Final Paper

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Internship @ ODU Brooks Crossing Innovation Lab

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Table of Contents

Samantha Hairston

Section 1

I decided to do an internship at the ODU Brooks Crossing Innovation Lab because it was the first internship I was accepted into after applying to many competitive opportunities. Knowing how tough it is to land a cybersecurity internship; I couldn't turn this offer down. It presented a valuable opportunity to get my foot in the door and gain hands-on experience in a field I'm passionate about.

This internship was a perfect fit for me because it aligned with my existing skills and interests. I already had experience working with vinyl cutting machines and heat pressers, as I own a Cricut— a vinyl cutter that I use for my clothing brand. With it, I've created vinyl designs for shirts, decals, and much more. My position as a makerspace technician was ideal because I was familiar with tools like vinyl cutters and heat press machines, but I was also eager to learn how to use other equipment such as lasers, 3D printers, CNC machines, UV printers, and DTG printers.

This internship was the perfect blend of my technical skills and creative side, offering me the chance to expand my knowledge and gain experience with new tools and technologies. It was an incredible opportunity for personal and professional growth.

Section 2

As mentioned earlier, my internship was at the ODU Brooks Crossing Innovation Lab, an instructional hub for STEM learning that emphasizes team building and collaboration. It provides opportunities for people of all ages, abilities, and disciplines to learn by designing creative solutions to real-world problems. The lab offers a range of services and programs, including:

- **Teacher Professional Development Programs:** Monthly machine training and curriculum design sessions.

- **Student Fabrication Experiences:** Aligned with industry certifications in partnership with community colleges.

- **Community Nights:** Family-friendly experiences offering "make and take" projects.

- **Summer Camps and Saturday Workshops:** Hands-on experiences with digital technology and machining.

Samantha Hairston

- **"Start Your Own Business" Workshops:** Helping participants design and prototype ideas for future business opportunities.

- **Digital Fabrication Badging Program:** Encouraging students to learn diverse skills and concepts.

- **Shipyard Youth Mentoring Program:** In partnership with NNS' educational outreach program, SEEKnns.

During my initial orientation, I was introduced to my role and responsibilities. My position as a Makerspace Technician required me to:

- Learn to operate lab equipment, including lasers, 3D printers, CNC machines, vinyl cutting machines, heat presses, UV printers, and DTG printers.

- Perform regular maintenance on lab equipment and recommend replacement parts as needed.

- Teach community members to use equipment during Open Makerspace and "Makers Gonna Make" program.

- Create tutorials, videos, and other content for the lab's website to help train new staff and community members.

I also took a tour of the facility, where I learned the names and functions of various machines. Early in my internship, I was introduced to 3D printing and a design program, which allowed me to create and print a custom keychain. This hands-on experience expanded my technical skills and gave me insight into the creative possibilities of digital fabrication.

Section 3

The management of my internship was exceptional and respectful. Kaitlyn McCoy, who managed the internship and oversaw the ODU Brooks Crossing Innovation Lab, did an outstanding job organizing all the events and schedules. She was highly accommodating and understanding, always ensuring that everything ran smoothly. Kaitlyn's organizational skills were evident in the way she prepared weekly schedules and clearly communicated what we would be doing each week. Her professionalism and support made the internship a positive and productive experience.

Section 4

Samantha Hairston

During my internship at the ODU Brooks Crossing Innovation Lab, I had the opportunity to work closely with diverse groups, including families, individuals, school field trips, and community organizations like group homes. One of the schools that visited regularly had a hydroponic program, through which I learned about growing plants in nutrient-rich water instead of soil. This program taught students practical and entrepreneurial skills such as agricultural techniques, problem-solving, financial literacy, entrepreneurship, collaboration, and leadership. I was glad to contribute to their learning and expand my own knowledge in the process.

My responsibilities were hands-on and varied, allowing me to explore my creativity while ensuring a safe and engaging environment. Key tasks included:

- **Machine Monitoring and Maintenance:** Regularly inspecting equipment like lasers, 3D printers, and vinyl cutters to ensure proper functioning. For example, I carefully monitored the laser cutter to prevent overheating and excessive smoke.

- **Creative Projects:** I designed and produced a variety of items, including coasters for the Department of Cybersecurity, shirts printed with the DTG printer for an aerospace field trip, and custom stickers with the Cricut machine. A personal highlight was 3D printing a vinyl holder and an ODU pumpkin.

- **Workshops and Tutorials:** I developed and led workshops, such as making paddle boats from popsicle sticks and crafting lanterns with laser cutters. I also helped run family makerspace events, guiding participants in transforming photos into puzzles using UV printers and laser cutters.

