

Final Paper Resubmission

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1. Introduction

Why did you decide to intern at this business, agency, or organization?

My internship with Captivize LLC became one of the most important parts of my college experience because it gave me the chance to apply what I had learned in cybersecurity to a real business environment. I decided to intern there because I wanted an opportunity that connected cybersecurity with AI, automation, and real technical operations. Before this internship, I already knew that I wanted to work in cybersecurity, but I also wanted to understand how modern companies use AI-driven systems in daily business processes. I did not want my learning to stay limited to lectures, labs, and assignments. I wanted to see how systems behave when they are supporting real workflows, real deadlines, and real business needs.

Finding the internship was not easy. I first took the traditional approach and applied through common internship platforms and online job boards. Over time, I submitted more than two hundred applications for positions related to cybersecurity, IT, and AI. That process was frustrating because it required a lot of effort without immediate results. I had some interviews that seemed promising, but not every opportunity moved forward. Some roles were affected by budget limitations, while others did not seem like a realistic long-term fit. In the end, I found this internship in a less traditional way. Through my work in videography and content creation, I had built connections with clients, and one of those conversations eventually led to the opportunity with Captivize. That experience taught me an important lesson before the internship even began: career growth does not always happen in a straight line. Sometimes the opportunities that matter most come from staying open, staying prepared, and continuing to talk about your goals.

According to my Memorandum of Agreement, my internship title was **Product Development & Technical Support Intern**, and I worked under the supervision of **Thomas R. Shelinsky**. The internship was based in **Delray Beach, Florida**, and it began as a remote role before later shifting into some in-office work in Florida. My MOA also listed four main learning objectives. First, I wanted to develop a working understanding of AI-driven automation systems. Second, I wanted to gain hands-on experience with troubleshooting and optimization by identifying and addressing technical issues within AI-driven tools and workflows. Third, I wanted to understand how AI and automation solutions are implemented at scale for businesses, including how technical decisions affect efficiency, security, cost, and client experience. Fourth, I wanted to build stronger professional problem-solving and project management skills by working on assigned tasks with deadlines, adapting to changing requirements, and learning how technical work aligns with business goals. These objectives gave my internship a clear direction from the beginning and helped me measure my growth throughout the semester.

Based on the work I observed and participated in, Captivize operated in a space centered on AI-driven automation systems and workflow support. While I was not involved in every executive detail of the company's client development or business strategy, I was able to see that the company's work focused on using AI and automation to improve business operations and streamline recurring processes. The systems I worked around were designed to make workflows more efficient, reduce repetitive manual effort, and support the broader goals of the business. That made the internship especially valuable to me because it showed me that cybersecurity is not limited to clearly labeled security tools. It also exists in system reliability, workflow structure, input validation, documentation, and the decisions teams make about risk and performance.

My initial orientation and training focused on learning the company's internal tools, reviewing current workflows, and understanding how the automation systems were structured. In the beginning, I spent a lot of time learning how tasks were automated, how data moved through the process, and where failures or inefficiencies could happen. At first, that stage felt more like observation than direct contribution, but it quickly became clear that this early learning period was necessary. I needed to understand the system before I could responsibly help improve it. That first stage also changed my impression of the internship. Before I started, I expected cybersecurity work to look more directly security focused. Very early on, I realized that cybersecurity in a real business can also mean understanding system reliability, secure automation, validation, documentation, and careful decision-making.

2. Describe the management environment at the internship.

The management environment at my internship helped me grow quickly because it provided both structure and flexibility. I reported directly to Thomas R. Shelinsky, and there were daily online check-ins that gave me clear direction and accountability. That setup was especially helpful at the beginning because I was still learning the company's systems and needed a better understanding of priorities. Having regular communication made the environment feel organized and professional instead of confusing or disconnected.

