

Computer Science Senior Design Assignment 3

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This capstone project, from an academic perspective, is a culmination of the skills developed over the course of the Computer Science program. This project allows me to look at all the skills I have developed academically and analyze those. Then, I can utilize the ones which I find most important to create something that will signify the end of my academic program. This is also the chance to see where I am compared to my peers. I wish to find out whether my breadth and depth of knowledge is something that is unique or not. I also wish to know how our creativity in terms of project design compares to the rest of our peer groups.

The classes that I think will help the most are D&A of Algorithms, Operating Systems, Networking, and perhaps any of the Cloud/Parallel Computing classes I'm currently taking. The other courses, while giving me a basic understanding of programming, will not help in a specific way. These concepts from Algorithms, Cloud Computing, and Parallel Computing will help when architecting the entire project and deciding what technologies to use. It will allow us to build in a way that is scalable beyond poorly designed systems. The Operating Systems and Networking classes will help in tackling advanced concepts like byte code instrumentation. Byte code instrumentation will most likely be an experimental feature that we may or may not indulge in but having knowledge of Operating Systems and Networking will help us if we do.

Most of my co-op experiences have been with IT Solutions Center, an organization within UC. Here I learnt about basic web application development initially, which will help in building our web facing part of the server monitoring platform. I also learnt about software architecture here, which will help in making the same decisions for the platform. My only other co-op was for the Performance and Scalability Team in Tesla. The experiences from here which I can utilize are the client-side experience of a server monitoring platform. I can also utilize my knowledge of database indexing and server metrics from the same experience.

My motivation for this project is mainly to have an outlet for all the experiences I have built up over 5 years. This project will be a great showcase for all that I have learnt and that is why I'm motivated to make it as good as possible. As mentioned earlier, this is also a benchmark for me to compare myself against my peers which excites me further. The preliminary approach to designing a solution has already been undertaken. Utilizing the experiences mentioned above, we tried to weave in as many technologies and sophistications as we can. As we begin implementing, we can either increase or decrease the level of refinement needed.

The expected results from this project would be a functional open source server monitoring platform. This platform should have enough documentation to be picked up by anyone with a basic understanding. This platform should function with all the features which have been put forth as possibilities. My main understanding of when we will be done is when the team as a whole decides that the project is a success. This will most likely be in terms of all the features being developed and functional. Another way to evaluate ourselves is our peers. If an external entity looks at our platform and is able to understand how it works and why it is needed, that would make this project a success.