In the past four years at Iowa State. I haves seen immense growth in my confidence and ability levels, both inside and outside the classroom. I have gone from admiring teaching assistants and club presidents to having experience in both positions. My time at Iowa State has been incredible, and I am looking forward to leveraging who I am become wherever life takes me.

Electrical Engineering 185 was my first engineering class. This class is responsible for developing my curiosity and strong interest in Electrical Engineering. In the lab for this class I developed a Morse code interpreter. It took the user's button pushes and printed the text equivalent to the terminal. I spent a lot of time thinking about this project including talking about it to my friends and comparing their methods of how they would have implemented features to how I implemented them. This was my first experience using a microcontroller and I learned a great deal about debugging techniques, such as going through the program step by step, and unit testing, as well as managing my own project. I also learned how much I enjoyed working on projects.

I joined Critical Tinkers to further delve into my interests in projects and critical thinking. This is in stark contrast to my experiences prior to taking EE185 where I felt that I had neither the skill nor the creativity to work on projects in the club. In the club I worked on projects that include, a magic mirror, an automatic bike light, and a robot. Through the club I met and worked on projects with dozens of other engineering students of various majors. I was able to learn some of their techniques and skills. Critical Tinkers also took me to elementary schools across Ames to help their students discover how much fun playing with things like circuits, motors and other aspects of electrical engineering is. I decided to take up a leadership position in the club. Initially, I aspired to be the outreach chair and organize the club's presence at Elementary

schools and other events, but I realized that I had enough big ideas that I could run for president of the club. This position initially seemed out of my reach and too much for me, but the more I thought about I realized that I could step up to the plate and lead the club through another school year. As president of the club I was responsible for sending out the weekly email, planning meetings, and managing projects. I used a lot of the skills learned in my English 314 class for writing emails and communicating with companies such as John Deere and Kingland. When I was president of Critical Tinkers I used my engineering knowledge to lead several technical skills workshops including; soldering, 555 timers, Arduino microcontrollers, and PCB design.

My junior year at Iowa State I became a teaching Assistant for Electrical Engineering 285 Problem Solving and C programming under Dr. Daniels. For this position I used knowledge I had gained from friends, hackathons, my own EE285, and researching select techniques and syntax online. Previously I had worked as a swim lesson instructor and a calc tutor for the academic success department, so I was able to leverage some of my teaching skills gained from those positions and my enjoyment of helping students. This position at times was ethically challenging having to confront students about where they got their code and limiting their resources for the lab practical.

Following my junior year, I had a co-op at Collins Aerospace, working both summer 2018 and the following fall semester. My first project for them was designing a PCB filter circuit. I had decent experience with filter circuits from my electrical engineering 230: Electronic Circuits and Systems, and 324: Signals and Systems II, classes. After getting a handle on the scope of the project and what the PCB would be, I was able to use the techniques I learned in Electrical Engineering 230 to calculate the values of the components I would need for the filter circuit. I then leveraged the PCB design skills I learned through critical tinkers to do the

board layout and routing. It was my first time going through with getting a board for one of my PCB designs that I made. It was an incredible feeling to hold it in my hands and use it for its task.

I am very grateful for all the opportunities Iowa State University has given me. Throughout my experiencers I have grown as an engineer, a student, and as a person, getting to know who I am more with every turn. I am excited to find where life will take me next.