



MATC Internship Report

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Over the span of the MATC Internship program working at Midwest Roadside Safety Facility (MwRSF), I have gained valuable experience with various engineering software such as AutoCad and Solidworks. However, I believe the knowledge I gained about how an engineering firm runs and about how important teamwork and communication are in order to successfully complete a project has been far more valuable. During my internship I have had to learn how to be comfortable with asking for help and for clarification on instructions when working on tasks. Learning how to ask specific and clear questions when starting a new project has been a skill I have been learning and improving on over these several months, and I realized that it is much less time consuming to ask questions right away rather than to sit and try to figure out the specifics about the tasks I have been assigned.

One of my first projects I was assigned to work on this summer was recreating a physical component in Solidworks, the purpose of which was to allow researchers to drive a car remotely into a barrier. This project required me to precisely dimension all of the different parts of the component with a caliper, while also creating rough sketches of each part to later draw up in the Solidworks software. I enjoyed the challenge that the task provided of figuring out the best way to recreate all of the parts as well as keeping in mind the necessity of being accurate and precise in my measurements and sketches. After the project was completed, I was much more confident in my abilities to create parts in Solidworks and in my abilities to create engineering drawings detailing out the different parts and assemblies on the component.

Another project that I have worked on this summer is a project to come up with an uncertainty value for a GPS surveying unit that is used to measure different locations

on a crash test barrier or rail before and after a test has been run. This project pushed me to learn more about how uncertainty is determined in measurements, and I had to think of different factors that can affect the accuracy and precision of the GPS unit. Working with several engineers in the office, we created multiple tests which would be run to find out how much different environmental elements affect the measurements as well as how much user error needed to be accounted for in the determination of the uncertainty value. This project helped me work on my interpersonal communication skills as I had to describe my findings to other engineers and researchers in a manner that allowed them to understand the data without having previous knowledge about the project.

In between the larger projects that I worked on this summer I would be assigned to smaller tasks such as creating drawings in Solidworks for a new rail system that was going to be tested out at the test site. I would also be assigned to complete different components of a project report that would be created after a test was completed out at the test site. These components included documenting the locations of all of the cameras that were used during the test as well as creating still images from videos of the crash showing the different events that happened to the car over the duration of the crash.

Overall, I am glad that I decided to accept the MATC internship opportunity while working at MwRSF this summer. I believe the skills and knowledge that I gained this summer are attributes that are difficult to teach and learn in a college class. This opportunity has helped set me up for success after graduation, and I have developed helpful insight into what my engineering career after college will look like. I would highly

recommend this internship to engineering students looking to develop the necessary skills and experience that will help prepare them for a jumpstart into the world of engineering after graduation.