Cumulative Reflection

Ryan Gallus

Iowa State University has done an incredible job of preparing me for a future engineering career. Throughout my engineering classes, I have learned all the skills, techniques, and tools I need to be a successful computer engineer. Many courses also provided lab time or required I develop a major project, which allowed me to apply the content I learned in class. In addition to my classes, Iowa State University has helped me gain valuable professional experience through internships from the Engineering Career Fair. I was able to complete three internships, one doing software engineering for Cerner, another doing software engineering for IBM, and a final internship with Boeing as a project manager. All of these experiences have prepared me for a future engineering career.

One course that taught me a lot early in my college career was CPR E 288 - Embedded Systems. In this class, I attached hardware components to a robot and wrote embedded code to make it work. I developed technical skills in computer hardware and software development, and learned how to build on previous work to solve a complex problem. Embedded systems are critical in cars, aircraft, manufacturing equipment, and robotics, so it is important to understand how it works and how development is done. After taking the class, I decided to apply my new knowledge by starting a Raspberry Pi project.

Later in my degree program, I took an extremely valuable class called COM S 309 - Software Engineering. In this class, I joined a team of three other students in developing a semester-long software project. I learned about web and mobile development, as well as project management, UML design, and how to operate effectively in a team. We used a number of outside resources in our project, such as Apache Cordova for the mobile application, and React for our user interface. After the class, we decided to make our project an open source repository on GitHub so we could continue to apply what we learned and allow other interested students contribute.

After gaining significant experience in the classroom, I had the opportunity to do a software engineering internship with IBM. Here, I applied my knowledge to do enterprise software development for the WebSphere Java EE application server. I learned agile development practices, how to use version control and continuous build systems, as well as the fundamentals of software design in a large technology company. With a strong background in software engineering, I decided to pursue a project management internship with Boeing. Through that internship, I learned how to plan and schedule projects, set priorities, manage issues, and support development teams.

Iowa State University has taught me a lot about being a computer engineer. I have learned the fundamentals of computer hardware and software design, how to manage a project, how to communicate effectively, and how to work with a team. Through my classes and professional experiences, I feel very prepared for a career in engineering.