

Cumulative Reflection

My time at Iowa State University has given me ample opportunity to grow and excel in the engineering profession. I have had both classes and extra-curricular activities to expand my knowledge and try (and fail) to apply what I know and become a better engineer. Among the most helpful things this college has given me are: the ability to learn for myself, familiarity with industry standard tools, and an environment where I can stretch my abilities.

It's no secret that electrical engineering is hard work, but the amount of homework assigned and the theory we are expected to learn has made me a much better self-teacher. For instance, in CprE 288 (embedded systems) we have a final project that consists of using an array of sensors to navigate a Roomba through an obstacle course. In the past, there was a thought that the hardware on the robot was not very good and each bot needed its own calibration. Applying problem solving and self-learning skills, I figured out the problem was not in the hardware but rather the base code handed out to students. I spent a couple weeks rewriting the software, learning a lot on the way (mostly through struggling) so current students have less hassle. The many examples like this have helped me to be better at self-teaching.

Another invaluable toolset I have learned at Iowa State is how to use proper test and measurement tools. We are lucky enough to be fully stocked with industry standard tools like oscilloscopes, function generators, power supplies, and multimeters. I have used these tools to do personal and school projects (including the rewrite of the code for CprE 288) and when I did an internship at Garmin I was already familiar with the tools, as they used exactly the same ones we have at the school.

I have also found satisfaction and engagement with resources outside of classes to be tremendously helpful in classes and engineering problems. I was part of a team developing a new hardware platform for our signals and systems classes. I did the board layout using skills and tools I had learned about with outside resources, in particular using YouTube, online forums, and support from people who have familiarity with the tools. On the same project, I used a 3D modeling program to create a model of an enclosure for the project and we had a machine shop produce the cases. Most of these skills have been learned from engagement in outside resources.

Going beyond the skills mentioned above, I am continuously trying to engage in lifelong learning. I have recently started learning about leather-working and plan on doing several textile projects when time permits (probably over the summer). I hope to constantly pursue learning something new and trying something different through every chapter of life.

Iowa State has been a great resource for allowing me to grow and become a better engineer. The lab facilities, professors, and classes have been exceedingly helpful in growing my knowledge and learning new skills. Outside of the classroom, the culture of

engineering and my love for creating things has pushed me to continuously explore avenues of creation and learn new skills. I am constantly trying to look at things from new perspectives, improve my knowledge base, and expand my technical ability.