One thing I appreciated about the management structure was that it balanced guidance with independence. Early in the internship, I needed more support because I was learning the workflows, the internal tools, and the general pace of the company. As I became more familiar with the role, I was trusted with more responsibility. I went from mostly learning and reviewing processes to actively participating in troubleshooting, documenting issues, analyzing workflow

behavior, and contributing to discussions about system performance. This gradual increase in responsibility made the environment effective because I was not overwhelmed too early, but I also was not kept in a passive role.

The management environment changed even more when the company paid for me to move to Florida on short notice so I could do some in-office work. That shift raised the level of responsibility and made the internship feel even more real. It showed me that the company valued my role enough to bring me closer to day-to-day operations, but it also forced me to adapt quickly. Even though that change was stressful, it also demonstrated that the company trusted me and saw my work as meaningful.

Overall, I believe the management environment was effective for my internship because it gave me regular supervision, room to grow, and exposure to real expectations. One of the clearest signs of that was that within about four weeks, I felt I had gotten up to speed with full-time employees. That would not have happened in an environment that was either too hands-off or too limiting. The daily communication, combined with growing independence, created a strong setting for learning and professional growth.

3. Describe your major work duties, assignments, and projects. Explain how each may be necessary to the business.

My major work duties during the internship centered on learning, reviewing, troubleshooting, and improving AI-driven automation workflows. In the beginning, much of my work involved becoming familiar with the company's existing automation systems and internal tools. I reviewed workflows to understand what they were supposed to do, how data moved through

them, and where errors or inefficiencies could appear. This early work was necessary because it gave me the foundation to later participate in more direct technical problem-solving. For the business, this kind of review mattered because a workflow can only be improved responsibly when the person working on it fully understands how it operates.

As I became more comfortable, one of my major duties became analyzing automation workflows that supported business processes. In several situations, I helped trace how data moved through the automation pipeline to identify where delays or failures were happening. This included reviewing configuration settings, observing actual system behavior, and comparing expected outputs with real outputs. This duty was important to the business because these workflows were meant to automate repetitive tasks and keep operations moving efficiently. If a workflow failed or slowed down, it affected reliability and overall performance.

A major real-life example involved a workflow that was not producing the expected output because of a small configuration issue combined with unexpected input data. At first, the issue did not seem especially serious. However, after looking more closely, it became clear that one small problem was affecting the rest of the process. In response, I helped review logs, retrace the workflow steps, compare expected behavior with actual behavior, and think through the root cause before any major changes were made. This type of work was necessary to the business because workflow issues do not only create technical inconvenience. They can affect productivity, client-facing processes, and trust in the system.

Another important responsibility involved evaluating possible workflow improvements. As the company continued to work with AI-driven tools, I became involved in discussions about whether certain changes would improve performance without introducing unnecessary risk. One

strong example involved the possibility of reducing validation steps in order to make a workflow faster. On the surface, that sounded like a useful change because speed can improve efficiency. However, removing those safeguards could also increase the chance of inaccurate outputs or unnoticed errors. That made this duty necessary to the business because technical improvements are only valuable when they strengthen the system overall. A faster process is not always a better process if it becomes less reliable.

I also had responsibilities in documentation and communication. When issues were found and resolved, I helped document troubleshooting steps, workflow behavior, and the reasoning behind certain decisions. This was necessary to the business because documentation reduces repeated mistakes, supports consistency, and makes future troubleshooting more efficient. I also had to communicate technical findings to people with different levels of technical understanding. That was important because technical work is only useful if the team can understand what is happening and make informed decisions based on that information.

Overall, my major duties were necessary because they supported the reliability, consistency, and improvement of systems the company depended on. Even when the task seemed small, such as reviewing a workflow or documenting a fix, it contributed to keeping the larger system stable and useful.

4. Discuss your specific use of cybersecurity skills or knowledge in the internship.

This internship gave me a much better understanding of how cybersecurity skills apply outside of traditional security-only roles. Before this experience, I often thought of cybersecurity mostly in

terms of attacks, malware, firewalls, and other clearly defensive tools. Those areas still matter, but this internship showed me that cybersecurity is also tied to automation quality, system reliability, secure design, documentation, and risk-aware decision-making.

