

Raj Singh

Cpre 494

### Cumulative Reflection

Through my time at Iowa State University, I was able to gain a deeper understanding of engineering. This experience has allowed me to become an engineer. The university's hands-on approach to engineering allowed me to work on projects and exercises that were very challenging.

ISU helped me choose a major and prepare me for a successful career in engineering. When I entered the university's engineering program, I was not sure which direction I wanted to take. I decided to major in computer engineering because it was the most popular major. After taking various engineering courses, such as physics and calculus, I became clear about what I wanted to study.

During my time at ISU, I became interested in electric circuits and networking infrastructure. Most of my friends went the software route, while I decided to study computer engineering knowing it would be more difficult. Although it might not be easy, I decided to take the Integrated Circuits course, as I was curious about how semiconductors work. At the same time, I took the CprE 381 course, which was very challenging. Although it was one of the most challenging courses I have ever taken, I enjoyed it giving me a much better outlook on the beauty of computed calculations. Through the knowledge I gained in the course, I was able to connect concepts such as abstract ideas and low-level transistor gates to computer architecture. In addition, I was able to create my own processor. Through the knowledge I gained, I was able to start a long-awaited project. I came up with the idea of creating a single instruction processor using a minimalistic architecture, which was an unusual concept I came across on Wikipedia. After getting approval for my proposal, I started working on a prototype of the processor. During the course, I also tried to create a fully functional version of the processor by debugging the architecture and designing a manufacturing version of the device.

Throughout the process, I had the opportunity to meet with several professors at Iowa State University. They were very supportive of my project and were excited to see what I would be working on. I took advantage of what Iowa State had to offer with their career services. From there I was able to have my resume checked as well as conduct some mock interviews.

During my internship at Casey's General Stores, I was able to expand my knowledge about networking by learning how a company's IT infrastructure is setup. I was only given one project, and I was able to finish two of them. During my free time, I was mainly focused on software. I learned how to program services that utilize API's and develop applications using Python. As I became more comfortable with the process, I started developing ideas for automating certain tasks at the company.

By being innovative and productive, this internship resulted in a full-time offer at Caseys's. Not to mention give me so many ideas for personal projects in my free time. As a result I am very interested in computer networking, and I decided to go into it as a profession by working toward some certifications.