- **Community Engagement:** I assisted groups of all ages with projects like designing custom keychains and phone holders. It was fulfilling to see participants bring their creative visions to life. Additionally, I created 30 hats for volunteers at a STEM event and helped a school, Tiger Tech, by making custom stickers for their program.

- **Skill Development:** I learned new techniques, such as staining wood for coasters, using Cricut's drawing feature, and troubleshooting technical challenges.

One of the most rewarding moments was helping a woman complete a sewing project. Despite her initial frustration, I remained patient and supportive, highlighting the importance of strong people skills in collaborative environments.

During my internship, my contributions were essential to the smooth operation of the business. I regularly monitored and maintained the equipment to ensure everything was functioning properly and safely. I also assisted with event nights, helping participants complete their projects and ensuring that everyone had the support they needed. By keeping the machines safe and operational, I played a key role in creating a productive and secure environment for both staff and community members.

Samantha Hairston

Section 5 & 6

Before this internship, I already possessed skills that helped me succeed, such as an eagerness to learn and try new things, as well as strong people skills, leadership, and communication abilities. These qualities allowed me to engage effectively with others and adapt to new environments. Additionally, my classes provided me with foundational skills in programming, coding, and troubleshooting, which proved useful when working with equipment like printers.

Throughout my internship, I gained valuable new skills. I learned how to teach others, monitor machines to prevent issues, and expand my creativity. I became proficient in operating equipment like DTG printers, 3D printers, UV printers, and CNC machines, and learned how to recognize when maintenance or part replacements were needed.

Another significant takeaway was expanding my people skills. For example, I had an encounter with a lady who was initially rude, which challenged me to remain patient and professional. This experience deepened my understanding of the broad nature of cybersecurity, as it highlighted the importance of interpersonal communication and conflict resolution in any field, including tech. This opportunity allowed me to learn practical skills that are beyond the classroom. While I've gained a lot, I recognize there's still so much more to learn, and I'm excited for what comes next.

Section 7

In my introduction, I mentioned that this internship was the perfect blend of my technical skills and creative side, offering me the chance to expand my knowledge and gain experience with new tools and technologies. It was an incredible opportunity for both personal and professional growth. This internship aligned well with my existing skills and interests, allowing me to fulfill my goal of gaining hands-on experience and adding valuable skills to my resume. I learned in a fun and engaging environment, developing teaching and people skills, running programs, and enhancing my creativity. While I do wish I had the chance to learn more cybersecurity-specific skills, I knew the nature of the internship when I took it on and am grateful for the experience it provided.

Section 8

Samantha Hairston

The most motivating and exciting part of my internship was the opportunity to help others learn and bring their visions to life. There was something incredibly heartwarming about seeing participants, whether they were kids, adults, or families, excitedly watching their ideas come to fruition. It felt rewarding to be part of their creative journey and to know I played a role in their success. Whether it was guiding someone through the process of designing a custom keychain or helping a group create unique items, watching their satisfaction when their projects were complete was truly fulfilling.

Another aspect of the internship that I loved was being able to engage in my own creative projects. I had the freedom to experiment with various tools and technologies, and I enjoyed making things for myself as well as for others. Having this creative outlet allowed me to explore new ideas and hone my skills in ways that were both enjoyable and professionally valuable.

I also recognized that this experience would be incredibly beneficial for my future career. The hands-on skills I developed, from using advanced equipment like 3D printers and laser cutters to teaching others and managing projects, are directly applicable to the work I want to pursue. It was not only a chance to be creative and innovative but also a chance to build a solid foundation for my career growth.

Section 9

The most discouraging part of my internship was the heavy traffic I had to navigate on my way to and from the lab. The commute often took much longer than I anticipated, and at times, it was exhausting and frustrating. Spending so much time on the road left me feeling drained, and it was difficult to focus when I arrived at the lab. There were days when the long drive made it hard to maintain the energy I needed to fully engage in the work. The commute, while a practical challenge, was a constant reminder of the significant time commitment required for the internship, which added another layer of difficulty to the experience.

In addition to the long commute, another aspect that was discouraging was that the internship didn't provide as much direct exposure to cybersecurity tasks as I had hoped. My original goal was to gain hands-on experience in cybersecurity, but the focus of the internship leaned more toward creative and technical work in areas outside of cybersecurity. While I still developed important skills, such as equipment management, problem-solving, and teaching, I felt a bit disappointed that the internship didn't align more closely with my specific career aspirations in cybersecurity. I had expected the role to provide more opportunities to apply and deepen my knowledge in the field.

Samantha Hairston

Furthermore, the delay in receiving my payment was another frustrating aspect. It took longer than I anticipated to get compensated for my work, which added to the stress of balancing the demands of the internship with other responsibilities. While these challenges were discouraging, I recognize that the skills I gained—though not directly tied to cybersecurity—are still valuable and will contribute to my personal and professional growth moving forward.

