

Personal Narrative Essay

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I am currently studying Cyber Operations at Old Dominion University. There have been many events and time periods throughout my life that have led to my decision of a Cyber Operations major and career path. I have always thought that I would be an engineer of some sort because I grew up in a family of engineers. Both my father and paternal grandfather are engineers. I think that because I grew up around technology, my interests and career path might still be in Science technology Engineering and Mathematics, but not specifically with engineering.

Throughout my whole life, I have always been the personality type to engage with puzzles and to physically make things with my hands. I always enjoyed playing with Legos and K'nex which fueled the side of me as an engineer. Legos are the classic children's toy which are "plastic building-block toys that rose to massive popularity in the mid-20th century" (Augustyn, 2025). I had such fun forming an idea about what I would want to make and going through the steps of trying to create the idea in my mind. Ultimately, troubleshooting over and over again making it more like what I was thinking of with my original concept. Being born in 2002, I could not help but have technology around me as I grew. Video games in particular are a keen interest of mine and I still remember each game along the way that I liked starting with old Mario games and playing more recent titles like Factorio. A genre I have always been fond of is the puzzle genre because solving problems is fascinating to me. I like to see a challenge and use my brain to carve out the solution. These puzzle games and technology in general have helped cultivate and steer me toward a career path involving computers.

In middle school, I had my first introduction to an engineering-type setting in shop class, where we were tasked with designing something that had to complete certain objectives set by the teacher. This class had everything from building bridges out of balsa wood and glue to creating robots out of Lego Mindstorm. Mindstorms are a subset of Lego “which center on a programmable robotics pack containing customized bricks, were first launched in 1998, and went through multiple iterations of increasing complexity over the succeeding years” (Augustyn, 2025). For this class specifically, we used Lego Mindstorms to create a robot capable of navigating a maze. This was my first opportunity to “program” robots. Even though it was simple block coding, it still gave me a solid introduction into a real programming environment. “Block coding turns programming into a drag-and-drop process by converting text-based code into visual blocks. Each block contains real code and, when they’re combined, they create animations and games” (Gilbert, 2024). Another unit involved designing a small car that would use a CO2 canister to propel itself forward. The challenge in this unit was to make something that was aerodynamic enough to go a certain distance in the least amount of time. I truly realized I enjoy creating objects that work and working with computers.

During my time in High School, I took several different classes in coding and computers. The first class I took during my junior year was a basic programming class but it was not what I was anticipating it to be. I was introduced to HTML which is “the markup language for encoding Web pages” (Hemmendinger, 2024) and made a website with different pages introducing myself to the language. We used a block coding which was valuable for me because the course still challenged me to solve problems that the teacher had set for us and helped build my creativity in a new way.

During my senior year of High School, I took an introduction to Computer Science course. This was my first formal introduction to real coding and learning a computer language. This course had me learn the computer language Java through a course called FCPSKarel. In this course, we had classes called turtles that we could control with different predefined functions. The course tasked us with different challenges to test our ability with different coding concepts. One of the turtles we programmed had to be able to find its way through any custom maze, so we could not program it to move in a set way, but a dynamic way that would change its behaviors based on where it was in the maze. For the final project, our teacher allowed us to create a small pre-approved game. I chose to recreate the card game Blackjack, a game I grew up playing with my family. This introductory computer science course made me realize that I actually do like coding and problem-solving. After the year of Computer Science in high school, I realized I wanted to do something with computers and coding, but I did not want to just study Computer Science and ultimately decided to pursue cyber security.

The first two years of my college experience were filled with learning base-level cybersecurity topics like policy. I took Computer Science (CS) 150, an introductory course to Computer Science, but a far more in-depth dive into the technical side of computer programming. I learned about the different data types, how to use input and output files, how to create functions, and how to implement classes. At Old Dominion University, the computer language used in all computer science courses was C++. “C++, version of the traditional C programming language augmented with object-oriented programming and other features. C++ is an ‘intermediate-level’ language, meaning that it facilitates ‘high-level’

programming—i.e., in the abstract—and ‘low-level’ programming of actual hardware. This utility at both ends of the programming spectrum has made C++ useful for many systems requiring careful allocation of memory, such as Web browsers, search engines, video games, movie effects, financial tools, flight software, and space-exploration equipment” (Volle, 2024). This made me very familiar and comfortable with the language. Towards the end of my second year in college, I was talking with my advisor about my career path in Cybersecurity and I expressed that I was interested in a more offensive position in Cybersecurity. It was decided I would switch my major to Cyber Operations which fits more in line with what I want for my career. This was the most important event in my college career because this was the push in the direction I am taking now with my courses. The courses that I took after the major swap made me more and more interested in the new field I would pursue.

Following my major change, I am fascinated by my courses more than ever. After CS 150, next was CS 250, a more in-depth look on how to work with classes and other abstract data types in C++. After CS 250, I then took CS 361, this course helped me learn about some data structures such as, linked lists, stacks and queues, worst case complexity, maps, trees, and many others. Other significant classes in computer architecture, CS 170 and CS 270, helped me understand the basic logic of modern computers and understand how binary is transformed into instruction sets. I next took Fundamentals to Computer Engineering, ECE 241, which taught me how to use breadboards, and how to program the breadboards using the computer language VHDL. The final project had us design an ALU that took in two a 4-digit binary numbers to operate on. Later, I took ECE 346 which taught me about microcontrollers and how to program then using a low level language called ARM Assembly. This course trained me to think about

code in terms of bits and how to use those bits to control lights and displays on a breadboard. With the Cyber Operations degree, I also took courses that focused more on how to ethically hack, which piqued my interest. I learned some of the procedures an ethical hacker should be going through like reconnaissance, scanning, gaining access, maintaining access, and covering tracks. In MSIM 470 we were given a task to gain access to Metasploitable 2, which is a virtual machine that contains a version of Linux that's meant to be vulnerable for testing purposes. I then had to go through the different stages of scanning the vulnerabilities with Nessus, which scans different types of devices for security vulnerabilities, to see what vulnerabilities I could take advantage of. After the reconnaissance, I would then use Metasploit, a penetration testing software, to go through with the attack. The classes where I have to become an ethical hacker to complete coursework are very interesting and exciting to me. These are the types of classes that make me not regret the path I have chosen, and I am excited to see where this path will take me in the future.

References

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