

Individual Capstone Assessment

Alexander Davison

I see this Senior Design project as a vessel to explore new areas of computer science that I haven't had tons of exposure to thus far. That is why for my project I would like to center it around Amazon web services. Cloud computing is a growing market and amazon web services provides an on-demand cloud computing platform and API. I believe cloud computing will be implemented by more individuals in the future and AWS is a great vessel to do so. That being said, knowledge of the background, processes and implementation would be a very valuable background as I look to enter the workforce. The possibilities of AWS are virtually endless, so I am looking to have the project mainly be focused on research and implementation of more general background and foundational aspects of AWS.

I am currently enrolled in a Cloud computing class (CS-5165), which is what struck this interest for me in the first place. My professor for the class works full time at 84.51 where he utilizes cloud computing for his day by day work. I don't think many courses that I have taken thus far would be super applicable to this topic, which is a huge draw for me to learn it now, since I likely won't get a ton of exposure otherwise. There is a class I intend on taking this spring (database theory: CS5158) that would likely have takeaways that would aid in my cloud computing knowledge. There are tons of curriculums online, some offered by amazon that would be great resources. CS 4092 Database and Design and Development would be helpful if I went the database route but that is yet to be determined.

I worked 2 rotations at L3Harris where part of my job was working on CI/CD pipelines, which can be done with AWS. Part of that task dealt with Docker, which has a service called Docker Cloud. A company like L3Harris would likely greatly benefit from AWS from a business and technological standpoint. My knowledge of CI/CD pipelines and Docker will aid in my research and implementation of AWS. I also worked 2 rotations at London Computer Systems, where they offer their product, Rent Manager, via the cloud. Becoming more knowledgeable about cloud computing and AWS would make me more valuable in each of these previous positions and in future positions to come.

Like I mentioned above, after being exposed to AWS in my Cloud computing class, I became very interested in the topic. I think that Cloud Computing is an emerging, newer technology that is very applicable as a solution to many companies' technological limitations. Much of what we learn in the classroom is foundational / theoretical (less applicable to the real world), whereas AWS and cloud computing is a current and future portion of the current computer science landscape. Becoming knowledgeable and certified in different AWS disciplines would broaden my knowledge of computer science as a whole. It would also make me much more of a valuable asset to whatever companies I end up working for. L3Harris and LCS would both have greatly benefited from utilizing AWS.

As far as a solution is concerned, we need to first lay out what the goal is, which at this point I have defined as: to gain theoretical knowledge and experience implementing with AWS. I would begin with researching the basics of cloud technologies and would follow with setting up commonly used technologies in AWS. The final portion would be a more specific project using the knowledge I have gained so far, while building onto it, in a varying category (TBD, need to

discuss with Advisor). Those categories could include business applications, cloud financial management, data distribution, etc. The actual specifics of the project still need to be fleshed out one I meet with an advisor but I know I want to utilize AWS and the first part of that would be becoming more familiar with it. Evaluation of my progress would be in the form of certifications in AWS (Cloud Practitioner and Solutions Architect (Associate)) as well as completion of preset requirements that will be defined by myself and advisor once I get one and we come up with a final portion of the capstone.