.

<https://cadreworks.org/resources/communication-skills>

Coursera. (2023, April 13). What Are Critical Thinking Skills and Why Are They Important?

<https://www.coursera.org/articles/critical-thinking-skills>