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Cybersecurity Internship: Chesapeake’s Police Department’s Information Technology

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Cybersecurity Internship: Chesapeake’s Police Department’s Information Technology

# Introduction

I always knew that I wanted to protect others from threats, whether it was domestic or foreign. My major in Cybersecurity enables me to protect others from criminals threatening their safety on the digital landscape, such as cyberstalking or storing illegal records. Throughout the years at Old Dominion University, I decided that after I graduate and obtain my degree, I want to focus on being a Digital Forensics Analyst. While I have been looking for job opportunities related to the career I plan to pursue, many of them required me to have at least two-year experience in information technology. I knew that I wanted to apply for an internship relating to a law enforcement agency since I wanted to acquire real-world experience that would benefit my future as a Digital Forensics Analyst. I needed to look for an internship that had an information technology department to gather some necessary skills too. Luckily, I contacted local police departments to see if they provided any internship programs for college students around the summer that correlated with my needs. Chesapeake’s First Precinct fulfilled these requirements, which would allow me to mostly gain information technology experience and converse with other Forensic departments. The knowledge I gathered from the internship was software and hardware utilized within criminal justice agencies, troubleshooting computer-related issues, and managing forensic evidence.

# Organization’s History

## How the First Precinct Started

The First Precinct is considered the police headquarters for Chesapeake and was created in 1963 when Norfolk County decided to merge with the city of South Norfolk. Those working in the First Precinct are majority sworn police officers, and civilians are in the minority. Although it is the police headquarters, the First Precinct has jurisdiction over and deals with crimes in the Great Bridge area in the city of Chesapeake. Although the First Precinct focuses on crimes in a specific area, they sometimes have to collaborate with other specialized groups or other government agencies to ensure the safety of the community too. Create a space where people that are residents in the city, the government, and those working in the department encourage community engagement and enable community policing. Their main responsibility is to uphold the law and safeguard individuals and property. Officers within the department have the legal authority to apprehend suspects by means of answering complaints and calls for assistance when suspects are read their Miranda Rights. There are many divisions within the department crucial for the purpose of conducting the tasks of police officers, including Property and Evidence, Patrol Operations, Criminal Investigations, Central Records, and Police Information Technology. The First Precinct was meant to deter people from engaging in several types of criminal behavior, from low-level offenses such as disorderly conduct to high-level offenses such as homicide. They utilize crime prevention and detection techniques to ensure the welfare of the community. Many police officers, in addition to several divisions within the department must utilize up-to-date investigative tactics to handle a vast number of issues, especially crimes that are becoming more prevalent in the digital landscape as technology advances over time.

## Why Police Information Technology became Implemented?

Police Information Technology had not existed since police officers and many divisions previously completed tasks by writing. As technological innovations become introduced to society, those devices became relied upon by the police department to perform their duties since it is more efficient and less time-consuming. Relaying information will become easier when transferring it to all divisions. In order to ensure that the devices function properly, the department created the Police Information Technology division. The department established the Police Information Technology division in the late eighties, the first machine being a Motorola, which had limited capabilities. Technology slowly became adopted by the First Precinct as the years progressed, and around the early two-thousands, officers and other divisions began to rely heavily on technology. The First Precinct manages Police Information Technology for all the precincts within the city of Chesapeake.

## Training

A week before I started interning at Chesapeake’s Police Information Technology, I was notified that I had to take Criminal Justice Information Services (CJIS) course. CJIS Security Awareness training is necessary when working for a government agency since it provides me with information on what to do when accessing sensitive data on somebody since I will more than likely come across it since I will be working on devices that store it. The training ensures that once I see the critical data on a case or criminal history record information, I notify my supervisor that I am privy to that information. The training course stresses the importance of obtaining authorization and not misusing the information I become privy to by disclosing, modifying, etc., other than the intended purpose I am supposed to do. If I fail to adhere to and disregard the CJIS Security Awareness training I will face significant consequences, it can either be suspension or prosecution from the state and federal government. At the end of the training, I took an exam and received a level 1 CJIS certificate enabling me to have access to Chesapeake's First Precinct and intern there. I had to sign a CJIS Security Addendum, and my supervisor had to sign it after I received my certification. I also had to read the Freedom of Information Act (FOIA) once I got to the office to ensure that I comprehend how important it is to keep the information I see as confidential. I read and signed several documents outlining the expectations I must uphold as an intern at the First Precinct.

