Daniel Xie

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Skills

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

Education

Bachelor of Engineering Science, Computer Engineering 2019 - 2023
Western University, London, ON

Work Experience

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

- Improved research efficiency and workflow by developing custom Windows sound editor and generation application with a colleague.
- Allowed the researchers more precision in measurements by developing an external trigger signal apparatus for the OCT (Optical Coherence Tomography) imaging equipment by using an oscilloscope and function generator.

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 ∼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 ∼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