Sachin Fernando

Systems Integration Engineering ❖ sachinfern26@gmail.com ❖ [LinkedIn](#)

TECHNICAL COMPETENCIES

Software	**Hardware**
programming (C++, Python, MATLAB), ROS, software testing (GoogleTest, pytest), OS (Windows, Linux), CI/CD, Docker, simulation (CARLA, Simulink)	vehicle testing and CAN interfacing (dSPACE ControlDesk, Vector CANalyzer), sensor calibration (radar, lidar, camera), HV and LV electrical testing/debugging

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WORK EXPERIENCE

General Motors   **Sept. 2023 – Present**
AV Software Integration Engineer   *Markham, ON*

- Created and maintained high fidelity simulation packages for **autonomous** vehicle programs. Virtualization extended to **supervisory controllers**, **sensors**, and **actuators** using combination of in-house **simulation** tools, **C++**, and **MATLAB/Simulink.**
- Expanded automated test set to reduce validation time and effort whilst minimizing defects.

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
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)