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CPRE 494

Cumulative Reflection

Beginning my degree in computer engineering at Iowa State, I came into university with little technical knowledge of the field. I've always been interested in computers and it had always been a dream of mine to become an engineer, so this degree path made the most sense to me. Although my performance in STEM courses in high school was the worst of all subjects, I really wanted to challenge myself to pursue something I am interested in, while also maintaining confidence that I will always be intrigued by the world of tech professionally. In this pursuit of a computer engineering degree I've realized important factors when it comes to engineering that I didn't expect before.

The courses I have taken at Iowa State have helped me sharpen my technical skills, which was very important to my growth as I came into school with little experience. Through taking courses within the core CPRE curriculum I became more familiar with the tools that are required when it comes to problem solving in the computer space, or just engineering space in general. Although these courses provided a necessary backbone of knowledge for problem solving, the opportunities provided to me through lab or project based courses at Iowa State is where I was able to grow the most. These projects not only helped me in the context of gaining technical engineering knowledge, but also provided context to how to work within a team. Within these projects, I found myself learning from other students just as much as the course work. I was given opportunities to learn about things that I would otherwise not have, as this required me to delve into different specific areas of application building (like learning backend frameworks for mobile application development for COMS 309 or my senior design project), or simulation programming (like building a real-time scheduler simulation for my CPRE 458 course).

Furthermore, my learning was enhanced through groups outside of the classroom. As a second year student I decided to join the Robotics Club at Iowa State. I didn't know much about robotics upon joining, nor was it really a passion of mine, however this decision became one of the most impactful to my growth as an engineer during my time at ISU. Because of my lack of knowledge in robotics I found myself having to ask a lot of questions about design and general work when designing/building our robotics projects. It's important to note that before this experience I was not an involved student and asking questions about any subject matter was intimidating to me. However, through these questions I found myself learning a lot. These experiences bestowed upon me a new confidence, and I don't mean a confidence in my own knowledge, but a confidence to admit gaps within my knowledge and just ask. This confidence truly helped me to become a better communicator throughout my academic and professional career and allowed me to grant myself room to grow through others. In the many group projects I

had been a part of due to the CPRE coursework, I learned to rely on classmates to assist in parts projects I was less familiar with. These communication skills helped me gardner leadership positions within group projects (i.e. Senior Design, COMS 309), as well as Robotics Club itself where I became a project lead and safety officer for the club.

Another aspect worth highlighting from Robotics Club is an exposure to other technologies I would not have been exposed to in my normal CPRE studies. Because there are many parts in designing and building a robot, this includes programming which was a strong suit of mine due to my studies, but there are also mechanical and electrical aspects as well. Due to my leadership position within the club I was inclined to become involved in each of these less familiar aspects. I was exposed to CAD software and designing different parts to build the robot, this being something I would have likely never been exposed to. This investigation into other parts of engineering makes me a more well rounded engineer as it has taught me about how necessary continued learning is in the engineering field.