

Thomas McCoy

## Individual Capstone Assessment

To me, this project will be a way to develop the skills that I learned more recently in my academic career. It will also be a way to solidify my more general coding skills. More specifically, I will develop the skills I learned in EECE4029 Operating Systems and Systems Programming and CS4065 Computer Networks. I enjoyed taking both of those classes last fall and I'm excited to do more work in that area. Additionally, this project will allow me to learn more about the cyber security field. I'm currently taking CS5155 Cyber Defense Overview but other than that my experience is minimal.

I believe there are two classes I've taken that will be a help in completing this project. The first one is EECE4029 Operating Systems and Systems Programming. In this class we did lots of work with processes and process management. That will be a necessary skill to have since we want to focus on each individual process and what they're doing. The other class is CS4065 Computer Networks. In that class we learned all about the different types of network protocols. Since we want to example the network traffic going to and from all of the processes, that knowledge will also be essential.

I had to drop one co-op as the result of changing majors. Therefore, I only did four co-ops during my time at the University of Cincinnati. The first two were done at BlueHalo, a defense contractor, as a software engineering co-op. There I developed my C++, Python, and Bash skills. My final two co-ops were done in Germany working for Mercedes-Benz as a software development intern. There I further developed my C++ skills. Since C++ has many similarities to C, I expect to use my C++ skills to help with C development when working on the Linux support for the tool. I expect to use my Python skills to help capture the network traffic. During all of these co-ops I had to work a lot with others, which is always a necessary skill in group projects.

My motivation for this project is to develop skills that I learned in class, but didn't get to develop on co-op. For example, I didn't get to use any of the knowledge or skills I gained in CS4065 Computer Networks on my spring and summer co-ops, so I haven't had an opportunity to apply that knowledge. This will be a great opportunity to not only solidify what I learned previously, but to develop it further. Designing a solution will take a lot of discussion and planning. One way we will help design our tool is by using the Process Manager tool as an example. Process Manager is a Windows tool that shows process activity.

My expected result is a fully functional tool that will allow the user to monitor processes and their network activity. This tool would include a well-designed interface that allows the user to see important information quickly and easily. There are multiple ways I will self-evaluate my contributions. One way is by simply testing our tool against the goals that we set to see if it meets all of those goals. Another way I will self-evaluate my contributions is by putting myself in the mind of someone who hasn't used the tool before. I will do this to help determine whether the interface of the tool has been designed well.