Section 10

I believe the most difficult challenge during my internship was working with the laser machine. It would often malfunction, requiring frequent adjustments and the replacement of parts, which made it a particularly frustrating and time-consuming task. The constant troubleshooting and maintenance sometimes interrupted the workflow and made it challenging to stay on schedule.

Additionally, as I mentioned earlier, transportation was another significant issue. The commute was long, and the traffic was consistently heavy, which made getting to the lab more difficult. On top of that, the tolls I had to pay during my commute accumulated to around $68, which added an extra financial burden to the experience. These transportation and equipment-related challenges were certainly the most demanding aspects of my internship.

Section 11

To future interns, I recommend making sure you don't have a class before your internship, as it will give you enough time to arrive on time. Always predict that there will be traffic, especially if you're commuting from a distance. It's better to be early than risk being late. Additionally, if you're going to be there for an extended period, make sure to bring a meal with you. Having food on hand will help you stay energized and focused throughout the day. Planning ahead for these things will make your experience much smoother.

Section 12

In conclusion, my internship at the ODU Brooks Crossing Innovation Lab was an incredible learning experience that helped me grow both personally and professionally. One of the biggest takeaways was the opportunity to combine my technical skills with my creative side. Working with a variety of tools and equipment, such as laser machines, 3D printers, and DTG printers,

Samantha Hairston

allowed me to expand my knowledge and try new things that I hadn't learned in school. It was fascinating to see how different technologies can come together to create innovative solutions.

I also developed important people skills during this internship. Whether it was teaching community members how to use the equipment or guiding participants through different creative projects, I gained confidence in my ability to communicate and help others learn. I also learned how to monitor machines to ensure they were functioning safely and efficiently, which was crucial in maintaining a smooth workflow.

Although the internship wasn't directly focused on cybersecurity, the skills I gained—such as troubleshooting, problem-solving, and equipment management—are still highly valuable in my field. I also realized the importance of patience and persistence, especially when working with machines that often-required part replacements or troubleshooting, like the laser machine.

The internship gave me hands-on experience that added depth to my resume, and I was able to contribute to creative projects while expanding my knowledge. One of the most rewarding aspects was seeing the projects come to life, whether it was helping individuals with custom keychains or working with students on projects that combined creativity and problem-solving. Additionally, the experience taught me how to balance multiple tasks, such as managing workshops, helping with maintenance, and contributing to tutorials, all while ensuring I met deadlines.

While I wish I could have gained more direct experience in cybersecurity, I'm grateful for the skills and knowledge I acquired. I now feel better prepared for future opportunities, and I look forward to continuing to grow in both technical and creative areas.

This internship has had a significant impact on the rest of my college career. It removes the burden of having to search for an internship before I graduate, as I've already gained valuable hands-on experience. It has also allowed me to apply and further develop many of the skills I've learned, such as problem-solving, communication, and working with specialized equipment. Additionally, the internship gave me the chance to enhance my people skills by teaching others and collaborating with different groups. All of these experiences have not only boosted my confidence but also made me more prepared for future opportunities, both in my academic journey and my career.

Samantha Hairston

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My internship experience will have a lasting influence on my future professional path and career planning. It provided me with valuable hands-on experience that helped me bridge the gap between theoretical knowledge and real-world application. Working with advanced equipment, like 3D printers, laser cutters, and DTG printers, has expanded my technical skill set and given me confidence in using tools that I hadn't previously worked with. This will be incredibly beneficial as I move forward in my career, whether in cybersecurity or any other field that requires technical expertise.

In addition, the people skills I developed through teaching, collaborating, and interacting with diverse groups will help me in any professional environment. I've learned how to communicate complex ideas effectively, provide guidance, and manage group dynamics. These skills are transferable to many roles, and I'm now more confident in my ability to work with others and take on leadership responsibilities.

The experience also reinforced the importance of being adaptable. While my initial goal was to gain more cybersecurity-specific skills, the internship exposed me to creative and technical areas I hadn't considered before. This has broadened my perspective on potential career paths, and I now see that the skills I gained in problem-solving, creativity, and technical proficiency can be applied in a variety of industries.

Overall, this internship has shaped my future professional path by making me more adaptable, versatile, and equipped with a diverse skill set that will serve me in any career I pursue. It's given me a clearer sense of how I can combine my interests and technical skills in a way that will help me excel in my future career.

Samantha Hairston

Sources

Section 2 Background Information of Internship: https://www.nnva.gov/2511/About-Brooks-Crossing

Samantha Hairston