

Nathan Whitcome

I've really enjoyed my time at Iowa State University. I spent many, many nights staying up until the early hours of the morning trying to finish one last part in a coding project. I learned a lot about resilience and having passion for what I do. My experiences working in teams really helped me understand the importance of communication, something I understood before but not to the extent that I do now. Overall, I feel that ISU has prepared me for my future in the working world, but my internships have helped almost as much.

The kind of learning done in a lot of my classes at ISU can only be described as "on rails". The projects I did and the concepts I learned in class were very formulated and had a lot more to do with memorization rather than learning a lot of the time. Of course, it's very hard to change that when there are hundreds of students taking a single class. Considering this, I feel that the school has done a good job in helping us design systems and processes. There were a good number of projects in classes like Computer Science 227 and 228 that taught us a coding process that revolved around writing code piece by piece and creating tests for it, although a lot of those projects were fairly explicit on what you had to do for each step and didn't help me too much in terms of figuring out a way to solve an engineering problem. There were other more advanced classes for that, such as Computer Science 311. I'm glad things were split up this way, I don't think I would've had the capability to think of the bigger picture in my early classes where I was still trying to learn the syntax. I do feel like I've learned a good amount about working in teams, although it's difficult at school since I was being graded on how I did, so if someone slacked off I was incentivized to do their work for them because I didn't want to be punished. I guess that in itself is a lesson. In terms of ethics, I feel that I learned a decent bit, although it wasn't pushed as hard. I'm not the kind of person to copy the code of other people and there was a strong emphasis on doing your own work as well as thinking of others while doing it..

I learned a lot from my internship experiences over the summers that I was able to apply to my work at ISU. When I first started working at Power Electronics, there was a project I was assigned to that had not yet been started. They didn't even know what they wanted to use to create this project. I ended up learning how to do reactive, full stack web development by looking at videos and documentation on the internet, and got fairly good at it. I didn't realize how much more I used it than my peers until I got back to school and started working on personal projects, learning new things like the LIFX and Spotify APIs just from looking at documentation. To me, it wasn't that hard to look at the references that were given to me and piece something together, but other people I knew struggled with it. I also learned a lot about choosing the right tool for the job and when to use resources that are available to me. I used a lot of Node.js, which uses a package manager called NPM that loads open-source packages. I wanted to do a lot of things myself at first, but I grew to understand that most of the time it's better to use a package that some other people have made that they have spent the last year working on instead of trying to re-make it myself.

For classes like Com S 228, I relied a lot on discussing the projects with other people to succeed. I had a tutor for most of the class, which was nice for me since I enjoy talking with people about the concepts in a more personal situation. They way that other people were able

to describe problems and solutions to me in a way that worked with my style of thinking made working on large projects a lot easier for me. I remember meeting up with some friends in the TLA to work on projects for the class and learning from the way they approached problems and contrasting that with how I do in order to make myself better.

One of the biggest parts of my learning experience at Iowa State University was the Hackathons. I had a ton of fun working on projects with a time constraint, even though I worked by myself for each one. They showed me that I can still make programming and learning new APIs and languages fun for myself even when I've been doing a lot of programming in class. They helped boost my confidence and get me to understand what I'm capable of when under pressure. I walked out of two of the hackathons with no working project, the first time because I was too hard on myself. I was a freshman who had done almost no programming at all and expected myself to have a fully functioning program by the time I was done. I didn't have as much fun and that made it a lot more difficult for me to be creative. For the second time, I wanted to make a synthesizer, but I didn't do enough research into understanding what languages I would need to use to make it work properly and I spent my night trying a bunch of different things and not getting any of them to work. I learned that I need to do my research beforehand and that I need to understand the concepts behind something like that before I can start seriously working on it. By time the third hackathon came around, I was a lot more prepared and was working with something that I had a better understanding of. I was genuinely excited for my project and wanted to continue to work on it outside of the hackathon, which also made me a better programmer.

Overall, I feel that my learning has really been improved by my experiences at Iowa State University. I came into school not knowing how to do any programming and am now leaving knowing how to do algorithm analysis and full stack web development. Aside from my technical skills, I learned a lot about having passion for what I do and not giving up even when I fail. Is there anything I would do differently if I had to do it all again? I would try to have stronger connections with my teachers and try to get involved with more engineering clubs. I'm not too hard on myself about those since I really packed my semesters full to make sure I graduated in four years. I did the best that I could, and I'm happy with the results.