

Fall
2019

CYSE 368 Final Paper

FINAL PAPER ABOUT MY INTERNSHIP AT THE UNITED STATES
GOVERNMENT
ERIC TRAN

Table of Contents

Introduction.....	2
Beginnings of the Internship.....	2
Management Environment.....	3
Duties and Responsibilities.....	3
Skills and Knowledge of Cybersecurity.....	4
How ODU Prepared Me for This Internship.....	5
How the Internship Fulfilled my Objectives.....	5
Motivating Aspects of the Internship.....	6
Discouraging Aspects of the Internship.....	6
Challenging Aspects of the Internship.....	7
Recommendations for Future Interns.....	7
Conclusion.....	8

Eric Tran

Professor Saltuk Karahan

CYSE 368

30 Nov 2019

Final Paper

Introduction

When deciding whether to stay with Newport News Shipbuilding or working for the United States Government, I decided to go with an organization that allowed me to work with a more important mission. Starting out in the government job, my initial objectives were to learn more about cyber security and cyber operations within the government and how it differed from private industry, learn about cyber and how cyber topics could be implemented into other aspects of the organization, and improve my understanding of the world and network with as much people as I can. My internship thus far has been very rewarding and the amount of personal growth I have gone through has been extraordinary. I have learned new things relating to my job and other future opportunities, learned a lot more about world events, and learned even more from the people I networked with and shadowed.

Beginnings of the Internship

The organization is the United States Government, which was official in 1788 after the signing of the Constitution. After many trials and tribulations, race issues, wars with foreign powers, and power struggles, we are now 50 states strong with a powerful Navy and Army. Our currency reign supreme, and our country is the symbol of freedom, a coveted land for many. Now a days, the United States is focused on several fronts, dealing with terrorism domestically and abroad, while focusing on power competition with China, as well as defending against Russia's continued nuisance in cyber and territory grabbing. All while also keeping our allies satisfied and preventing the spread of China's influence into third world countries through their belt and road initiative and debt traps. Democracy all over the world is facing their troubles, but America will prevail as it always has.

The initial orientation introduced us to the organization and how it worked. We got to see how each component worked together and representatives from each department gave us a summary of what they did. From there, we went through training after training making sure we knew procedures and what is expected of us. Taking the oath was chilling and I felt like I finally made it when we were all in the same room listening to the speaker who gave us the oath. I was also in awe when I saw the seal, thinking about all of those who came before me who also stepped across the seal. Some of the greats like Presidents and directors, along with legends in the organization.

Management Environment

My division manager, division deputy manager, and direct branch manager have all been amazing. Through interactions with the division manager, she has given me so much insight into the organization as a whole and more localized, as a department. She took time out of her day to sit down with me and explained every aspect of the chain of command and what each branch did, as well as provided career advice to me when I asked her about her experiences and how she got to where she is today. The first meeting and following meetings I had with her, really inspired me to work at this organization in the future. The way she spoke was soft and inviting, and she conveyed confidence and intelligence as she spoke, which really solidified her leadership.

The division deputy once worked in the same position title as I am before and knows several languages. Through several interactions with him, both initially at the beginning of my internship and daily, I got to know him more as a person and he also provided several professional advices. The deputy gave me advices on my work and reviewed several finished products that I submitted for review. He provided new insights and supported my curiosity and my numerous new techniques I brought to the team. Some of the languages I knows includes Indonesian, Chinese, and Thai. When I asked him for advice, he suggested I should learn the language by immersing myself and going to classes since in class, you can't veer off course or be distracted.

My direct supervisor, the branch manager is someone who I interact with daily and most often. Through our weekly meetups, I can share what I learned and what I did that week and he would always be there to bounce ideas off of. One of the most effective aspects of his management was that he supported my ideas and allowed me to go about with freedom. I was able to explore every opportunity and he also volunteered opportunities for me to explore as well. Since the first day, my branch manager has guided my internship and given me guidance on issues I had questions on. He clarified my job responsibilities and gave me multiple assignments to better my understanding and tradecraft. Overall, the leadership in my division is impeccable and I am truly grateful to have had amazing leadership on my first go around. The leadership gave me inspiration and they are people who I look up to and hope to one day be like. Their success and mannerism are respectable and as I progress through my internship and future career, I hope to copy some of their aspects and meld it into my own.

Duties and Responsibilities

My internship with the United States Government involved many unique and interesting job duties and responsibilities. I supported mission by providing detailed products to further move mission, confirm if mission is on the right track, provide more information for mission, or provide insight. I delivered finished products to requests by doing open source research, as well as classified research, all in all, performing all source research. By doing open source research, I had to be trained to use tools that would help me during my research.

