Individual Capstone Assessment

As the end of my college career starts, I am looking forward to culminating in the skills I have acquired from my classes and my co-op experiences. For my senior design project, I will be exploring my low-level programming skills by creating a card sized GPS module. This will require PCBA design, battery management and fundamental understandings of low-level programming such as RTOS and C programing. I am excited to learn more alongside my peers Nihaal Sidhu and Keegan Hood. Additionally, our student advisor, Brian Loudin, is looking forward to supporting us as we learn more about project development.

At the university of Cincinnati, I have explored the diverse curriculum. The computer science curriculum is designed to explore the large array of industry skills varying from database development, networking, and programming fundamentals. Specifically at UC I enjoyed developing websites and full-stack development in CS 4092 Database Development. I gained crucial programming skills that ensured I will grow as an engineer.

Alongside my education at UC, I have had on-hands experience at engineering firms. During my co-op at Hobart, I worked as a full-stack developer. I had to quickly learn different frameworks such as REACT, Springboot JPA and loads of other tools necessary for development. For my next co-op I switched teams to work on the Product Development team to build automated test fixtures. For this co-op I learned a C++ framework that handled GUI and multithreading. This project encouraged me to develop low-level programming skills and a keen interest in PCBA design. Finally, for my final co-op, I worked at an aero-space company called York Space systems where I was tasked with developing high end test automation racks and deployed them to a vendor.

Unlike my other co-ops, I oversaw development and pushed the project forward. I learned key soft skills such as intercommunication between teams, responded to feature requests and handled expectations between the vender and York Space Systems. These skills encourage me to grow as an engineer and demonstrate my communication skills and commitment to constant feedback and growth.

From these experiences, I plan to use both my hard and soft skills to build my senior design project. For the GPS module development, I plan to use my skills in project development, PCB design and low-level to support my team Specifically, I will be the teams lead software engineer and hard support. I will work alongside Keegan to choice components and PCB design.

My hopes for this project is to fully develop a working GPS module that is size efficient and has an effective UI. This will require a module to report it's GPS coordinates and be easily found within a room. I am excited to work along my peers and advisor to learn more about low-level programming and PCB design.