

Reflection Essay

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IDS493: Electronic Portfolio Project

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Abstract

This essay serves as a reflection of the nine selected articles that represent the three main skill sets, I've developed throughout my college career. Each section of this document is dedicated to one of these areas: technical skills, writing skills, and creativity. Under each category, you will find a header linked to a page displaying the three projects that represent that particular skill set. This format allows you to easily navigate through the document by matching the project titles under each header with their detailed descriptions. In this writing, I share insights and memories from each project, highlighting the valuable lessons learned from each experience.

Introduction

As I move through my final year in college, I reflect on I think back on the varied and challenging courses that have greatly developed my technical and creative skills. My courses have covered networks and information security, system management, and even visual arts, allowing me to cultivate a well-rounded skill set. This document compiles various projects and assignments that showcase my expertise and growth in these areas. Each section, from technical skills to written communication and creative projects, highlights specific courses and their corresponding projects that not only challenged me but also enabled significant personal and professional growth. This portfolio is a collection of my journey through college, demonstrating my ability to blend technical proficiency with creative insight across multiple disciplines.

Technical Skills

In my senior year of college, I have completed numerous courses on networks and information security, gaining proficiency in defensive tools like Wireshark and firewall software, and offensive techniques including Metasploit for system breaches, keyloggers, spyware, and using rainbow tables for password cracking. I've also learned to set up and manage network components like routers and LAN networks, and have developed a solid understanding of Linux systems, primarily working in Unix environments. This combination of skills in computer systems and information security represents the most valuable expertise I've acquired during my studies. Sajid Ajmal (2022) explains that "As job markets continue to grow more competitive, today's career candidates have to learn to work harder to differentiate themselves from candidates vying for the same jobs. Acquiring the right technical skills is quite possibly the most effective way to achieve this goal" (Ajmal, 2022). Greater competence in the realm of

cybersecurity shown through my technical knowledge gives me courage for what is ahead.

Below are some projects that best showcase my technical skills.

CYSE 301: Cyber Techniques and Operations – Ethical Hacking

Cyber Techniques and Operations was among the most challenging yet rewarding classes I took in college. It provided hands-on experience with a virtual network that simulated real-world offensive and defensive cyber operations. We learned to identify and exploit vulnerabilities in systems, defend against attacks, set up basic firewalls, crack passwords, and use tools like Nmap, Wireshark, and Metasploit to infiltrate other virtual machines. This course not only deepened my understanding of cybersecurity's technical aspects but also highlighted the importance of teamwork and effective communication. Recognizing the course's complexity, the professor established a Discord server for us to discuss homework and exchange ideas, which proved invaluable. I often received guidance from peers and, in turn, helped others with their challenges. This experience was crucial in enhancing my cybersecurity knowledge and appreciation for collaborative problem-solving.

IT 315: Introduction to Networking – Wiring Maury High School

This course featured straightforward lectures paired with complex homework assignments that demanded extensive critical thinking and additional technical research beyond the classroom material. A prime example of this was the final project, where I had to design a wiring plan for Maury High School. The task involved creating a clear diagram that mapped out the locations of each telecommunications closet, ethernet wall plate, the designated room for network equipment, and the cabling across the school's four floors. This was particularly challenging as I had to consider the maximum effective range of cat5e cables and maintain an organized, comprehensible diagram. After completing the diagram, I calculated the required

length of cable and listed the necessary equipment purchases. I then estimated the costs, factoring in a 20% surplus for scalability. Subsequent steps included planning the layout and equipment for each telecommunications closet, designing the building's firewall system, and determining the associated costs. Completing this comprehensive project took many hours, but I managed to finish before the deadline. My teacher was so impressed that he showcased my project to the entire class the next day, making this experience one of the most memorable highlights of my college career. It also reinforced the lesson that good work is always rewarding, and it taught me to take pride in the effort I put in.

CYSE 270: Linux System for Cybersecurity – File Permissions

I chose to highlight an assignment from this class because I believe proficiency in a Linux environment is crucial for anyone pursuing a career in cybersecurity. This particular assignment effectively demonstrates various commands available to a Linux administrator. In an article written by Shimon Brathwaite (2021), it states that “If you're interested in Cybersecurity, you will encounter a Linux environment. It will be in some administrative function for most people, where you may be required to pull logs or use a tool that is required for your day-to-day operations” (Brathwaite, 2021). This perspective was told in my first cybersecurity class, influencing my elective choices throughout my academic career. Opting primarily for courses focused on the Linux command line, I aimed to enhance my skills in task automation and shell script writing, even though it meant fewer coding classes. While I sometimes question this strategy, I have no regrets and am proud of the knowledge I've gained.

Written Communication

Throughout my college career, I have had to write a large number of research papers and narrative essays. I believe it is through this constant practice that I was able to refine my writing

style. Written communication is important for all fields of study as well as daily life. Michael McDonnel (n.d.) writes that, “Writing is a vital skill in cybersecurity. Even those in highly technical roles will be required to write clear concise technical documentation, procedures, and playbooks. Those involved in the assessment of risk, threats, and vulnerabilities will benefit from strong report writing skills” (McDonnel, n.d.). Moreover, as mentioned in a post written by Dan Brodnitz (2024) a study conducted by LinkedIn showed that communication ranks as the number one most in-demand for employers in 2024 (Brodnitz, 2024). Moving forward, here are my thoughts on some of the papers I have written that I am most proud of.

