Daniel Xie

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Key Qualifications

CAD/ECAD Tools: Eagle Autodesk, Saturn PCB Design Toolkit, Onshape, SolidWorks, Cadence Virtuoso
Programming Languages: Python, Java, MATLAB, C, C++, Rust, Bash, ARM Assembly
Software Development Environments/Tools: IntelliJ, Microsoft Visual Studio Code, Microsoft Visual Studio, Google Colaboratory, Jupyter Notebook, Android Studio, MATLAB, Simulink, Arduino IDE
Laboratory Equipment/Tools/Skills: Digital Oscilloscope, Multimeter, Function Generator, Soldering

Education

Candidate for Bachelor of Engineering Science, Computer Engineering (Electronic Devices in Ubiquitous Computing/Hardware) 2019 - 2023
Western University, London, ON

- Western Scholarship of Excellence (2019)
- 2019 WHMIS Certificate

Work Experience

Biophysics of Communication Lab - Research Assistant Oct 2021-Present
Western University, London, ON

- Developed solutions to improve laser OCT (Optical Coherence Tomography) imaging equipment to allow head researchers to capture data of subdermal structures' mechanics when subjected to sound.
- Improvements include better trigger signal apparatus, modifications to client software to allow for finer control of sampling frequency and sound generation, etc.

Extracurricular Experience

Western Formula Racing - Traction/GLV Team Member September 2019-Present
Western University, London, ON

- Gained knowledge and hands-on experience in wiring the wire harness, designing PCBs (Printed Circuit Boards) and using CAD tools such as SolidWorks and Eagle Autodesk.
- In the fall of 2020, successfully collaborated with a teammate to create a BOM and design for a DC-DC converter PCB to convert $\sim$ 500V input from the Accumulator (Battery) to 12V for the GLV system and met Formula SAE safety guidelines. The new design allowed for a powerful Accumulator to be used (Increased from $\sim$400V).
- In the winter of 2021, updated the Power Distribution Module PCB design with an improved undervoltage protection circuit to prevent the over-discharging of the car battery cells. Significantly increased safety while the car is running.
- In the fall of 2021, developed a wireless telemetry system using LoRaWAN (Long Range WAN) transceivers to export real-time data from a MoTeC ECU (Engine Control Unit).

Western AI - Summer/Gideon Projects Member September 2019-May 2021
Western University, London, ON

- Was a member of the business applications team in the fall/winter of 2019 to create a Long Short-Term Memory neural network model to predict stock prices.
- Was member of a medical-imaging team during the summer 2020 trained a VGG16 model to diagnose different Alzheimer's disease stages using MRI images.
- During the fall and winter of 2020, was a member medical imaging team developed another VGG16 model using an X-ray scan dataset of 14 different diseases.
- Helped solve a variety of debugging issues and gained hands-on experience and knowledge developing linear regression models and neural networks.
- Was able to refine skills to find an optimized set of weights and preprocessing to consistently achieve 95% accuracy with the VGG16 models.

Other Interests

Wireless Microcontrollers, Formula 1 Racing, Cooking and BBQ, Basketball, PC Gaming