During the first week of my internship, I visited all the divisions within the First Precinct. Through training, I learned that the operating system that most of the divisions rely on to complete their tasks is Windows. From Windows 7 to Windows 10 Pro since it is easier to implement across all users and supports all the software needed for police officers and other divisions to utilize. Then, I visited all the storage rooms that house all the cables and extra hardware needed for later use. I get to know how each division operates by demonstrating to me their daily tasks and how they are integral to reporting, documenting, and investigating. Although I had some experience with going through an internship to gain more understanding related to a different career I tried to pursue in the past, I became excited about obtaining knowledge outside of a classroom environment and working with other professionals related to my college education.

# Management Environment

While interning at the First Precinct, the Network Services Coordinator, System Analyst II, and Client Technology Specialist II have been wonderful. The Network Services Coordinator enabled me to gain some awareness of how Police Information Technology and other divisions operate and work with one another. Since I wanted to pursue a career as a Digital Forensics Analyst, on some occasions, he scheduled times that I could shadow those who worked in the Forensics divisions. He explained the duties that his role as the head of the division must take and addresses how important it is to educate others on following best practices when utilizing devices issued by the Police Information Technology. Throughout the internship, He provided insight into how he got to his position as the Network Services Coordinator and how his life experiences and education enabled him to develop a career as the head of the Police Information Technology division. Through his guidance, he provided knowledge on how some government agencies function and gave me the opportunity to experience other divisions that correlated with my interests.

The System Analyst II was the person I communicated with on a daily basis and provided insight on an ongoing issue on developing my skills and starting to work or continuing my degree and receiving my master's degree. Although there is one Police Information Technology division, he explained that Police Information Technology is further separated, where Client Technology often works with the hardware issues and sometimes software issues, whereas Systems Analyst considers software issues and rarely fixes hardware issues. While working under his supervision, I was able to obtain some new technical skills by going to other precincts and responding to their information technology issues. Instead of doing a lab to gain experience, I intern at Police Information Technology and get assigned various tasks where I can utilize my skills in a professional environment. He had direct supervision of them. Although our education had some similarities, there were vast differences. He told me that many professions in similar careers consider experience to be a notable factor since they will receive resumes of potential applicants who graduate with degrees in technology. Initially, he went to college for another degree that differed from the technology field, but as time progressed, he found that he had a penchant for working in Information Technology once a position became open and pursued a degree to further his career. The thing that separated him from others applying for the job was experience. Listening to his advice made me realize that getting more experience would be the priority and receiving more education once I choose to advance my career.

I also collaborated with Client Technology Specialist II regularly throughout my internship. While spending time in Client Technology, I was able to focus on hardware and software problems with multiple types of machines. The Client Technology Specialist would answer any questions about tasks given to me by the Systems Analyst II. If I provided some ideas that failed to solve the problem, she would explain why my suggestion did not work. The Client Technology Specialist provided me with a space where I could demonstrate my skills and receive constructive feedback from her on how I approach some issues and think critically. She would answer any questions about tasks given to me by the Systems Analyst II. Principally, I am grateful for the guidance given to me by those working in Police Information Technology. They taught me many lessons and gave me more knowledge on the best course of action to take once I graduate from college.

# Internship Duties and Responsibilities

While I was at the First Precinct in the city of Chesapeake, my role as an intern at Police Information Technology was to support and maintain the devices and products issued by the division. My duties and responsibilities would include a variety of tasks, especially having to do with the hardware and application software installed in the devices. Throughout the internship, I had to provide exemplary customer service when responding to those needing assistance with the technology implemented in all the precincts. Most of the tasks consist of me examining technical issues and finding solutions in an efficient manner.

For instance, in order to maintain the devices and products issued by the Police Information Technology, including the First Precinct and other precincts in Chesapeake, I had to keep a record of them. I would have to utilize the web application to label them by precinct and division. The web application enables me to manage where devices are stored and where it is going to transfer. Also, if the device is no longer in use, I could erase it from the system or specify that it is in storage. This is beneficial because keeping a record will enable me and others in Police Information Technology to know where a device is by simply typing the label. I would also utilize another web application to see which users used the device provided by Police Information Technology since most of the devices in the precincts register to one user. This is important because there was recently an issue with somebody utilizing a laptop inappropriately and had to figure out who misused it.

