Carlos A. Wong

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SUMMARY

A self-motivated, organized, and reliable individual with an interest in modeling and simulation, control development, and system engineering principles, with a knack for public speaking, active listening, and teamwork.

EDUCATION

Florida State University: FAMU-FSU College of Engineering Tallahassee, FL — GPA: 4.0/4.0
Master of Science in Electrical Engineering — Dec 2020
Bachelor of Science in Computer Engineering — May 2018
Minor: Physics

TECHNICAL SKILLS

Programming Languages: Python, MATLAB, C++
Tools: MS Office, MS Excel, MS PowerPoint, AutoCAD, Blender, RSCAD, KiCAD, LabView, Git, YAML, JSON
Operating Systems: Microsoft Windows OS, Linux Ubuntu, Apple Macintosh OS
Foreign Languages: Spanish – Fluent written/spoken; Mandarin – Beginner

EXPERIENCE

Center for Advanced Power Systems Tallahassee, FL
Graduate Research Assistant — May 2018 - Present

- Designed and developed a signal interface in Python and its interface control document (ICD) to ease the control development process by enabling controllers to interact with a low-fidelity model and a real-time high-fidelity simulation environment by using User Datagram Protocol (UDP).
- Performed requirement analysis and documented functional, performance, and interface requirements for a fault management approach of a notional shipboard power system.
- Developed a control algorithm to recover a notional shipboard power system from an electrical fault, with a worst-case runtime of 87 milliseconds, by leveraging real-time simulators, control hardware-in-the-loop (CHIL), and test-driven development.
- Evaluated algorithm performance with a test automation framework that coordinates real-time simulation & control hardware, and automated evaluation of test results with the use of metrics.
- Designed electrical signal conditioning PCBs, created MATLAB scripts to auto-populate results for a Factory Acceptance Test (FAT), and used Modbus protocol to communicate between proprietary hardware and a real-time simulator, while working in an expert controlled environment.

FAMU-FSU College of Engineering Tallahassee, FL
FREEDM Undergraduate Researcher — Aug 2017 - May 2018

- Simulated a system of ODEs with the Newton Raphson method in C++ to reduce the transport shuttling effect during charge and discharge cycles of Lithium Sulfur batteries.

Florida State University: Utilities and Engineering Services Tallahassee, FL
Control Systems Internship — Mar 2015 - May 2018

- Organized and managed HMI programs with Siemen's APOGEE Building Automation Software to be accessible by the Field Technicians, Engineers, and the Florida State University management.
- Programmed enhanced alarms for fault detection purposes that require temperature sensitive research environments, producing a safe contingency plan for the researcher environment.

LEADERSHIP

Senior Design: Fault Prediction System for Drone Motors
Team Leader – Sponsored by GA Electromagnetic Systems — Aug 2017 - May 2018

- Lead a team of four through the engineering design process, while meeting deadlines.
- Created an electric motor testbed to simulate a relevant environment for a drone to evaluate the performance of future fault prediction system implementations.

OUTREACH

PeaceJam Southeast Tallahassee, FL
Mentor — Fall 2017

A nonprofit organization that facilitates groups of youth in workshops and sustainable service projects to spark a commitment to justice and peace, build cross-cultural understanding and increase global awareness with the help of noble peace prize laureates.