Theodore Davis
CprE 494
11/13/20

Cumulative Reflection Essay

Through my time at Iowa State University I've learned about what it takes to be an engineer. I've earned experience not only inside of class but also outside as well. I've encountered problems in my projects where I had previously solved them in my classes but more than likely I've run into a new problem I've never solved before.

When I first came to Iowa State University the only real program experience, I had was a website development competition where I learned the basics for html. I had always wanted to learn how to properly program and I did by learning C in class. The next semester I was learning java and working on a project with my friends. We were trying to determine a objects x and y coordinates on a board by using cameras to see where it was. We honestly had no idea how to implement this so we talked to a professor to see if he had any ideas. Our professor, Dr. Daniels, pointed us towards of finding a weighted center of mass where the color of our object was to have a heavy weight compared to every other color. The reason I bring up this story is because we hadn't yet learned about determining center of mass in calculus yet, so when we did cover that subject I was already familiar with the theory and equations we were presented as I had managed to implement them in our project.

One of the most realistic and eye opening classes for me was CprE 288, embedded systems. In this class we had to write reliable well documented code. The reason that this class sticks in my head is that the exams were all open note. You might ask, "How do you fail an open note exam?" Well, the only notes you really needed was the datasheet for the microcontroller unit (MCU) we were working on at the time. However, you needed to know how to read the datasheet in order to do well in the class. This carried with me as in my senior design class, where we're building a drone from the ground up, I have had to read though several datasheets to select a proper MCU. I needed to make sure we had enough I/O pins as well as support floating point operations. I also used the experience I gained reading the data sheet in 288 to determine proper pins to create the pin assignments we needed for the different signals of our drone.

I have had to rely on the skills and lessons I have learned in class to be successful in my personal pursuits. However, not everything is provided to me from these classes. I have had to teach myself on various subjects to complete projects. While I have learned a lot and Iowa State, I still have a lot left to learn.