Another task I had to perform as an intern was updating the laptops since Police Information Technology was distributing new ones throughout all the precincts. I would help with trading the older models of the laptops for new ones and make sure that users would create a backup or remotely go into the system and create a folder containing all their important files before giving the replacement. Then I would have to choose the accurate image for the laptops since several divisions within Chesapeake's precincts have specific software needed to complete their tasks. I would also have to ensure that the correct permissions are given to the right users since somebody working in the administrative division should not have access to modifying all the files stored in the administrative division that they did not create.

Another responsibility for me is that all the precincts in Chesapeake had to have docking stations to maintain compliance since the company that gave us the body cameras and other tools supplied us with several docking stations when renewing a contract with them. The Systems Analyst II and I would have to go offsite to other precincts and install them using tools such as a drill and screwdrivers. Then, we would ensure that it is installed right by putting all the cameras back on the dock and see if there were any network issues. If there were issues, the body cameras would flash a red light. This is important since all police officers must wear body cameras and record their interactions with the public. The docking stations enable the video recordings to be uploaded to a database where they will be stored and sorted.

Another responsibility was to respond to technical issues by those working at the precincts in Chesapeake. There were various problems that Police Information Technology had to solve. It could be as simple as connecting a printer to a wireless machine or replacing hardware. Sometimes, Police Information Technology and I would have to take parts from a device no longer in use and install it on a user's device. Most technical issues came from fixing the laptops since there were always issues with the software not working correctly or networking problems. Although it took some trial and error, trying to solve issues, thinking critically, and gaining knowledge from those in the division helped me find better approaches.

# Skills and Knowledge of Cybersecurity

 Although most of the tasks I got assigned throughout my internship at Chesapeake’s First Precinct are similar to working as an Information Technology Help Desk Specialist, there were some things that involved topics I previously learned about cybersecurity. For instance, working in a governmental agency, such as the local police department, it is imperative to think about informational security. It is crucial for Police Information Technology to maintain the confidentiality, integrity, and availability of information. Confidentiality is when sensitive information is not disclosed to people unless they have permission to access the sensitive information. Integrity is when sensitive information is not manipulated or modified by an unauthorized user. Availability is when sensitive information can be accessible by authorized individuals. In order to mitigate access to information and safeguard it against unauthorized users who work in the divisions of the precincts in Chesapeake, there is a system in place. Applying the principle of least privilege when having to enable users working in the precincts to read or modify specific information and utilize specific software is essential. For instance, the Police Photographer division should not access any case files in the Criminal Investigations division. Oftentimes, I must utilize the terminal to collect information in order to fix technical problems, such as IP address, etc., or find the serial number by typing a command to label the device. I had to perform tasks on the terminal by utilizing network scanning techniques to discover users and specify the system and its connected devices’ state.

 Although I took classes on executing techniques enabling me to access or gather information undetected, it was usually related to machines having a Linux-based operating system. I completed assignments at Old Dominion, where there is a Windows operating system, but it’s usually on the side of completing an attack on the client side. While interning I have been taught how to utilize keys that will enable access to folders and files on Windows. This is facilitated by typing a key that allows me to the backdoor of a drive. It expanded my knowledge of how to utilize hacking techniques on Windows. I was also familiar with RSA tokens providing an extra layer of security for authentication purposes. During the internship, I got a more comprehensive understanding of how they were managed and implemented across the precincts. The skills and knowledge I acquired from the past years helped me when applying them to my tasks. Enhancing those skills as time progressed too happened. The skills I utilized gave me a better insight into the techniques used to manage and protect systems.

# How did Old Dominion University Prepare me for an Internship

Old Dominion University’s curriculum enabled me to obtain the necessary knowledge and skills to accomplish my internship. I could easily get accumulated to interning in an environment related to my studies. Although I learned some concepts in handling a system and safeguarding it against potential threats, it is difficult to imitate an actual environment, such as a government agency, since there are limitations on what actions I can execute. Communicating with others can be complicated since most assignments are completed solely on my own and call for little to no collaboration with my peers.