IDS 300W: Interdisciplinary Theory – Final Research Paper

The entire course was structured around a research paper that was due at the end of the semester. Every assignment and reading throughout the term were designed to support the creation of this single paper. Weekly, I engaged in discussion assignments and participated in writing workshops, each focused on a different detail of interdisciplinary research and the writing process. The class was challenging, from securing approval for my research topic to crafting detailed outlines for paragraph structure. Despite the difficulties, I am confident that this essay is the best I have ever written. My writing style has significantly improved, and I now consider it one of my strengths. Previously, I dreaded writing essays; they were time-consuming and poorly executed. However, I now have a solid understanding of the process and feel comfortable with academic writing. The effort to get my research topic on the ethics of grey-hat hacking and the implications of employing former hackers as cybersecurity professionals approved was difficult, but worthwhile. I thoroughly enjoyed reading articles and expanding my knowledge on the subject.

CYSE 280: Windows System Management – Research Paper

Reflecting on the experience of writing this essay, I recall that it was the final entry in the grade book. Even if I had opted out and accepted a zero, I would still have secured an "A" in the class. Yet, the thought of leaving such an important assignment incomplete did not sit well with me, penalty or not. I'm pleased that I decided to put in the effort voluntarily. The research was particularly engaging, and the knowledge gained may prove useful in the future. This experience reinforced the idea that taking shortcuts doesn't lead to success, and no effort is ever wasted.

Creativity

Creativity has always been a key part of my life and I believe it's an essential skill for anyone today. During my studies, I chose courses that really sparked my creativity. These courses helped me explore different artistic and innovative techniques and apply creativity to my academic and personal projects. This experience has made me value creativity even more as a tool for problem-solving and critical thinking. Looking at it with an interdisciplinary approach creativity is almost necessary even for highly technical careers. An article written by Alison Escalante (2020) mentioned that "The researchers from Australia and the Netherlands who partnered to write this study are calling for schools and universities to focus more on teaching creativity. Their study has found that creativity is a core competency across disciplines, which makes it crucial for future career success" (Escalante, 2020). This along with many other resources argue for the importance of creativity. Below is a reflection of some of the creative projects I'm most proud of.

ARTS 122A: Visual Communication

Visual Communication quickly became one of my favorite classes during my college career. Although it was not directly related to my major, I thoroughly enjoyed it. Ever since I

was young, I've had a passion for painting and drawing, so taking this class as a free elective was a refreshing break from my typical computer science coursework. I do love computer science, but it's nice to explore different areas now and then. In this class, I experimented with several new mediums. For example, we created a still life using charcoal, depicting a cloth, and under our professor's guidance, I learned to emphasize the dark and light hues in the artwork. Another project involved portraiture with oil paints, a medium I had not tried before, as my experience was mainly with acrylics. The layering and washing techniques were enjoyable, and I'm particularly proud of my portrait of Bob Ross. For our final project, we had complete creative freedom, so I chose to continue with oil painting and depicted my cat sitting on my dresser at home. I'm immensely proud of this piece and consider it my best artwork yet. Additionally, the class included a critique session after each project, where we discussed everyone's work for a day or two. This not only enhanced my communication skills but also created a pleasant environment to work in.

ITE 115: Intro into Computer Applications

This course covered a range of widely used computer applications, including Word, PowerPoint, Excel, and others. For each application, we were tasked with a project that required creative use. One such assignment involved creating a PowerPoint presentation about a personal hobby using minimal text while still conveying the message effectively. Each slide had a strict word limit, and points were deducted for exceeding it. The presentation also needed to be visually appealing, well organized, and readable. I chose to focus on my passion for video games, dedicating time to the layout, color scheme, images, icons, and text to achieve the desired appearance. I highlighted key words and phrases in yellow, enabling viewers to grasp the

concept of each slide in about 10 words or less. This project challenged me to think creatively within strict constraints.

ART 101: History and Appreciation of Art

This project marked a significant shift in my approach to not only producing well-structured documents but also making them visually appealing when appropriate. After drafting each slide in PowerPoint, I revisited them to reformat and redesign, ensuring each one stood out. From that point forward, I committed to putting my best effort into every assignment. Whenever it was suitable to add a touch of style to a document or presentation, I made it a point to do so.

Conclusion

As I reach the end of my college journey, this essay has been a window into the skills I have developed over the years. The nine projects I've shared highlight a learning path heavy in technical knowledge, clear writing, and creative thinking. They are more than just class assignments; they are the building blocks for my future. In the tech world, I have cracked codes and strengthened networks. My writing assignments turned into exercises in sharpening my thoughts on paper. And through creative projects, I've learned to see and solve problems in innovative ways. I am proud of what I've accomplished and excited to take these skills into my next chapter. This collection is more than a display of past work; it's the sum of my educational experiences and a foundation for what comes next. As I move forward, I'm ready to take on new challenges with the tools and confidence I have gained here.

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