

EDUCATION

Youngstown State University Youngstown, OH

- Masters of Science Electrical Engineering, GPA 4.0 Dec 2023
- Bachelors of Science in Electrical & Computer Engineering, GPA 4.0 May 2022

SKILLS

- **Hardware** : Embedded system design (TI, STM32, PIC, UART, SPI, I²C), FPGA, PCB design and layout, Soldering and PCB assembly, PLC, Power Electronics
- **Programming** : C, C++, Python, VHDL, Verilog
- **Software** : PCB Design (Altium Designer, EAGLE, KiCAD), Circuit simulation (LTspice, Pspice), Control system simulation (Simulink, MATLAB, LabView), Git, AutoCAD, ProductCenter

EXPERIENCE

Luxium Solutions

Hiram, OH

Electrical Engineer

Jan 2024 - Present

- Create schematics and board layouts using EAGLE for analog front-end readout electronics for Silicon Photomultiplier(SiPM)-based NaI/LaBr₃ scintillation detectors
- Diagnosed functionality issues in existing designs, collaborated with the firmware team to implement and validate updates to resolve the issues; the improved reliability contributed to a high-value production order of ~600K value
- Developed and implemented a custom Python/Tkinter GUI to streamline production programming, data acquisition and test validations of SiPM detectors
- Lead continuous improvements and development of legacy designs by integrating new technologies, reduce defects in manufacturing increase yield, and improve quality
- Collaborate on the development of SiPM build procedures and PMFEA analysis, contributing to process formalization and quality control

Electric Vehicle Charging, Signals and Power Solutions, APTIV

Warren, OH

Electrical Engineering Intern

May - August 2023

- Designed and developed the next generation of testing apparatus for efficient End-of-line testing and debugging solutions for Electric Vehicle Supply Equipment (EVSE)
- Led the complete design cycle of PCBAs for the testing apparatus from ideation, schematic entry and PCB layout using Altium Designer to board bring-up
- Expanded the existing test setup to accommodate and test 6 samples concurrently with updates in firmware and hardware using the new-gen PCBAs with PIC16F18856 MCU
- Redesign of the test apparatus resulted in 56 % reduction in the product cost price while elevating the product functionality with improved GUI application
- Root-cause analysis and redesign of two PCBAs used in an existing product line, schematic design and PCB layout of a new product by adhering to automotive standards & integrating key features

Electrical and Computer Engineering Department

Youngstown, OH

Graduate Research Assistant

May 2022 - Dec 2023

- Design & debug variable frequency soft-starting Sinusoidal Pulse Width Modulation (PWM) and Space-Vector PWM driver for motor drive written in VHDL using Xilinx Vivado and implemented on Arty A7 FPGA development board
- Guide undergrads through their laboratory assignment for instrumentation and computation labs to familiarize them with circuit simulator tools like PSpice, test bench equipment and assist in linear controls laboratory
- Collaborated with peers in firmware development of a custom sensor tag board based on TI's CC1352P1 MCU and developed SPI driver for ADXL343 accelerometer and I²C driver for BME280 humidity sensor
- Early stage experimental verification and testing of novel 3D-printed ferrite base for MHz inductive wireless power-transfer application using GaN-based inverters

Pump and Motor Division, Parker Hannifin

Youngstown, OH

Engineering Intern, Research and Development

Jun 2021- May 2022

- Performed endurance and performance tests on pumps based on product specifications, analyze test stands readings and characterize and document the nature of faults in pumps and motors
- Implemented custom interfaces in the PanelView application based on feedback from technicians and assisted in electronic controls upgrade of the test stands

PUBLICATIONS

Harmonic content analysis of a soft starting variable frequency motor drive based on FPGA. Published in: 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric Transportation (SEFET)