Completing assignments in a virtual environment enabled me to gain some hands-on experience. Virtual environment assignments associated with group and user accounts and creating files helped me. There I could make mistakes with little to no consequences that would potentially cause my machine to encounter irreparable damage. However, listening to a professor teach you and working in a virtual does not supersede experience at an internship since it enables me to develop beneficial workplace skills and see how my skills influence the work, I did at the First Precinct.

# How the Internship Fulfilled my Goals

The three learning objectives I got from my internship at the First Precinct in Chesapeake are software and hardware utilized within criminal justice agencies, troubleshooting computer-related issues, and managing forensic evidence. As time progressed at the First Precinct in Chesapeake, I developed knowledge of the three learning objectives through the internship and changed the previous perceptions I held about working in a government agency.

The first learning objective came to be accomplished during my training period at Police Information Technology. There various software and hardware are utilized to facilitate the operations of the divisions within criminal justice agencies. For instance, many of the divisions from all the precincts in Chesapeake use the software New World, since it offers a variety of products and services. New World is used for administrative purposes due to offering services such as record management or for investigative reasons such as geographic information mapping. The software Sophos is used exclusively by the Police Information Technology division and provides services for management and network security. As for hardware, many police officers have transitioned from utilizing heavy and stationary devices to using Panasonic Toughbooks. These devices are better equipped for police officers to utilize due to their robust nature and ability to move from place to place. Body cameras and docking stations are other examples of hardware utilized in criminal justice agencies by police officers too.

The next objective was troubleshooting computer-related issues. Although I had some experience with fixing technical issues, it was minor compared to what I experienced while interning at Police Information Technology. While there, I was able to expand my knowledge of how to approach a variety of troubleshooting problems. I used some tools and techniques that I was unfamiliar with. Although I knew that the process could be time-consuming since the technical issues could happen due to old software or faulty hardware, there were some instances where I was perplexed and needed advice.

The third learning objective has been achieved too. Interning at the First Precinct gave me the opportunity to see how those working in Digital Forensics gather, use, and store digital evidence during an investigation. I learned about the different tools and techniques used to analyze digital evidence. Initially, I did not know the process of collecting digital evidence. They would use a faraday bag for phones or other hand-held devices since it prevents an individual from accessing the device remotely and modifying the data. They would also put devices in airplane mode to prevent it from shutting down before they get to analyze it. Also, to extract data from a hand-held device, they would put it in a box that prevent any interference and capture the data. When collecting evidence from a computer, it differs from collect evidence from a hand-held device. It is best to unplug the computer since a faraday bag is too small. Then, a Forensics Analyst will report the tools used to extract the data and their findings. Finally, the data will be stored in a locker, and its chain of custody will be thoroughly documented. Once the forensic evidence is used in a court case to prove that a party is guilty of committing a crime, the Forensic Analyst will provide expert testimony.

Overall, the internship gave me the opportunity to understand the inner workings of a criminal justice agency. The learning objectives that I was able to accomplish through the internship will help me develop my career.

# Motivating Aspects of the Internship

The most motivating aspect of interning at Chesapeake’s First Precinct is that although I am interning in Police Information Technology, I get to help others. Throughout my life, I knew that I wanted to choose a career that would enable me to aid those who were in need and provide support. Police Information Technology and I facilitate services and products that help the duties and responsibilities of police officers. The use of Police Information Technology services helps police officers to accomplish their job more effectively and solve investigations. The devices used by police officers offer a secure and more efficient method of protecting the community. It does not only serve to protect citizens but also police officers. Although we have limited interaction with the community, Police Information Technology and I provide assistance in the background.

# Discouraging Aspects of the Internship

Despite the fact that I had some experience with doing an internship previously, I found that interning at Police Information Technology has been my best. One aspect I found discouraging about the internship is that those who procure our services have unrealistic expectations. Some people of the people we offer services and products to want a technical issue fixed instantly without any regard to thinking they are not the only ones having problems. It is a process when solving issues. Oftentimes, they ignore the e-ticket system and come up with issues by the end of the workday. Then, when educating those who used devices issued by Police Information Technology, they would ignore our advice and make the same mistakes again. Overall, there is little to no criticism about my internship at the First Precinct.

