Old Dominion University Information Technology Services Internship Report

Digital Integration Environment – ITS Department

Professor Teresa Duvall

Jaden Medina

CYSE 368/Internship Fall 2025

Date: 12/1/25

Table of Contents

Introductions

When one thinks of an internship, different images come to mind. Some may think of someone who goes on “coffee runs”. Others see someone who may fill the printer in an office space. Some may even view interns as individuals who do not participate or contribute anything productive. Generally, interns are viewed as people who do random errands, low-grade tasks, or even the harder medial tasks for free. However, an internship is much more than that and has proved to be very valuable. An internship is where a person gets to showcase skill sets he has learned during an undergraduate program, as well as the skills learned at the internship, to help set someone on the path for success. Earning an internship that allows a person to showcase these skills is crucial to their professional development. Without an internship on their resume, it could prohibit a person’s current career path. That being said, when I first began searching for different internship opportunities, I created a list of criteria to guide my search. This list would help me decide which internship to pursue.

The first criterion I established was that the opportunity should not only follow my academic progress, but also my professional progress. I wanted to ensure that I could use the hands-on experience on my resume. Having an internship on my resume can provide me with numerous opportunities for a future career. Many entry-level positions may require 2-5 years of experience, which, without an internship, will prevent me from being able to apply for those positions.

The second criterion that needed to be fulfilled was that the job’s location had to be close to campus. The reason was because I still had lectures at Old Dominion’s Norfolk campus. On campus, the school offers students various resources to support their academic endeavors. If the internship were close to campus, I would have ample time to focus on both my studies and the internship, and ultimately have more time to utilize all the academic support sources, as I would not have to make a long commute every day. A close internship would also greatly help with my third criterion: one that I could balance with my life.

My final criterion was that I had to find an internship that I could fit around my very complex schedule. Before selecting an internship, I was heavily involved in balancing school, family, work, and studying for my certification. That is when I turned towards on-campus internships. I applied via Handshake by sending my resume, filling out prerequisite forms, and providing a cover letter for a few IT departments and positions, such as the ITS help desk’s desk technician, Networking as a student network technician, and the Desktop Support Group (DSG); however, I was informed that they had chosen other candidates. Although I was disappointed, I continued to search for opportunities on or near campus. One day, while conversing with one of my friends about my career goals and recent struggles in securing an internship to add to my resume, he mentioned that he was working on campus as a Student lead for the IT department's

"Digital Integrations Environment." Once I had realized he worked for ITS, I began asking questions about the internship. After our lengthy conversation, my friend informed me that they were seeking new technicians. I applied and got the position as a student technician. Once I secured the position and started this course, I began considering the learning outcomes and objectives I hoped to achieve during the internship.

The first learning outcome was to develop practical industry skills, including an understanding of basic IT technology and terminology. The second skill was sharpening my soft skills of communication and collaboration. The ITS internship pushed me to collaborate with students as well as full-time technicians (full-timers), which has given me practical experience of what the work field is going to be like. Lastly, this internship provided me with an understanding of how to initiate networking and establish professional relationships. Starting my professional network early will provide me with connections that I and someone else can mutually benefit from.

Organization & Internship Overview

The organization where I completed my internship was the Information Technology Services/ support (ITS) department at Old Dominion University, specifically within the Digital Integration Environment team. The ITS department itself is one of the most critical departments for on-campus operation. ITS is responsible for maintaining the university's technological infrastructure, supporting academic spaces, and protecting various digital assets. My department, Digital Integration Environment, focuses on technology in academic spaces, as well as technology for specific on-campus events. Although the department is primarily focused on ITS and AV (Audiovisual), its history, from origins to current state, has undergone significant changes.