On top of the major duties as described above, I also assisted with other projects and written products. One such case, I contributed to a product that reached the White House Situation room and was reviewed by the Vice President and other high-level staff and committees. Another project I assisted on consisted of me studying the media of several

countries. I would analyze radio stations, television programs and companies, internet providers, newspaper companies, and anything else related to the media. Once I have gathered all of the data and sources, I placed them into a formatted template and produced a media report for each country assigned to me. By being a part of this project, I learned a lot about different cultures and how news stories are disseminated from smaller sources to national news sources.

Another job responsibility given to me by my division manager and is also mentioned in my job expectations is to learn about the organization I am serving and network with those at my same level and those above of me. I took that to heart and immediately became the Student Vice President and continued to network with everyone I could and cement lasting relationships with them. I found this place to be extremely unique because I have never worked at a place where networking was encouraged, and everyone was so engaging and open to meet new people and reciprocate equal interest in networking.

Skills and Knowledge of Cybersecurity

Having gotten the Security+ certification and interned at Newport News Shipbuilding as a cybersecurity intern, I found this organization to be a great place to review a lot of what I learned and practice in new topics. Over the course of the internship, I was exposed mostly to VPNs, the cloud, webservices and cookies, as well as hacking methodologies. By taking trainings, I learned various techniques and strategies to accomplish research and cyber activity. I was able to learn and soak in the lessons I learned because it has real world impact and implications. Having set up VPNs at my last internship and through various labs, getting a chance to see it in use for a different purpose is fascinating.

Going through classes, I learned cyber topics parallel to ODU lessons, like vulnerabilities and social engineering. Having created phishing emails and used Metasploit in labs at ODU, I got to understand how these things worked. I was amazed to see tools I have used being taught to me again, but in a new perspective and in a new way. Although a lot of the material was review, the teacher taught us in a more understandable way and used phrases that made it easier to understand and remember the content. Overall, the skills I came in with were refined and improved upon. The knowledge I came in with gave me a better understanding of the infrastructure of the tools I use and threats that lie out in the world which I must be cautious of. With the technical understanding, I can visualize what I do and why it is done that way, which helped me throughout my internship when I am performing my main duties.

How ODU Prepared Me for This Internship

ODU gave me knowledge and experiences that assisted with my easy transition into the job, allowing me to feel some form of familiarity when encountering cyber topics. However, in retrospect, nothing would ever be able to prepare me for this job since it is so unique and the job this organization does cannot be replicated elsewhere. With that said, I made many connections with the labs I did and the courses I took at ODU.

The internship allowed me to gain new perspective and I got to see things I learned about in a new environment. This is unique since practicing or learning phishing or Metasploit in a lab

environment is not the same as real life. Getting to see real world impact and getting to see the fallout truly solidifies what I learned.

How the Internship Fulfilled my Objectives

My initial objectives were to learn more about cyber security and cyber operations within the government and how it differed from private industry, learn about cyber and how cyber topics could be implemented into other aspects of the organization, and improve my understanding of the world and network with as much people as I can. Although my objectives expanded, changed, and were slightly modified, I felt this internship fulfilled my objectives and provided me much more on top of that.

The first objective was met shortly after my third week after learning more about the cyber operations conducted here. There are definitely huge differences between government and private industries. Some similarities are the tools they both private and public sectors use. These can range from using the same log analyzers to various packet analyzing tools.

The second objective was met almost immediately when I started my core duties. I was able to put my knowledge and brief exposure to several cyber topics like VPNs, Cookies, and web tracking to the test when learning how to perform my duties and learn my tradecraft. I was able to pick up the tradecraft portion quickly since I could visualize my actions and if I were to be tracked, I had some idea as to how they would track me or how I would stand out in the first place.

The third objective has never been accomplished since this is an ongoing objective and will never be completed due to the fact that there are thousands of people in this community. Although I have networked with numerous of valuable people who elevated my understanding, I still need to get more of the right people in my network and cement the friendship with them. I have however expanded my world view and I have seen so much interesting things that happen in the background. The things we see happen at the end makes much more since once knowing how it led to that agreement or event and why it all happened that way.

The other objectives that came and go were merely short-term goals, which I accomplished and it all eventually led up to one of the three objectives outlined above. Another objective not listed is finding ways to become a leader and learn from great leaders I shadowed and interreacted with. I have been fortunate enough to have been assigned great leaders, therefore I am now trying to soak up as much knowledge as I can and find what makes them great leaders so that I can take those techniques and synthesize it with my own style of leadership.

This internship has taught me a plethora of new and exciting lessons and knowledge. My objectives today might not be the same ones tomorrow, but the underlining goals stays the same, network, find ways to become a leader, and make a difference.

Motivating Aspects of the Internship

The most motivating aspect to this internship is the mission. I come in everyday excited to see what has happened in the world and see what I can do to help change it or protect

America. I come in knowing that somewhere along the way, my work is helping, and I don't have to wait several decades to see the results or wait until it is war time to see something I build finally work in action. The mission is always evolving, and the needs are always changing, and with events happening all over the world, there are so many opportunities. We also get to carve our careers and just the thought of getting to experience many different things gets me even more excited.

