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Senior Design

Sept 13, 2021

Individual Capstone Assessment

The senior design project is an opportunity to learn something new and grow academically. I believe the project we have chosen allows me to take that opportunity. Our plan is to build a substrate pallet for on-chain quadratic funding. This pallet will be written in Rust, and there will likely be a related UI portion. We do not expect this to be an easy undertaking. I hope to come out of this project with a solid understanding of how a blockchain functions and what it looks like to build services on top of them. I do not know all the advanced features of Rust, or much about substrate, but I am excited to learn.

Many of the courses I’ve taken at UC up to this point will help me be successful in completing this project. I have taken courses that involve many different languages, namely Python in Python Programming (CS2021), Java in Software Engineering (EECE3093), and C++ in Data Structures (CS2028). With my knowledge in other languages, I do not fear to learn a new one, and I trust my ability to get up to speed quickly with new languages. Software Engineering (NUMBER) also helped prepare me in making good judgment with project requirements. Much of that course discussed making sure project expectations are realistic and possible. Design and Analysis of Algorithms (CS4071) will also prove useful as that course helped me better understand more advanced computer algorithms.

The five co-op experiences I completed will also be helpful for this project. As a software developer at Precision Strip Inc. (PSI) I was given the opportunity to learn a lot about the software development process. At PSI I was also the first point-of-contact on their “IT Help” internal phone support line for one out of every three weeks. This user-facing role allowed me to improve my communication skills, specifically with explaining software functionality to people who do not have a technology background. As a software developer at London Computer Systems (LCS) I was allowed to take my development skills to the next level. While at LCS I learned iOS development with Swift, Android development with Kotlin, and API development with C#. Working with three new languages, and being exposed to new engineering paradigms, I have a much-improved sense of the underlying architecture of a language and of the platforms being developed on. LCS also uses the agile method of software development, PSI used an old-school approach to development. Having worked with both methods I have formed a strong understanding of what agile development means, and I see the benefits of pre-planning work and breaking it into simple parts. Together these co-op experiences have prepared me to be a productive member of a development team.

I’m very excited to work on this project because I view it as a challenge. Technically it is a challenge since what we are trying to complete is listed as an RFP (Request for Proposal) by the Web3 Foundation. I want to take full advantage of this opportunity to learn Rust and gain a deeper understanding of blockchains. Learning a new language is always fun for me, and Rust is one I’ve been wanting to tackle for a while now. I’ve studied blockchains some in the past, so I have an understanding on how they operate and the problems they can solve. I would like to take my knowledge to the next level and have the chance to innovate in this rather “new” space.

We will know that this project was a success if everyone comes out smarter than they went in. Personally, I hope that when this project ends, I will be able to confidently solve most problems in Rust. I would also like to satisfy the conditions of the RFP and truly complete the project. To know if I had done a good job, I must end with the ability to fully understand the substrate framework down to the little details. At that point I would have felt like a productive member of this team. We have high hopes and big ambitions for this project, completing the RFP is our end goal, but knowledge is really what were after.