One of the biggest cybersecurity skills I used during the internship was structured troubleshooting. When a workflow behaved unpredictably, I worked through the problem by reviewing logs, retracing the process, comparing expected results with actual results, and focusing on the root cause before recommending any change. This mattered because quick fixes can create new vulnerabilities or leave the real issue unresolved. The workflow problem caused by a configuration issue and unexpected input data is a strong example of this. That situation showed me that maintaining system integrity often depends on how carefully smaller technical issues are handled.

Another important area was validation and secure design thinking. I observed that workflows without strong validation or error handling could create reliability problems and increase risk. That made it much easier for me to understand why cybersecurity is connected to how systems are built, not just how they are defended later. A weak process, poor configuration, or missing safeguard can become a real problem even without an outside attacker. This changed how I understood cybersecurity because it showed me that many risks begin with weak internal processes rather than dramatic security incidents.

I also used cybersecurity thinking when evaluating risk during optimization discussions. The conversations about reducing validation steps to improve performance helped me understand that cybersecurity often involves tradeoffs. Faster systems can be valuable, but only if they remain dependable. That kind of thinking is central to cybersecurity because it requires asking questions

such as: What happens if the input is wrong? What happens if an error is missed? What is the effect of this change on reliability? These are the kinds of questions that help prevent avoidable problems before they become more serious.

Documentation was another important use of cybersecurity knowledge. I learned that strong documentation supports accountability, reduces human error, and preserves system knowledge across a team. Poor documentation can lead to repeated misconfigurations and inconsistent troubleshooting. Good documentation supports a more secure and reliable environment because it makes the system easier to understand and manage over time.

Finally, communication was one of the most useful cybersecurity-related skills I strengthened during the internship. I had to explain technical issues and workflow changes in a way that others could understand. In cybersecurity and technical work more broadly, communication matters because risk is not managed well if it cannot be clearly explained. This internship showed me that being able to translate technical issues into understandable terms is a major part of being effective.

Before the internship, my skills were more connected to classroom concepts such as secure design, risk awareness, troubleshooting, and general cybersecurity foundations. During the internship, I had to apply those ideas in real time while also learning new skills related to AI-driven automation, workflow analysis, documentation, and controlled testing. Because of that, my understanding of cybersecurity changed from something narrower and more tool-focused into something broader and more connected to real business systems.

5. How did the ODU curriculum prepare you, or not prepare you, for the internship?

Old Dominion University gave me a strong foundation for this internship, especially in the way it trained me to think critically about systems, risks, and technical responsibility. One course that clearly helped was **CYSE 301: Cybersecurity Techniques and Operations**. That course focused on hands-on cyber operations and included topics such as tracing network traffic, identifying vulnerabilities, understanding attacks and defenses, and managing data securely. Even though my internship was not focused entirely on traditional network defense, CYSE 301 helped me develop a mindset for looking closely at technical behavior, identifying problems, and thinking through issues carefully instead of rushing to conclusions.

Another course that helped was **CYSE 406: Cyber Law**. On the surface, that class might seem less directly connected to AI-driven automation workflows, but it affected the way I thought about privacy, responsibility, information handling, and the broader consequences of technical decisions. The course covered legal and policy issues involving digital information, privacy, data protection, and the rules that affect cyber-related work. That background helped me understand that technical systems do not exist in isolation. Decisions about how systems handle information have consequences that go beyond simple performance.

The ODU curriculum also helped me by giving me the general ability to connect classroom theory to technical practice. Topics such as risk management, secure design, troubleshooting, and accountability were easier to recognize in the internship because I already had some academic background in them. For example, ODU helped me understand why reliability and security

matter. The internship then showed me what that looks like inside real workflows and business operations.

At the same time, the internship taught me things that school could not fully teach on its own. Classroom assignments are usually cleaner and more structured. Real work is messier. A workflow issue can involve several smaller causes at once. A change that improves efficiency may reduce reliability. A system can seem stable until unexpected input reveals a weakness. The internship showed me how technical work really functions in a fast-moving business setting.

