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)**

- 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, 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 wire harness, 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 (Long Range WAN) transceivers to export real-time data from a MoTeC ECU (Engine Control Unit).

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

- 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.

Participant Massey Hacks V Hackathon **(2018)**

- After my team's initial plan turned out to be unviable due to unforeseen circumstances, I came up with new project ideas to implement within a limited remaining time. We successfully implemented our solution in C++ and placed in the top five in a field of 40+ teams.

Skill Set

CAD/ECAD Tools	Onshape, SolidWorks, Eagle Autodesk, Saturn PCB Design Toolkit
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, Formula 1 Racing