Over 22 years ago, the Media Department at Old Dominion University was struggling. The reason this organization was failing was that it focused solely on technology for school events and classrooms; therefore, the media staff became overwhelmed. As a result, Old Dominion created a new Department in which one of ITS's current superiors was hired. He was recruited from an outside source to create and run the department. The superior began hiring technicians, such as my Manager, Geoff, and another full-time worker with whom we still work today. Once the three full-time technicians were settled, the department quickly realized that three employees were not enough to service the entire campus and complete all necessary tasks. That said, the department quickly hired around twenty student workers/technicians to assist with the workload and the need for support on campus.

As the department and the need for classroom support grew, they were able to recruit even more full-time technicians. The number of full-time technicians working during a shift quickly grew from three to around eight in total. As the department began to fill with full-time

employees, the number of student interns dropped from twenty to around four to eight. As a result of the number of students and full-time technicians changing, the department's focus also changed. Initially, “Classroom Central,” the name of the department, was mainly focused on delivering technology to classrooms; however, that quickly changed as the department began installing the equipment in the classrooms, not just delivering it. Today, the Digital Integration Environment, although not as publicly recognized as other ITS units, is crucial to the university’s internal operations, as it bridges the gaps between various systems, updates software images, supports device onboarding, and helps maintain the technological ecosystem necessary for both academic and administrative functions.

Orientation and Hands-On Training

When I first started at Digital Integrations Environment, the orientation was shorter than I expected. On my first day, I received a tour of the office, met the full-time technicians, as well as the other student technicians who were working that day. From there, I had a brief overview of our radio system, including its operation and proper usage.

Afterwards, a full-time technician named Franklin took me and another student technician, Patrick, to Batten Arts and Letters (BAL) room 1012 when it was empty to familiarize us with the equipment and technology we would be servicing during our internship. Franklin explained how the system worked, what technology controls each function in the room, and the most common technology issues that arise, along with how to resolve them.

Franklin explained that the most common technological problems typically occur at the beginning, middle, and end of the semesters, primarily due to the arrival of new staff and the timing of midterms and finals. These issues are mainly caused by three things: 1) user error, such as a professor in the class or the class before changing settings on our touch panel or changing the settings of the computer, 2) System updates/ power outages, and finally, 3) instructors not knowing how to operate the technology in the room. After the training was complete and Franklin explained all of the issues, Patrick and I had to complete a “test” in which he and I left the classroom while Franklin created a mock issue in the room. From there, Patrick and I had to fix the issue. In this case, Franklin had changed a setting on the touch panel to display the document camera HDMI instead of the desktop, then he switched around all of the HDMIs on the instructor's desk, and then called us in to fix the issue. Once the issue was identified, we continued to resolve it and were told we were ready to begin responding to service calls.

My first impressions of the department were fairly positive. I was excited to start an internship that was related to my major, and the entire team was positive and cohesive. Initially, the management style was semi-hands-on, in the sense that the supervisors encouraged us to accompany full-time staff on service calls to understand how the rooms function, how to interact with faculty, and how to de-escalate situations. However, as one gains more experience, the

full-time team's trust in student technicians is enough to send them on calls on their own. Furthermore, student leads, who serve as another form of management, delegate tasks to other student technicians on the night crew once all the full-time employees have left for the evening.

When I was a non-lead student technician, all the student leads were relaxed; however, they did help guide and assist us when we went on calls. Some of the major duties and assignments we, student technicians, had were responding to service calls from the help desk. Once a professor encounters an issue in the academic space, they will use the phone provided in the room and press 1 to be connected to the ITS Help Desk. After the help desk walks them through some steps, they will ensure that the issue can be easily fixed. If the issue is not resolved, the help desk will contact our office to dispatch a technician to assist the professor. Normally, a student lead, or in rare cases, a student technician that the lead selects, will act as dispatch, responding to the Help desk and then relaying any calls to the rest of the workers/technicians on shift, or choosing who responds to which calls through the radio. The role of dispatch is crucial for the functionality of not only the night crew but also the entire Digital Integration Environment Team, as without it, not only will the radio lines be cluttered, but there will also be chaos, as students are unsure who should attend to which service call. Another work duty we had was servicing the classrooms, which entailed either students physically communicating with the professor and facing the technology in the classroom or remotely signing in to the classroom and attempting to fix the issue from the office. After fixing the issue in the classrooms, students must then reply and close the ticket.