The internship also taught me more about communication, documentation, and workplace adaptability than school alone could. In class, technical correctness is often the main goal. In a real work environment, technical correctness still matters, but so do timing, clarity, teamwork, and the ability to explain issues to different people. Those are areas where the internship revealed new skills and expectations that I had not fully encountered in school.

Overall, I would say ODU prepared me well in terms of fundamentals and critical thinking. The internship then built on that foundation by showing me how cybersecurity ideas actually operate inside AI-driven business systems.

6. For each outcome or objective, you explained in the introduction, describe how the internship fulfilled or did not fulfill the goal.

The internship fulfilled the learning objectives listed in my MOA in a strong and practical way.

The first objective was to **develop a working understanding of AI-driven automation systems**. This goal was fulfilled through my daily exposure to the company's workflows,

internal tools, and automation processes. Early in the internship, I spent time learning how these systems were structured, how tasks were automated, and how data moved through the workflows. By the end of the internship, I had a much clearer practical understanding of how AI-driven automation functions in a real business environment.

The second objective was to **gain hands-on experience with system troubleshooting and optimization**. This goal was fulfilled through the work I did reviewing logs, retracing workflow steps, testing changes in a controlled way, and helping identify the causes of workflow failures. The strongest example of this was the workflow issue involving a small configuration problem and unexpected input data. That situation gave me direct experience in diagnosing a technical issue instead of only learning about such situations in theory.

The third objective was to **understand how AI and automation solutions are implemented at scale for businesses, including how technical decisions affect efficiency, security, cost, and client experience**. This goal was fulfilled through the discussions I was part of regarding workflow performance, reliability, and risk. The example involving whether to reduce validation steps for speed was especially important because it showed me that technical decisions affect much more than performance. They also affect trust, reliability, and the quality of results.

The fourth objective was to **build professional problem-solving and project management skills by working on assigned tasks with deadlines, adapting to changing requirements, and learning how technical work aligns with business goals**. This goal was also fulfilled. The internship required me to learn quickly, manage responsibilities, adapt to changes such as moving from remote work into some in-office work, and balance technical expectations with

school obligations. It also helped me understand how technical work supports larger business goals rather than existing in isolation.

Overall, I believe the internship fulfilled all four objectives. It gave me real technical growth, but it also gave me professional growth. That combination is what made the experience valuable.

7. Describe the most motivating or exciting aspects of the internship.

The most motivating aspect of my internship was how quickly I was able to grow in the role. Within about four weeks, I felt I had gotten up to speed with full-time employees. That gave me a major confidence boost because it showed me that I could adapt quickly in a real technical environment and contribute at a meaningful level. It made me feel that I was not just there to observe. I was becoming someone who could actually help.

Another motivating part of the internship was seeing how small technical actions could affect larger operations. Troubleshooting, documentation, validation, and workflow adjustments all had real consequences. That made the work feel meaningful. I was not just completing tasks for a grade. I was helping support systems that people depended on. That gave the role a stronger sense of purpose and made me more invested in doing the work carefully.

The most exciting outcome of the entire internship was being offered a full-time position after graduation. That made the experience much more meaningful because it showed that my work had value beyond classroom credit. It was proof that the growth I experienced during the internship was real and recognized by the company. More than anything, the offer made me feel that this internship was not just one assignment in my degree path. It was the beginning of a real professional path.

8. Describe the most discouraging aspects of the internship.

The most discouraging part of the internship was having to move to Florida on short notice.

While the move came from a positive opportunity, it still created pressure because it forced me to adjust quickly. Relocating while still dealing with school responsibilities was stressful, and it added a personal challenge on top of the technical work I was already trying to keep up with.

This was discouraging because even good opportunities can come with difficult transitions. The move changed my routine, created uncertainty, and made balancing everything harder in the short term. It reminded me that growth opportunities are not always convenient. Sometimes they come with real personal and logistical pressure that you still must manage if you want to keep moving forward.

At the same time, this discouraging part of the internship also taught me something valuable.

