

The project focus is around green energy and to create a solar panel device that maximizes electricity output by measuring electricity input and adjusting itself accordingly. From my perspective, it is a project that will be able to portray the computational skills that I have developed over my time here. Those skills include everything from software programming to machine interfacing. It is a project that culminates a little bit of everything instead of focusing on one attribute. It will require extensive designing, programming, electronics and sensor development, and software-hardware connectivity. On top of that, it also will serve a real function for future green energies.

College provided me with the base level building blocks that I was able to take further via co-op. Through classes like EECE-1080C and CS-2021 I was provided opportunities to learn specific programming languages and get used to how syntaxes and logic work. That was then taken a step further in CS-3003 where we understood how these languages came about and what they were based in. Then advanced understanding and technical concepts with EECE-4029 made a lot more sense and I was able to truly learn how the data interacts and how the registry interacts. These skills all lead into how the program interacts with hardware level components, which is crucial for our project as it will require automation via servos based on high level math calculations based on data read from sensors.

I've been fortunate in my co-ops to have worked with companies ranging vastly in what each of them do. I've worked with Northrop Grumman, Siemens Digital Industries, and am currently still employed part time with Cleveland Cliffs. Co-op has provided me with the most opportunities to expand some of my non-technical skills. Skills such as teamwork and effective communication, where although I have developed these to a certain degree in class, it is much different in the workforce and even where working at Siemens I was on a national scale as our team had members in California and Georgia. Technical skills were numerous, mostly based in furthering my programming and development skills. At Northrop I helped test via python testing suites and currently at Cleveland Cliffs I maintain production server environments and actively develop the HMI.

This project was not of my own design but of my team lead's design. When looking for a group to join his idea stuck out to me as an opportunity to hone certain skills I was interested in. As well as the target for future green energy and sustainability. Obviously, there is a large need for software development at the back end, but there was also a hardware aspect that piqued my interest. Through college, I haven't been given many opportunities to work with hardware interfacing and so the challenge aspect drew me in. But also, as I look forward to my career.

My current employment at Cleveland Cliffs has led me to realize I enjoy working in a more hands on OT/IT blended environment. This project allows me to start experimenting with that and applying that. It can also build from what I have already learned from work. I work with PLC and automation systems, factory line management, and sensors and servos. This project deals with not just maintaining systems like that but also developing those systems from the ground up. Our preliminary plans on how to go about this still need some fine tuning but as you can see, I have a few ideas to support.