Besides the service we provide in the classroom, student techs are also required to visit classrooms to perform quality checks and ensure that not only the technology in the room functions properly, but also that the classrooms look and function correctly. Quality checks are primarily used to assess the quality of academic spaces randomly throughout the year. These forms are semi-long in length; however, they are very cautious with details. For example, there are various different forms that we will fill out throughout the year to highlight the state of the room as well as the technology in these academic spaces.

Some of our forms are short, but before the semester or before a long break, we will need to complete either Quality Checks or an extremely thorough form in which we must inspect every detail, such as the type of floor in the room, the desk in the room, the paint or lighting, and its state. Furthermore, we may need to examine the ceiling tiles, as well as the metal brackets that hold them in place, to determine if a replacement is needed. Any water damage in the ceiling may lead to a leak or flood, which can damage not only the various expensive technologies in the academic space but also damage the flooring, walls, or desks. This taught us that we must consider issues from every perspective. Furthermore, it gave me the skill and habit of always double-checking forms before submitting them, as well as taking the time to thoroughly examine the academic space. Although the issues may seem small, they make a big difference in the long

run. The Quality Checks ensure that the classroom is functioning and looks clean and ready for students or organizations to use our academic spaces.

Technical Skills & Academic Connections

Some basic cybersecurity skills I both knew and learned about in this internship were networking and troubleshooting. Although I had gained an understanding from the classes I took, actually physically seeing and understanding how the hardware connects to the network, as well as how data travels through Ethernet cables and Wi-Fi signals, was truly fascinating. We had to understand how the networks work, as certain buildings are connected to the same network. This is important because, during the semester, we experienced an issue with two Computer Science classes that were being held in the Computer Science labs in Monarch Hall. When entering the academic spaces, we notice that no content was being displayed through the projector or on the televisions provided in the room. I immediately went to the instructor's desks to investigate. The classes' instructors' desktops as well as the rack were plugged into the right network outlets; however, when testing the network cable with a network tester, I was alerted to the fact that the outlet itself was on the wrong VLAN. A VLAN, or Virtual Local Area Network, is a method for organizing and logically dividing a single physical network into multiple distinct broadcast domains. This creates separate virtual networks for groups of devices. If I had not undergone training through Digital Integration Environment and taken a course on networking, I would not have realized the issue, and we would have had to wait until the next workday to resolve it. Another reason knowing how networks work is such a useful skill is that when we service graduations, we have to custom-make and install network cables for the event. When creating these network cables, I used a wire cutter to strip the Cat6 cable and expose the wires inside. Afterwards, we had to line up the wires in a specific order for the cable to function properly for the graduation.

After physically seeing how the network functions and learning how to create a network cable, my understanding of networking and the process of setting up and creating a cable has undergone a significant change. Although there were areas where I discovered I still had more to learn, the Old Dominion University curriculum effectively prepared me for my internship in several significant ways. My 300-level IT networking course, for instance, was quite beneficial. It provided me with an introduction to the vocabulary, concepts, and fundamental operations of networking equipment. I eventually utilized this information on a regular basis throughout my internship. I was able to identify the equipment I was working with and comprehend the team's jargon since I already had a solid foundation in topics such as network topologies, device settings, and common networking protocols. Tasks like determining which network a device was connected to were made considerably simpler by these linkages between what I learned in class and what I encountered during the internship. When I was able to apply the concepts I had studied in class to a real-world situation, it seemed to finally "click," which undoubtedly

reinforced what I had learned in the classroom. This in turn, gave me much more confidence as I felt that I was not only understanding the coursework but being able to put what I learned to practical use made me realize I am more prepared for the workforce than I had initially thought.