Professional opportunities often require flexibility, and part of being dependable is learning how to respond when circumstances change quickly.

9. Describe the most challenging aspects of the internship.

The most challenging part of my internship was balancing school with the internship itself.

Managing coursework while also keeping up with real technical responsibilities required strong time management, discipline, and focus. There were times when I had to move between academic work and internship work quickly, and that made the semester feel demanding in a very real way.

The work itself was also challenging because the problems were not always simple. In school, many assignments are designed to point you toward a clearer answer. In a real work environment, problems can be much less direct. A workflow issue may involve several smaller causes. A change that improves one part of the process can create a problem in another. The workflow problem involving configuration issues and unexpected input data is a good example of that. It was not a dramatic system failure, but it showed how complicated even small issues can become when systems depend on many connected parts.

Another challenge was adapting to the pace of a developing AI environment. AI-driven systems can be powerful, but they can also be unpredictable when workflows, validation, and monitoring are not strong enough. Learning how to work in that kind of environment while still building my own skills pushed me in a positive way, but it definitely required patience and adaptability.

10. List your recommendations for future interns in this internship. What preparations do they need before beginning the internship?

My first recommendation for future interns is to take time to understand the workflows before trying to improve them. It can be tempting to jump into solving problems quickly, but that can create new issues if you do not fully understand how the system works. During my internship, one of the biggest lessons I learned was that understanding the full process is the foundation for making responsible changes.

Second, future interns should be patient when troubleshooting. The fastest fix is not always the best fix. Good technical work often means slowing down, reviewing the evidence, tracing the

process carefully, and identifying the real cause before changing anything. That approach leads to better results and protects the reliability of the system.

Third, I would recommend documenting everything. Documentation is not just an extra step. It helps future troubleshooting, improves consistency, and reduces the chance that important knowledge is lost. It also makes the intern more useful to the team because their work can continue helping after the immediate issue is resolved.

Fourth, future interns should be prepared to communicate clearly with both technical and non-technical people. Technical knowledge matters, but so does the ability to explain what is happening, why it matters, and what a change might affect. Good communication helps teams make better decisions and prevents misunderstandings.

Finally, future interns should be ready to adapt. This kind of internship can move quickly, and balancing responsibilities can be difficult. Staying organized, asking questions early, and being flexible when things change will make a major difference in how successful the internship feels. In terms of preparation, I think future interns should come in with a foundation in cybersecurity concepts, a willingness to learn automation systems, and the discipline to manage both technical work and outside responsibilities.

11. Conclusion

Overall, my internship with Captivize LLC was one of the most meaningful experiences of my college career. It gave me practical exposure to AI-driven automation systems, workflow analysis, troubleshooting, documentation, and technical decision-making in a real business environment. More importantly, it changed the way I think about cybersecurity. I now

understand that cybersecurity is not only about direct threats and obvious attacks. It is also about validation, system reliability, secure design, communication, documentation, and the everyday decisions that determine whether a technical system can be trusted.

This internship helped me grow both technically and professionally. It taught me how to analyze systems more carefully, how to avoid rushing to quick fixes, how to think about the tradeoff between speed and reliability, and how to communicate technical information clearly. It also helped me better understand my own strengths. I learned that patience, adaptability, and clear communication are just as important as technical knowledge, and I learned that I enjoy work that involves solving problems in a careful and meaningful way.

My internship experience will influence the remainder of my college time at ODU because I now connect classroom concepts much more directly to real operations. When I think about topics like secure design, risk management, documentation, and system reliability, I no longer think of them only as academic ideas. I think of them as things that affect real workflows and real business decisions. This experience also made my future direction much clearer. I want to continue growing in work that connects cybersecurity with automation, troubleshooting, system analysis, and modern business operations.

The fact that I was able to get up to speed quickly, adapt to a major transition, balance school with the internship, and ultimately receive a full-time offer after graduation makes this experience even more meaningful. It showed me that this was not just an internship for credit. It was the beginning of a real professional path.