# Challenging Aspects of the Internship

 One challenging aspect of the internship is not having the ability to have administrative rights temporarily. Not having this privilege made it difficult for me to complete my tasks since Police Information Technology needs administrative rights to solve technical problems. Administrative rights give me full access to all the systems in all the precincts in the city of Chesapeake. I would have the ability to modify security settings, access all the folders and files in devices, make adjustments to user accounts, and install hardware and software. However, the only way to get into the systems and devices needed permission from those in Police Information Technology to enter their login credentials. I felt awkward about doing this since I had interrupted them from doing their job.

 Another challenging aspect of the internship was interacting with others. I am an introvert and had some difficulty with communication. At the beginning of the internship, I rarely initiated a conversation and only provided input when necessary. Luckily, as time progressed, I gained the ability to effectively communicate with others and become more exploratory about the assignments I have been given.

# Preparing for the Internship

Although the experiences and knowledge I gained with internships are vastly different, some of the qualities listed helped me become successful. It made transitioning from a classroom environment to a professional environment easier. However, one of the qualities listed, I gradually possessed over time made my experience better. I would recommend that interns in the future be able to become proactive, be able to possess open-mindedness and be able to effectively communicate to prepare for an internship at Police Information Technology.

Being proactive aids in preparing interns for success since those possessing that quality are developing their skills. When tasks are assigned, you do not put minimum effort into them, instead, you strive to do your best beyond your expectations. The type of interns that have this quality will focus solely on the tasks at hand and will not be easily distracted. They anticipate issues and seek for a solution. Instead of the person in charge of giving you assignments, you complete them without them telling you to do them, and find new opportunities. Proactive interns will plan ahead for the future and create goals and objectives that further their development. Interns will have the drive to gain more knowledge and gain some awareness of their weaknesses and strengths. They will try to obtain knowledge through a multitude of resources in an effort to improve their skills.

Being open-minded enables interns to acclimate to their work environment. People in charge of the interns do not expect interns to do the same tasks every day, the people administering tasks may feel that a change in responsibilities will help interns. Oftentimes, interns having this quality can multi-task without difficulty and try new opportunities too. While interning, you will encounter people that may have differing opinions from you. They will give you recommendations that you may feel are not the best method, and open-minded interns will be more receptive to the advice of others to avoid possible confrontations.

Being able to communicate effectively with others will provide interns the opportunity to perform their responsibilities and duties efficiently. When tasked with assignments that call for collaboration, communication is an imperative factor in efficiency. Communicating strengthens camaraderie. If you or any of your peers encounter problems with an assignment, you and your peers offer advice and share ideas on how to approach that particular issue. It helps you gain new perspective. Effective communication with peers presents a better analysis of your talents and performance. Productive conversations and efficient planning leads to positive environment.

# Conclusion

My key takeaway is that I did not only develop professionally but also personally. Although I worry about having issues applying my technical skills in the real world, I knew my lack of interpersonal skills would hinder me. I mostly kept to myself unless I had to participate. As time progressed, I could build a rapport with others and express my interests and concerns. Although most of the hours I spent consisted of working with information technology, I am expressing my willingness to explore specific divisions aligned with my plans for the future. If I completed any of my tasks, instead of waiting for somebody in Police Information Technology to assign me another task, I would approach them and see if I could help them. Also, if days were slow, I would utilize my free time to ask my peers about new technologies and other knowledge. My personal growth has the ability to apply it to situations outside of the internship.

My internship at the First Precinct in Chesapeake will influence the remainder of my time in Old Dominion by enabling me to recognize that some of the tools and techniques I used to accomplish tasks connect to some of my courses. I can apply this and gain a deeper insight into the significance of deploying these tools when learning at school. To complete my tasks in college, I use a virtual environment or write reports, but seeing police officers and other divisions within the precincts in Chesapeake use my work to protect the community is a great feeling. I am grateful that Old Dominion taught me the tools I needed to create an impact.

My internship experience will influence my career path by attracting future employers. My internship experience helps me appear more of a viable candidate since I will need less training and can manage more duties. As I previously stated, in order to be a Digital Forensic Analyst, I will need some experience in information technology. I became proficient in various tasks, from fixing technical problems for numerous devices to managing user accounts. Also, I know about how a law enforcement agency functions and the important security protocols I must follow when accessing sensitive information. I also had the opportunity to shadow a Digital Forensic Analyst and gain important information on the duties and responsibilities of their occupation. I got to see the all the stages of handling digital evidence. My internship experience will affect my career path with setting me apart from applicants trying to pursue a similar career path in Digital Forensics as me.