Nevertheless, there were times throughout the internship when I came across new tools, methodologies, and troubleshooting strategies that were not yet covered in my classes. Such as our “rule of firsts”. When I began this internship, I had always heard the leads mention the rule of first and its importance. I did not truly understand the significance until I was taught the purpose of the rules. The “rule of firsts” is a set of rules and procedures that we must follow when troubleshooting a room for the first time. The first rule is to ensure that all exposed technology, such as monitors and HDMI cables, and some academic spaces have the Zoom monitor plugged in and functioning correctly. The second rule is then to go into the rack and reset any of the technology inside, such as the Magewell or AJA. If those rules do not work, the final step would be to perform a system-wide reset. The final rule is viewed as a last-ditch effort, as it can delay the class or put the academic space out of service for five minutes while the entire rack reboots. These encounters demonstrated the distinction between acquiring ideas in a classroom and using them practically in a work setting. All things considered, the internship demonstrated the value of my academic background while also highlighting topics I'm eager to learn more about as I pursue my education.

Skill Development & Professional Growth

This internship has undoubtedly helped me develop and refine my hands-on, real-world skills and abilities. Conducting extensive room evaluations, inspecting classroom technology, and assisting with the school's technological inventory and equipment indexing provided me with valuable experiences closely related to the work performed in genuine IT, data analytics, and academic technology professions. I also learned how to detect technological issues, properly document them, close service requests and tickets, and understand why even little issues are significant to instructors and students. During the internship, we also worked with racks, PCs, and inventory systems, which all helped me gain confidence in the tools and procedures that professionals use on a daily basis.

I also made significant progress in communication and teamwork. Creating the room evaluation form required me to collaborate closely with another student technician and our Digital Integration Environment supervisor. Furthermore, when using the data collected through these forms, I had to analyze and cluster all the information to ensure that we cover all areas of incidents. Discussing the results of the room evaluation form with the Department Head taught me the importance of communicating effectively and creating concise, brief summaries. I learned how to convey technical topics to non-classroom participants, such as professors, finance professionals, or facilities teams. Throughout the internship, I enhanced my ability to ask

questions, share ideas, work collaboratively with others, and contribute to group projects that benefited the entire team. When I became a Student Lead, it was crucial that I was direct about the importance of being clear in my communications and directions when leading the night crew, a team composed of student technicians.

This internship also helped me develop professional ties, but not through typical industry networking. I had a deeper working connection with my Department Head, who took the time to explain how processes, budgets, and documentation actually function behind the scenes. For example, the data collected was then visualized and used as a reason why we would need to request more or less money via the budget or grants. I also became more involved with the other student technicians, who had similar interests and aspirations as mine. These ties provided me with individuals to learn from, rely on, and perhaps utilize as references in the future. Although it occurred within the department, it resulted in genuine professional development. Which I am able to take forward to the professional workplace as well as reliable resources for references when it is time to apply for corporate-level jobs/careers.

Reflections on the Experience

The most motivating and exciting aspect of my internship was discovering how much of a real difference my work could make on campus and the people who frequent these academic spaces. Being trusted to conduct extensive room evaluations, manage critical equipment, analyze data, visualize it, and assist with class functionality made me feel like I was contributing to something more than just my student job. It was incredible to see how the data we collected may affect repair decisions and the priority of these repairs. What I found immensely interesting is that the ideas and conversations I had would even impact improvements and budget discussions. At that moment, I realized that interns do hold value and our opinions matter, and they truly make a difference. These realizations made the work feel more significant than merely mundane. I also loved leveraging my data science knowledge by brainstorming methods to expedite equipment tracking and perhaps create a more automated approach.

