

# Cumulative Reflection

Jason Ramirez

“Learn how to learn” is the motto I heard when I first came to Iowa State University, and it is something I still hear to this day. To me, that motto encompasses a majority of what ISU and the College of Engineering ECpE have taught me. Especially in Computer / Software Engineering field, in order to stay relevant, one must be able to constantly be learning new technologies and methodologies. So to have the confidence to always learn new things will take me a long way in my career. But to become an engineer, you need more than technical knowledge. Throughout my classes, work experience, organizations and on campus jobs, I have learned different skills that I believe will make me successful.

Iowa State University Electrical and Computer Engineering courses, from what I have experienced, are designed to take applied science that we learned in the classroom and take it into the real world with the lab portions. This was especially true with my favorite class, CprE 288: Embedded Systems. In this course, it was all about taking code we wrote and having a physical object move. The most important part of the class was the final project where we had to take everything we learned and make a robot go through an obstacle course. On top of that, this was also a group project with four people on each team. This was the first group project in Computer Engineering and I was ready to take it head on. I learned about distributing work, trusting my teammates and solving problems as they came. In the end, our team was successful in accomplishing our goal. Something I would have done differently after reflecting on it would be to encourage others to give ideas on how to solve the problem instead of me presenting all of the ideas.

After the embedded systems course, it was summer. That meant internship time! I was ready to take all my knowledge I had gained from school and my previous internship and apply it to my new internship. That summer, I worked at Procter & Gamble, maker of all products below your kitchen sink and in your bathroom. There I was tasked with solving a particular problem: how do we make a machine on the assembly line both faster and not need human intervention to get it running correctly. My first task was to go out to a factory and learn about the machine I would be working on. I took a trip from Cincinnati and flew over to Utah to see this machine. There I talked with technicians and assembly line managers, grabbed insight from them and took all that data and started on my project. Then back at the office, I got help from multiple different team members, as well as people outside of my department, helping me with problems I had not learned in school such as statics, dynamics and optimization. But I was able to gain insight from all the brilliant people and culminated it into a final product that was able to create the speeds and timers for the machine without human input and had twenty five percent faster throughput of the products. I only wish that I would have spent more time talking with even more people.

On top of all the classes and internships I have had during my time at Iowa State University, I also enjoyed all the various clubs and organizations I was a part of. The one that is most memorable to me would be CyMake. CyMake is the organization that puts on the bi-annual hackathon at Iowa State, more commonly known as HackISU. My role in the organization was as operations chair, where I had to relay information to multiple different sources as well as help give small workshops so that participants of the hackathon could learn different technologies before the hackathon started. I believe I was successful in conveying technical

information over to both participants and non-technical parties because I had the experience of doing that in my Computer Engineering classes where I would give presentations about either projects or a topic I had researched. Those classes gave me the confidence to present my ideas to a room of people.

College would not be complete without an on campus job. Luckily for me, I really enjoyed my job as a teaching assistant for the Computer Science department. I was a TA my Junior year for Intro to Object Oriented Programming and my Senior for Data Structures. As a TA, I am able to give back from my knowledge that ECpE has given me and put it to good use teaching. As I was inspired by the various teaching assistants in my past classes, I also want to inspire students and have their dreams become reality. The job has also taught me how to communicate for general help as opposed for teaching for the first time. I am able to deduce questions into answers for students, without having to touch their keyboards at all.

The platform of education, confidence and leadership is one that Iowa State University has provided for me. This platform will serve me well for the rest of my professional career.