Daniel Xie

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Education

University of Western Ontario, London, ON **(2019-present)**
Bachelor of Engineering Science, Computer Engineering (Electronic Devices in Ubiquitous Computing/Hardware).

Experience/Extracurricular Activities

Mhatre Lab Research Assistant **(2021-present)**

- Hired Fall 2021 to assist in improve laser OCT (Optical Coherence Tomography) imaging equipment to allow head researchers to capture data on the mechanical behaviour of subdermal structures when subjected to sound.
- Improvements include better trigger signal apparatus, improvements to client software to allow for finer control of sampling frequency, etc.

Western Formula Racing Team Member **(2019-present)**

- Was a team recruit involved in manufacturing an electric formula car in the 2019-2020 season and a member electrical Traction/GLV (Grounded Low Voltage) team from 2020-2022.
- Gained knowledge and hands-on experience in wiring the accumulator system, designing PCBs (Printed Circuit Boards) and using CAD tools such as SolidWorks and Eagle Autodesk.
- Successfully collaborated with a teammate to design a DC-DC converter PCB to convert ~500V to 12V for the GLV system and met Formula SAE safety guidelines.
- Updated the Power Distribution Module PCB design with an improved undervoltage protection circuit to prevent the over-discharging of the car battery cells.
- Developed a wireless telemetry system using LoRaWAN transceivers and CANBUS to export real-time data from the VCU (Vehicle Control Unit).

Western AI member **(2019-present)**

- Was a member of the business applications team that helped create a Long Short-Term Memory neural network model in Python to predict stock prices. During the summer of 2020, was a member of a medical-imaging team that created a VGG16 model for diagnosing different stages of Alzheimer's disease based on an MRI image. Currently a member of another medical imaging team currently exploring 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 greater than 95% accuracy with the VGG16 model.

Skill Set

CAD/ECAD Tools	Onshape, SolidWorks, Eagle Autodesk
Programming languages	Python, Java, MATLAB, C, C++, Rust
Development Environments/Tools	IntelliJ, Microsoft Visual Studio Code, Microsoft Visual Studio, Pycharm, Google Colaboratory, Jupyter Notebook, Android Studio, MATLAB, Arduino IDE

Interests

Wireless Microcontrollers, Video Games, Cooking, Basketball