**Sachin Fernando**

Systems Integration Engineering  sachinfern26@gmail.com  [LinkedIn](https://www.linkedin.com/in/sachinfernando/)

**TECHNICAL COMPETENCIES**

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| --- | --- |
| **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 |

**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](https://avtcseries.org/about-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](https://ieeexplore.ieee.org/document/10328120?fbclid=IwAR3ajjvn_uijjc9JKT9X4KXhI5cjTd1tEKv1watjnDVj3M8wBldaneBp6xo), IAVVC, 2023

*BASc, Systems Design Engineering* **June 2021**

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