Although my experience was largely positive, I also had some negative realizations. One of the most discouraging aspects of the internship was noticing how quickly everyday tasks might become tedious and repetitive, especially when classrooms were in good shape, and there was not much to document. At times, the tasks at hand felt boring. It was easy to lose focus on the reason why we were doing mundane, repetitive tasks. Another concern was addressing equipment or rooms that had long-standing problems. These spaces could not be repaired immediately due to budget or scheduling constraints. As a result, I became frustrated after noticing an issue, properly recording it, and then realizing it would be weeks or more before anything changed. It was worse to discover that someone had done it incorrectly, and I would then need to go into storage to index the equipment properly. Nonetheless, these experiences

helped me comprehend the reality of workflow, planning, and resource restrictions in a real firm. Overall, all these experiences taught me not only how to manage situations when the outcome is not what I hoped for but also helped sharpen my problem-solving and critical thinking skills.

But by far the most difficult and challenging aspect of the internship was striking a balance between accuracy and efficiency. Although it might seem straightforward and simple, it is much more complicated than one might think. The extensive room evaluations required an unexpected level of concentration, and it was not always easy to detect every minor flaw while moving at a steady pace and handling multiple service calls. Although this may sound easy and insignificant, when I was the only technician in the office at times, it was challenging to complete the tasks my manager sent me on while running across campus to service calls. Therefore, when I was able to focus on the Quality Checks for the room, it encouraged me to slow down, pay more attention, and consider how each aspect of the room fit into the greater picture.

Another problem was accepting responsibility for mistakes in equipment indexing and storage. Any errors made in labeling or tracking would cause confusion later. Being accurate in indexing and storage was especially important to me as a student lead. Lead are required to check the forms before the student technicians submit them. Once I became a lead, I was not aware of the added pressure and responsibility that came with the role. For example, after every night shift is completed, the student lead must submit a report to the entire office, as well as to our managers, supervisors, and department heads. Contrary to what I believed, this specific task is important as it allows full-time technicians in the morning to identify any unresolved issues from the previous night, so they can correct them before professors and students enter academic spaces.

Another responsibility that I underestimated was the importance of Dispatch and knowing the skill set of all the technicians. When interns arrive at the office, the first thing most interns do is toy around with the handheld radios. Although the workplace is often relaxed when it comes to dress code and overall atmosphere, we must still maintain a level of professionalism. The radios are not casual gadgets; they are essential tools used to communicate real issues happening across campus, and misusing them can distract technicians who are actively responding to service calls. What might seem like harmless curiosity can quickly create confusion on the channel and has even led to reprimands in the past. This can cause your radio privileges to be revoked, your hours to be cut abc until training is complete, or, in extreme cases, termination. Certain issues in an academic space require a specific level of skill set and knowledge of the technology that not every student technician may possess yet. With the pressure of servicing classrooms of varying priorities, I was nervous about making a mistake. As a Student lead, it is stressful since all of the responsibility falls onto me. It was also fenging at times to adapt to the department's routines and expectations, particularly since I was still learning

how things worked behind the scenes. These challenges forced me to step out of my comfort zone and helped me grow both technically and professionally.

Advice for Future Interns

My best advice to future interns is to approach the work with an open mind and have a keen attention to detail. This internship involves a significant amount of hands-on work in classrooms, and the little details really matter. A future intern should take their time during training and ensure they understand how the technology works. It is also important that they double-check the forms they will fill out. It is important because ensuring forms are done correctly the first time would, in turn, make an individual's work simpler and the department more efficient. There have been times when student technicians have filled out a form incorrectly, and it has caused a large headache in the end, as the department had to search for the equipment that had been labeled wrong across the entire campus. Before beginning, I recommend that an intern become acquainted with fundamental computer hardware and Microsoft programs, examine the classroom technology, and have a general understanding of troubleshooting techniques.

A new student does not have to be an expert, but having a solid foundation will make the learning process much simpler. It's also beneficial to develop good communication. Whether they are asking questions, reporting problems, or collaborating with other student technicians, the ability to communicate effectively will take any professional a long way. The more comfortable a person is with who they are speaking out and collaborating with, the faster they will progress in their career. Finally, future interns should prepare to keep themselves and their work organized, as the various tasks student technicians are given may be lengthy and complex; therefore, it is essential to pay attention to every small detail. Interns will maintain equipment, complete documentation, and track various systems. Hence, getting into excellent habits early on will save a young intern a lot of headaches. It is always important for them to review their own work and have another technician or a lead technician review it before submitting.

