

Sachin Fernando

Software Development and Test Engineering ❖ shfernan@uwaterloo.ca ❖ [LinkedIn](#)

TECHNICAL COMPETENCIES

programming (C++, Python, MATLAB), ROS/ROS2, software testing (GoogleTest, pytest), OS (Windows, Linux), CI/CD, Docker, simulation (CARLA, Driving Scenario Designer), libraries (scikit-learn, PyTorch, OpenCV)

INTERNSHIPS

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

Simulation Engineering Intern

Kitchener, ON

- Developed model and charging simulations for custom battery pack to determine energy efficiency under various pack configurations using **MATLAB** and **Simscape**.
- Reduced simulation setup process by automating generation of battery characteristics using **MATLAB** scripts.

Dematic Ltd.

May – Aug. 2018, Jan. – Apr. 2019

Controls 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 Lead

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++**.
- Improved codebase quality through development of scalable testing framework. Automated tests cover unit, integration and closed loop system level testing using **CARLA**, **GoogleTest**, **pytest** and **Gitlab CI**.
- Achieved near 25% increase in tracking accuracy from previous year through algorithmic and calibration improvements. Sensor fusion involved **radar**, **camera**, and **lidar**.
- Led 15+ member subteam to meet all baseline development goals using **Agile** approach.

EDUCATION

University of Waterloo

Candidate for MASc, Mechatronics Engineering

Aug. 2023

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

BASc, Systems Design Engineering

June 2021

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

Relevant Coursework

- Software Design and Architectures
- Computational Intelligence
- Autonomous Mobile Robots
- Multi-sensor Data Fusion