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

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Introduction

Welcome to my reflection on my time as an undergraduate computer engineering student at Iowa State University. This reflection will show my experience and the value I have gained during my time here.

Embracing the Bigger Picture

While at Iowa State, I have had to take many courses inside and outside of engineering. While most of the courses were in computer engineering, there were plenty of opportunities to expand my knowledge in other areas.

One example is my first year, when I took an honors seminar on Geoengineering. For this class, we would have weekly discussions on several climate change topics, from their causes to discussing potential solutions that have been proposed. We would debate each solution's effectiveness and practicality. This class allowed me to hear other people's perspectives and voice my own on these topics.

Overall, that class showed me that problems and solutions are not as black and white as they may seem, and there are many factors to consider when deciding on a solution.

Beyond the Classroom: Tapping into the Richness of Resources

Iowa State provides lots of opportunities for its students. While some of those resources may not be as obvious as gyms, a library, housing, and dining centers. There are still many more passed those obvious ones.

Overall, the most valuable resource I have found from Iowa State is all the available career development programs. The resume reviews have helped prepare me for career fairs and job applications. Allowing me to put my best foot forward. The career fair has been helpful, especially as a freshman and a sophomore, getting me exposure to industry professionals and job opportunities outside of school.

Embracing Lifelong Learning Beyond the Classroom

I have had opportunities to learn outside of the classroom. I have had a semester of undergraduate research through the honors program that involved machine learning. I was also a teaching assistant for two semesters for an introductory digital logic course at Iowa State (CPRE-281).

During this role, my responsibilities included giving a one-hour recitation at the beginning of the lab, guiding students through their labs, and grading exams. This job was a great opportunity because I learned more about digital logic than I did the first time. Overall, this showed me that learning is not a one-time event; it's a process that takes time and sometimes multiple tries.

Pioneering Growth Through Adaptation

Last summer, I interned with Collins Aerospace in Burnsville, Minnesota. During this internship, I had plenty of opportunities to apply what I had learned in class to a professional environment. This opportunity also allowed me to adapt from an academic to a professional environment.

Crafting a Narrative of Growth

If I were to go back and start my undergraduate studies again, I would emphasize less on grades and more on learning. There have been plenty of times during my undergraduate studies when I stressed too much on grades and sacrificed learning for it. While grades are mostly correlated with learning, sometimes there are classes that can be sort of "skimmed" and receive a high grade without much learning occurring. I would go back and take the time to take these courses more seriously.

A Glimpse into the Acquisition of Knowledge

At the time of writing this, I am in the fall semester of my senior year. I am taking hardware machine learning and theory-based artificial intelligence courses. Both classes are niche topics that I had little exposure to previously, except for my research. The classes were quite confusing when the semester began, but as time passed, I found more common ground with these courses and those I had previously taken. These courses became more understandable because I could relate them to my previous experience, which is important when learning new information.

Transformative Applications of Knowledge

Several times at Iowa State, I have converted my theoretical knowledge into practical implementations. The most helpful way that my classes have guided me in this is through labs. The labs provided ways to apply what I had learned in lecture.

One of the most important labs I have had is in the first embedded systems course I took at Iowa State (CPRE-288). During this lab, we implemented all the topics we discussed weekly in class. Then, towards the end of the semester, my team and I worked on a final project that was an autonomous ice cream truck. The goal of the project was to use the CyBot (A Roomba with a microcontroller) and have it traverse a park (boundary) and deliver ice cream cones to children (skinny tall objects) while avoiding rocks (short wide objects), trees (tall wide objects), and lakes (holes). This project involved lots of object detection and decision trees to make this work autonomously. Overall, this project enriched our learning as well as having a satisfying outcome, making it one of my favorite projects I have worked on while at Iowa State.

Evolution of Learning Strategies

My learning strategies have evolved during my time at Iowa State. Initially, I would try to fully understand a topic before attempting it in a lab environment. I found this to be ineffective both in terms of time and learning. Learning through the textbook would take me much longer than getting my hands dirty in a lab setting. I've shifted to a new approach to learning through the lab, reinforcing that learning through the textbook and lectures has been much more effective.

The Path Ahead: Continuous Development

One area I hope to improve is my drive to seek new knowledge. Sometimes I do not learn as much as possible because I do not “need” to, which is a mindset I want to improve. After all, learning is important to staying ahead in an engineering environment. I plan on getting my master’s degree after graduating and working full-time. I am not sure what exact field my master’s will be in, but my learning time is not over yet.

Conclusion

This reflection of my time at Iowa State has shown me how much I have changed and developed as a person entering the professional engineering field. I plan to use my knowledge and skills to achieve outstanding achievements in my engineering career and outside my life.