Another piece of advice I would give to a new student technician interning with the Digital Integration Environment is to be prepared to take on various tasks beyond your official job description. For example, during one of our breaks, the student technicians who were on shift had to unbox and assemble multiple chairs for rooms A through C in BAL 1013. We were a bit confused at first about why we were building chairs and then desks. However, we still managed to complete the task. Another recurring task we were asked to handle was assembling and mounting mobile television units. Initially, we were not informed why this was necessary, but after completing several of them, our supervisor explained the broader context.

This year, he and the school have been implementing a new program called Forward Focus, designed to improve the fluidity and cohesion of synchronous classrooms. This Program

included 36-inch monitors/tablets called a “Monarch Board” on certain desks and in Constant Hall 1002, an extremely large Monarch Board that is significantly larger than the instructor's desk. The desks, chairs, Monarch Boards, and mobile TV mounts all support this Forward Focus initiative, helping instructors teach fully synchronous or hybrid classes smoothly, without creating setbacks for students’ learning. Approaching the internship with curiosity, patience, and a strong work ethic will allow you to make the most of your experience and have a significant effect on the department.

Introspective Impacts of Internship

Overall, the biggest takeaway from my internship is that the work going on behind the scenes in academic technology is significantly more interwoven and influential than I previously anticipated. I discovered that minor chores, such as inspecting a loose wire, documenting classroom damage, accurately identifying equipment, ensuring the right HDMI is in the right port, or updating inventory, can have a significant impact on important decisions concerning campus maintenance, financing, and technological improvements. Before taking on this internship, I did not realize how much work goes into the fluidity of the academic spaces. I encountered a technology issue only once during my academic career while I was in class; therefore, I had limited knowledge of the department. Nevertheless, this experience demonstrated to me the importance of paying attention to detail, maintaining consistency, and communicating clearly in a professional context. I also learned that I enjoy identifying issues, organizing information, and finding methods to improve processes, particularly when I began investigating how data science techniques can enhance our equipment tracking efficiency. This aspect of my internship actually helped me decide on my minor: data science. I realized that I thoroughly enjoy organizing, compiling, and analyzing data. Altogether, these lessons helped me understand the value of my work and its broader purpose.

Final Reflections and Conclusion

This internship will undoubtedly affect the remainder of my time at ODU. I now feel more comfortable entering technical contexts, such as a computer lab, a classroom, or a project team in one of my classes. I recognize the importance of being thorough, communicating clearly, and approaching tasks with care and intention. I also feel more connected to the campus itself. Observing how technological operations function in the background has given me a greater respect for the learning spaces I utilize and service on a daily basis.

Looking to the future, I plan to approach my classes with a greater work ethic, particularly in terms of organization, documentation, and group participation. This experience has motivated me to take on more hands-on opportunities, seek out projects that challenge me, and look for ways to apply what I’m learning in real settings. Professionally, this internship has had a greater influence on how I envision my future. It reaffirmed that cybersecurity and

information technology are the ideal professions for me and provided me with insight into what everyday work in these industries entails. I discovered how fulfilling it is to solve problems, enhance procedures, and maintain a system on which hundreds of people rely. I have gained mentors and contacts inside the department that I can depend on as I progress. The abilities I developed, technical troubleshooting, data organization, inventory management, communication, and teamwork, will serve me well throughout my career. As of now, I have secured a secondary internship with the City of Norfolk, and I have already begun working and completing tasks. Due to my experience with the Digital Integrations Environment, I have secured a new internship with the city, bringing both experience and new ideas to assist with the program's growth. This experience has helped shape my long-term goals, and now I feel more prepared and more confident about the professional path I want to follow after graduation.