ANDREW XU

andrewxu.ca
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B. A. Sc. Mechatronics Engineering

Skills

Design: Analog & Digital Circuit Design, Embedded Systems, Power Electronics, Control Systems, Sensors & Instrumentation

Tools: Altium, KiCAD, Eagle, LTSpice, RapidHarness, SolidWorks, AutoCAD, MATLAB

Languages: C, C++, Python, Java

Experience

Hardware Designer, Scope
June 2020 - Present

- Designing a multi-channel synchronous wave generator with adjustable frequency and amplitude to tune optical power in lenses for use in cellphone cameras.

Electronics Development Intern, Structur3D Printing
May 2020 - Present

- Designed, tested and programmed entire AVR based embedded system for desktop injection moulding machine.
- Facilitated supply chain setup for machines to support manufacturing ahead of 2020 shipment.

Electrical Engineering Intern, Formlabs
Sept 2019 - Dec 2019

- Simulated, designed and tested wireless interlock system to disable lasers on Form 3L to achieve UL certification.
- Characterized thermal behaviour of ultrasonic sensors and heater systems to increase Form 3L system performance.

Projects

Hardware Designer, Fourth Year Design Project
May 2020 - Present

- Designing embedded system to track and transmit impact data (acceleration, impact angle, force and position) on football helmets for more accurate and earlier diagnosis of concussions, TBI and other impact related injuries

Electrical Team Lead, Waterloo Autonomous Sailboat Team
April 2018 - Dec 2019

- Designed and tested new AVR based system for control surfaces and sailing telemetry for increased vessel reliability.
- Recruited and trained active members in PCB design for custom sensor boards and power electronics.
- Led the design of a SPI to CAN interface system between AVR Microcontrollers and Odroid.

Education

B. A. Sc. Mechatronics Engineering , University of Waterloo
Sept 2016 - April 2021

- Cumulative GPA: 3.50
- EE Coursework: Linear & Nonlinear Electronics, Sensors and Instrumentation, Actuators & Power Electronics, Microprocessors & Digital Logic
- Programming Coursework: Microprocessor Systems & Interface, Computer Structures & Real-Time Systems, Algorithms and Data Structures