



Programming a LabVIEW Application to Configure & Communicate with High Frequency Drives

Brandon Colon, Computer Engineering, 2021

Intellectual Achievement/
Communicating Effectively &
Intellectual Dexterity

SUMMARY

It was during the summer of 2019 where I had the opportunity to travel to the University of Illinois at Urbana-Champaign and conduct research within the electrical and computer engineering department for ten weeks. It was during this experience where I worked with Power Optimization for Electro-Thermal Systems (POETS), on a NASA funded testbed designed for high power testing of electric motors for aircraft propulsion. I was tasked with programming the motor controllers on the testbed to set up a range of parameters for the motors to run. I had many different goals that I achieved during my time at Illinois: by presenting at a research conference, networking with graduate students, and confirming my desire of graduate school.



SPICES

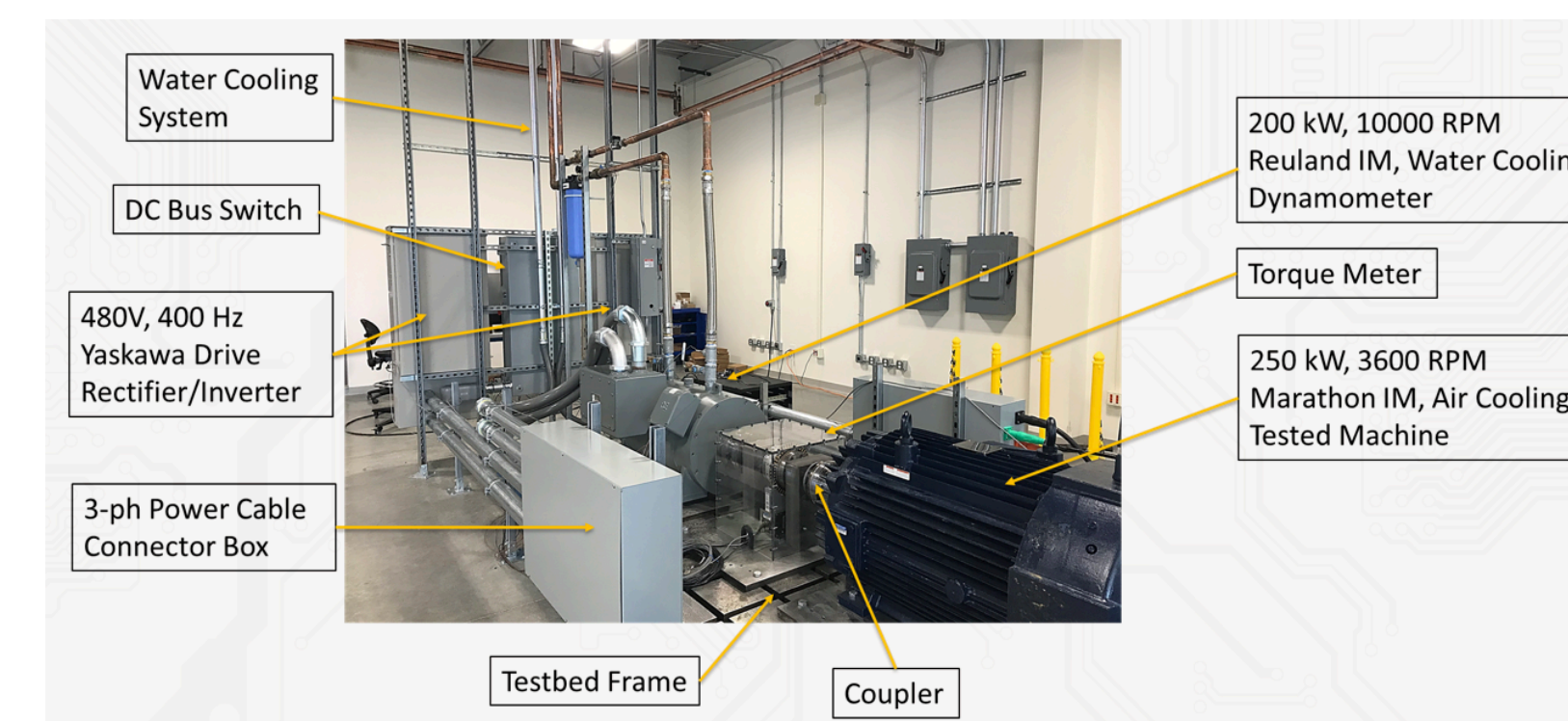
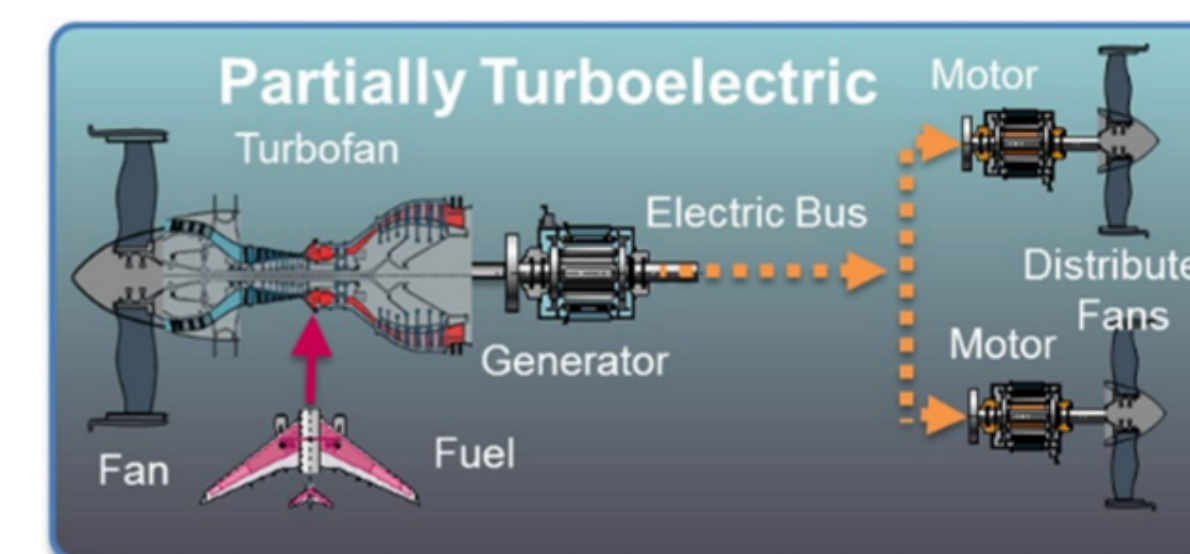
Intellectual Achievement- It was through this experience where I learned a new programming language and conducted research at the graduate student level, producing presentations and a research abstract.

HERBS

Support- I took their specified goals and ideas and transferred them into the product, by listening and following in their guidance and expertise.

LEARNING OUTCOMES

Intellectual Dexterity- I had no previous experience in LabVIEW, but by using my prior knowledge of C++, I was able to break down the code and learn the fundamentals needed to communicate with my mentor. Communicating Effectively- The REU concluded with many multiple multi-media presentations, where I taught others about my research through a Webinar, poster board, and powerpoint.



IMPACT

The REU presented a new way of looking at academia through the perspective of a researcher, giving insight on how a graduate study would work. This allowed me the opportunity of collaborating and adding to ongoing research that is set to change the future of aircraft propulsion to a greener alternative. I learned new skills in communication and upper level electrical engineering, through hands-on experience with soldering, filtering signal data, and learning LabVIEW. There was never a dull moment; I was working with industry professionals, networking with professors, and being mentored by graduate students.

ADVICE

Don't ever be afraid of applying for something that is going to make you leave your home and be uncomfortable. Doing this REU has fundamentally changed the way I encounter research and how it will play a critical role in my future and hopefully yours too.

