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A Reflective Journey: Navigating Your Cumulative Experience at Iowa State University

My time at Iowa State has been a very enlightening experience, where I have learned not only technical skills involved with becoming an engineer, but also what the field is about and what it strives to accomplish. While the field does come down to being able to perform technical feats, it involves so much more than that. Throughout my time at Iowa State, I have learned that being an engineer involves being able to efficiently communicate and cooperate effectively with others in the field. Through these skills, I hope to play my part in developing quality solutions in an ethical and successful manner.

The biggest resource that I believe has helped me develop these skills over the past few years has been my fellow students. Whether it has been through group projects, nights spent in the library, or working on labs in the TLA, it is easy to find help and advice through your classmates. Courses can be challenging, as they are meant to be, but they can also be a great way for you to meet people with different prospectives to the same problem. It is often that you can find that someone, with a different skill set or view of the problem can make a world of difference when you are trying to accomplish something together. It is also a great way to challenge your understanding of skills and content, as being able to communicate with your peers allows you to share your understanding and perhaps gain a better understanding from others.

One of the best places I have found to find other students within your field alternatively from lecture are through participation in other organizations and events. The career fairs are a great experience, allowing you to get in contact with fellow classmates you may not find in lectures, as well as get in touch with potential employers. For me, it was a great way to hone my communication skills, and it was nice to be able to share what I have learned and the skills I have developed. Besides being able to share my experiences, the fairs were also a great way to see how much I had yet to learn. I got to see and talk about tons of different projects and applications for our field, which helped to drive me to dive further into the field to improve my knowledge.

While on this journey to attaining my degree, I have many different memories of times that challenged me in a way that forced me to grow. The most prominent time that comes to mind is for lab 2 in CPRE 381. I remember being in the TLA working in the lab along with a large group of people in my lecture section. It was the first time for many of us that we had dealt with a project at this scale, and we were quick to learn that we needed to understand the content to a deeper level than we had before in previous classes. Therefore, as a group, we all worked together through research and cooperation to help one another understand the project. For me, this was a substantial change in how I approached my coursework from then on. I realized that it was not so much about having

an answer to the task at hand but having a better understanding of the concepts at work. With this understanding now, I have realized that this is a good practice for life. If you want to continue building skills, you must understand the reasoning for what you are doing, not just finding the simplest solution.

In my academic career, the biggest change I would make is trying to be more involved. I have little to no regrets about the things I did do, as they were good lessons to help prepare me for future classes or my future career, but there are times I wish I had tried to get more involved with clubs or undergraduate research. I feel as though I have learned a lot, but most of my progress has come from coursework. While coursework is important and informative, I would have liked to get a more industry like hands on experience that goes beyond what we can learn in a lab or classroom.

However, it is through this coursework that I have found what topics that I am very interested in within my field of computer engineering. I have recently started taking CPRE 5870, or Hardware Design for Machine Learning. While the class has been quite challenging, it is in a way that seems more exciting than daunting. We began class by explaining what machine learning is and some basic concepts, all things that are easily understood from a little bit of research. But within these first few weeks of the semester, I already feel that I have acquired a much deeper understanding of the topic. I feel that this primarily stems from the encouragement of this class to perform our own independent research to further understand the material.

The best example of this would be lab 2, which we just completed a week ago. While we were explained how DNN model's work in class, applying these concepts and programming the logic yourself is an entirely different matter. Classmates, TAs, and the professor were all great resources, but when it came time to submit the project it was simply a display of your own understanding. This application required us to come up with our own creative implementation of a machine learning model, pushing me in an academic way that I have not experienced before.

This class had led me to think about how much my approaches to accomplishing tasks have changed over the years. As an early student in the program my primary goal when doing coursework was to get a correct answer, likely similar to how most students are early on. However, my time in the Iowa State program has taught me that engineering is about more than simply being correct. It is about devising solutions, analyzing consequences and outcomes, and determining what is the right implementation to fit the needs of your current project. And most importantly, it is about understanding the concepts and continuing to learn to skill to do each project a little better than the last.

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As I continue this path, both academically and after graduation, I hope to further my skills in the fields of machine learning and high-performance computation. I am looking to finish my degree with these topics in mind and look into graduate school to further pursue these areas of study. After graduation, I hope to work with a company working within the high-performance computation field, contributing to the development of new and better technologies for all of computer engineering. I envision building further into this skillset by continuing to focus coursework within this field, as well as taking on more personal projects to help build my skillset for both personal and professional success.