

Reflection Essay

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Abstract

This paper is a reflection of my time at Old Dominion University and how the classes and the course work that I have been taken for the past year and the half has prepared me with the skills and knowledge I will need to succeed in the future. We will be going over the different artifacts, the thought process behind them and the takeaway from it.

Introduction

During my short time at Old Dominion University, while pursuing a bachelor's degree in cybersecurity. I have learned quite a bit about the various aspects of cybersecurity, but also the additional skills that some people might not think that applies to cybersecurity. These skills are a mix of soft skills and hard skills, each one can help me achieve a successful career within the professional field. Some of the more interesting aspects about the course work that I have done during my time here has less to do with the outcome of the work or what grade I would get on it, but rather the process of creating and solving the problems. This is what I would like to share within this reflection essay, as I go over some of my skill sets and artifacts from the classes I have taken and reflection on them.

Thinking on a wider scale

One of the first classes I had during my first year at Old Dominion University was IDS 300W a class that is designed to make you think about multiple disciplines to think about topics and issues on a wider scale. To give an example of this, think about if someone wanted to build a city somewhere in the mid-west. An interdisciplinary, would not only think about the city, but also how it would affect the surrounding area, in terms of agriculture, wildlife, surrounding inhabitants and how the city will impact them, etc. This class forced us to think about the wider implications of even the simplest scenarios. This culminated with a final paper that would, test us on our knowledge of the course material thus far and in order to do this we had to come up with a theoretical topic and how its impact could effect the current global atmosphere.

For the paper I chose to write about how if the government were to adopt crypto currency within their official currency structure(<https://sites.wp.odu.edu/nir/ids-300w/>) . This delved into how much resources it takes to generate a constant stream of revenue, the impact that it would have on society, etc. During the research I found that the concept of crypto currency being implemented within our current financial as economic factors like the fact that it is a decentralized form of currency by design which would make “trading mechanism and underlying technology of decentralized cryptocurrencies make them difficult to satisfy the function of legal digital currency” (Yao Yue et al., 2021). Or how on a societal base, the average person “knows too little regarding to theme and the adoption would not be possible in the whole world” (David Lucas Farai, 2020, p.48). The more I was doing research I came to the realization and understanding that this concept would have been impossible to implement within a regulated fashion.

The major takes away I had with this course was to approach every problem in a more critical mindset. Think about not only what the immediate solution is to the problem, but what other challenges could arise after the solution is implemented. This course is great and is going to help me think critically when I approach any cybersecurity topics within the future. There are going to be times within the field, when I am going to have to think about the outcomes of any action that I make, no matter what it is, and decide, if the outcome justifies the action.

Leadership roles

A interesting class that I took during the spring of 2024 was CPD 416, which was a leadership course, centering around the different aspects of leadership and how they apply within the work force (<https://sites.wp.odu.edu/nir/ece-416/>). We mainly did discussions on different leadership trends from companies all over. These they could either be from companies that are

succeeding within the current economic landscape or from companies that had struggled to overcome the obstacles that the years had brought with it and failed to adapt. The final paper that we were assigned was to look back on ourselves and see what type of leader we were and how could our leadership be either improved due to shortcomings or how would you make your leadership style work so that production is going smoothly, and the employees are happy/satisfied. It was interesting to think about all the different ways in which a leadership style should change or stay the same throughout the course of leading. This class gave me a deeper insight on how leaders function and is going to be very helpful within the cybersecurity field, whenever I must work within a group setting.

Setting up Networks

Taking a turn into the more technical skills, some of the classes that I have taken so far, has been centered around the field of information technology (IT), courses that has helped me better understand how networks are set up, and how the flow of signals are routed throughout a living space (<https://sites.wp.odu.edu/nir/it-315/>). The process required us to make a replica of our house and every connected device that is operating within the living space. We had to go through and show how it was connected to the routers, how the switches worked, and how the router is connected to the ISP provided modem. During this exercise, I had to think how the routers and the switches are intertwined and connected to each other. This is a skill that will help me understand how the networks we use daily basis, work and how they can be better protected.

Working with Python

One of the first coding languages that had to take when pursuing my degree in cybersecurity was python. This class was interesting in that it was the first ever coding class

that I had taken during my time at Old Dominion, which helped my get into other programming and programming adjacent classes like Linux operations. Doing assignments were almost chalked up to trial and error, as trying to learn the material by myself was a bit difficult. There were assignments like learning about for loops and while loops, where you have to set a string of characters like `vehicles = ["plane", "car", "tank"]` then you would have to do for vehicle in `vehicles`: and then it will give you an output of plane, car, and tank in a vertical column. However, an assignment that we had to do that involved this was one in which we had to program the python program (like PyCharm) to calculate and understand the legal voting age (<https://sites.wp.odu.edu/nir/cyse-250/>), which was a little complicated to understand, but it became really easy to understand after I went back over the course material. Looking back this course was fun to do, and it has given me a skill in a programming language that will come in handy if I ever decide to expand my knowledge with programming languages in the future.

Learning with Linux

One of the most essential courses that we must take during our time within the cybersecurity program is being able to properly work within a Linux based operating system. This was the bases for my CYSE 270 class where we learned concepts like password cracking with basic tools like John the ripper and how to add users and root through the files using permissions(<https://sites.wp.odu.edu/nir/cyse-270/>). To go more in depth with the add user assignment, I had to go in and manually create users and make files within these user's preferences on them. Depending on how these permissions are set, the other users will not have any access to these files that are assigned to other users. This helped me understand more about Linux and the intricacies that are involved with the program, so that I can use the operating system more effectively in the future.

The following semester, I would further expand on my knowledge of Linux with the introduction of cybersecurity techniques and operations. This class would expand my knowledge of Linux commands and show us different ways in which we could use Linux commands and lines of code to infiltrate other operating systems and how these skills could be used within a real-world setting. Sending payloads over to other machines to gain access to different operating systems were some of the most interesting projects we did of the course. However, simple assignments like detecting messages using a program called Wireshark was also interesting (<https://sites.wp.odu.edu/nir/cyse-301/>). This was an assignment where we had to ping different operating systems to send message packets through, then read them to uncover messages within the packets. This class is one of the most important classes I have taken here on a technical bases, as it shows the intricate levels of operations within a Linux operating system, that will no doubt, be a useful steppingstone in a career in cybersecurity.

Conclusion

Overall, the skills that I have gained throughout my time here at Old Dominion University has been pivotable in my learning experiences. They will help me on both a technical and theoretical manner as I continue to progress throughout my time learning here at the university as well as when I get out into the real world. The critical thinking skills that I have obtained from the interdisciplinary classes has been essential to my learning and stands as a reminder that even if a course seems to not like it doesn't make sense for your curriculum, it can be a huge help to your overall success. Expanding my knowledge with the skills I have gained will allow me to better apply them within a professional setting. Ultimately the skills that I have gained has allowed to approach cybersecurity with more confidence and wisdom then I had before and I cant wait to apply in within a professional setting.

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