

Sachin Fernando

Systems Integration Engineering ❖ shfernan@uwaterloo.ca ❖ [LinkedIn](#)

TECHNICAL COMPETENCIES

Software

programming (C++, Python, MATLAB), ROS, software testing (GoogleTest, pytest), OS (Windows, Linux), CI/CD, Docker, simulation (CARLA, Simulink)

Hardware

vehicle testing and CAN interfacing (dSPACE ControlDesk, Vector CANalyzer), sensor calibration (radar, lidar, camera), HV and LV electrical testing/debugging

WORK EXPERIENCE

General Motors

Sept. 2023 – Present

Software Integration Engineer

Markham, ON

- Created and maintained virtual vehicle packages to test **controls**, **sensors**, and **actuators** for upcoming EV model lineup using in-house **simulation** and software build processes.
- Owned semi-active damping component releases across virtualization team. Leveraged **version control** workflow to **modularize** component and significantly reduce update time and effort.

Stacktronic

May 2020 – Aug. 2020

Battery Systems Engineering Intern

Kitchener, ON

- Developed model and charging simulations for custom battery pack using **MATLAB** and **Simscape**.
- Reduced pack frame's form factor by 15% by re-designing mounting geometry using **Onshape CAD** platform.

Dematic Ltd.

May – Aug. 2018, Jan. – Apr. 2019

Controls and Simulation Engineering Intern

Mississauga, ON

- Supported senior engineer in **simulation** and commissioning of 100+ PLC-based conveyor unit systems.

RESEARCH GROUP

University of Waterloo EcoCAR Team ([AVTC](#))

Jan. 2021 – Aug. 2023

Connected and Automated Vehicle Software Development

Waterloo, ON

- Converted stock SUVs from manual control to level 2/3 autonomy by leading perception, controls and V2X algorithm development using **ROS** based architecture in **Python** and **C++**.

Hardware Testing and Integration

- Ensured vehicle performance met engineering standards through hardware-in-the-loop (**HIL**) and vehicle-in-the-loop (**VIL**) tests on local track. Gained proficiency with **CAN** interfacing with Vector CANalyzer.
- Calibrated radar and camera sensors for dynamic driving using **CAPL** scripts.
- Resolved all major software and hardware issues relating to in-vehicle Electronic Control Units (**ECUs**) using **dSPACE ControlDesk** and HV/LV electronic test equipment.

EDUCATION

University of Waterloo

Candidate for MASc, Mechatronics Engineering

Aug. 2023

- Thesis:** "A Structured Testing Framework for ADAS Software Development"
 - Publication:** [A Structured Testing Framework for ADAS Software Development](#), IAVVC, 2023

BASc, Systems Design Engineering

June 2021

- Presidents Scholarship of Distinction (95%+ admission average)