

Sachin Fernando

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Tools

Programming

► Languages: C++, Python, Matlab

► Libraries/Frameworks: ROS2, TensorFlow, PyTorch, CI/CD

Controls & Vehicle Interfacing

► Simulink, dSPACE ControlDesk, Vector CANalyzer

Planning/Management

► Jira, Confluence, TeamGantt

Education

Candidate for MSc, Mechatronics Engineering, 2023

Thesis: An Analysis of Sensor Fusion Algorithms for Real Time ADAS Performance

Relevant coursework: ML Algorithms, Algorithm Design and Analysis

BASc, Systems Design Engineering, 2021

Relevant coursework:

Autonomous Vehicles, Control Systems, Machine Intelligence

Interests/ Experience Summary

- *Connected/automated vehicle algorithm development (Perception, ADAS Controls, Vehicle-To-Infrastructure)*
- *Sensor testing and calibration*
- *Vehicle/robot simulation for autonomy*
- *Technical project management*

Project Experience

University of Waterloo EcoCAR Team 2021-Present

Connected and Automated Sub-team Manager

- Improved sensor fusion algorithm accuracy by 25% under real-time operating conditions
- Led ADAS development from software based simulation (CARLA, Driving Scenario Designer) to hardware and vehicle-in-the-loop environments
- Assisted in setting up framework of automated testing of ROS nodes for improved CI/CD framework

Project Manager

- Led team of 40+ students across 5 distinct sub-teams (Automated, Controls, HMI/UX, Mechanical/Electrical, Communications) in year long competition cycle
- Implemented and improved team's work tracking and burn-down through Agile methodologies

Work Experience

Battery Systems Co-op, Stacktronic 2020

- Reduced x/y form factor of battery pack frame by **15%**
- Developed ground up pack model and charging simulation to determine energy efficiency under various conditions using Matlab's **Simscape Electrical** toolbox.

Controls Co-op, Dematic Ltd. 2018, 2019

- Supported lead engineer in controls design, procurement and machine commissioning. Drafted electrical schematics for **100+** conveyor unit systems.
- PLC programmed, tested and emulated merge and sortation systems using **RSLogix** with **Emulate 3D**.