Another aspect that motivates me are the people around me. These are some of the happiest and patriotic people I have ever met. Contrary to my previous internship at the DoD and Newport News Shipbuilding, the people at this organization face some of the hardest tasks and depressing missions, but they are still able to help others when needed and put a genuine smile on their face. Everyone is open to help and there are legions of people willing to network with me. The environment of a workplace is important, and I feel that the environment here is incredibly stimulating and this motivates me to work hard and help my fellow work mates with the mission.

Discouraging Aspects of the Internship

There aren't a lot to complain about with this internship. This is by far the best place I've been thus far. Some discouraging factors I can come up with at least is sometimes there aren't clear guides or booklets that instruct me how to gain access to some systems or tools. Sometimes these tools might be the best thing since sliced bread, but they show up on only a few sites, databases, or guides which are all hidden away in some corner of the organization. I only found some things due to networking or following the advices of my mentors. This might be an issue concerning me only, or I haven't found a site containing every reference to all the tools, but it gets frustrating at times since I don't have the complete view. Besides that, I am fully happy of the way things are going and I hope to find ways to improve myself and the many systems.

Challenging Aspects of the Internship

Some challenging aspects of the internship was the fact of not knowing I was compromised or not. Many of the tasks and assignments I did in my past internships I could see the results and know if I failed or succeeded. However, working here, I could never know if one click could compromise the whole system or one horrid search plan could lead to me raising red flags for foreign webmasters. When I first started, I always came home fearing if my actions compromised the whole system for everyone else. My mentors assured me I was alright, and what I was doing was great, I shouldn't worry at all. But in the back of my mind, I am always wondering if I ever make it on a list for analysts to analyze. I am sure as I continue, the fear or challenge will subside, but the thought will always be there.

The other challenge consists of networking. I feel as if I have social anxiety and this holds me back at times when trying to network with others. I believe I have improved tremendously when compared to four months ago, but I still revert to my introvert shell at times. This will be an ongoing challenge I have, but improvements are being made and I only need to practice in order to be more comfortable socially.

The challenges outlined are all challenges that can easily be fixed with time and practice. I hope to be better and I am sure more pressing and important challenges will come along when my career picks up.

Recommendations for Future Interns

This is a hard topic since the government is such a different beast when compared to private sector. Even within government it is different, just by looking at structure and procedures. However, some advices I would give is just like the many advices given to me, network, be proactive, and most importantly have a great attitude.

Networking is very important since the government is small. People will know who you are even if you have never met them. By getting to meet new people, you will get a chance to know about opportunities out there and doors will open for you. Those in charge and those who have the ability to choose who is going where love to choose those who they know is capable and those who they know personally. That is why introducing yourself to everyone and maybe grabbing coffee with them is equally as important since you can then begin to build rapport.

Being proactive shows that you are excited and are willing to be engaged and improve. Managers and those around you love this kind of behavior, but it is also a plus for you. You not only impress the higher ups, but by putting yourself out there and being proactive, you will be exposed to all sorts of interesting projects and assignments. This is the only way to learn and get exposure to the important components or projects.

Lastly, but most important, have a great attitude. Attitude is contagious and can set the mood for a whole office, but also sets your own mood. A happy office is always best to work in, and a happy self is much more productive than someone walking around being gloomy and misdirected. Attitude can also determine how those around you treat you, and how you are perceived by upper management. Overall, work is much more enjoyable with a great attitude and if you are happy where you are, that is just another bonus.

Conclusion

The takeaway from my internship experience is the importance of putting yourself out there and being proactive. I learned quickly that this is not a one-man team, I am not going to Rambo this. This is instead a team effort; mission dependencies require knowledge from every department and backgrounds from numerous of people. With a diverse cast of people, any task can be accomplished, but alone, nothing will be done effectively. This is why networking is so important, and when time comes, having a large pool of people to pull from is the most important thing to keep in mind. Being proactive is something I have always believed in. Getting to be a part of some of the most interesting and important projects or missions has all spawned from being proactive and having the confidence to put myself out there. Letting those who have the power know I am interested in a certain project allowed me to have unique exposure. It is also a vessel to allow you to gain promotions and gain new contacts.

Coming out of my first tour at this internship, I now think differently about a lot of things. Knowing how some things are used, going back to school for Cybersecurity will allow

me to apply a lot of what I learn to real world applications. Having seen cyber operations in action and various other cyber topics at work, I am now able to appreciate the lessons taught to me at school and understand why it is important.

This internship will be a steppingstone into a permanent position in this organization. I hope to continue what I learned in this internship and improve on my knowledge when I join full time. Having exposure to the future of war and the future of technology, I hope to bring this unique perspective into whatever I decide to do further down the line. Having experienced several types of hackings, all source research, and operations, I hope to combine it all and be a better person professionally. I will be returning full time after graduation in May 2020, and begin my journey there, building upon past experience and knowledge gained during this internship.