SUCHIR LADDA
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US & CANADA CITIZEN

EDUCATION

Bachelor of Electrical Engineering - McMaster University, Hamilton **Sep 2023 – Present**

- Relevant courses: Electronic Devices and Circuits (2EI4), Electromagnetics II (3FK4), Signals & Systems (3TP3).

SKILLS

Programming & Embedded Systems: C, C++, Embedded C, Python, Rust, MATLAB, Linux, STM32CubeIDE
Hardware & Electrical: PCB Design (KiCad, Altium), Electrical Schematic Design, Circuit Analysis, Microcontrollers, I²C, UART
Testing & Validation: Hardware Testing, Oscilloscopes, Multimeters, Soldering, Debugging
Engineering Software & Tools: Cadence PSpice, Simulink, AutoCAD, Autodesk Inventor, GitHub, SAP, MS Office

RELEVANT EXPERIENCE

Toronto Hydro – Senior Technical Student - *Capacity Planning & Grid Innovation* **Sep 2026 – Present**

- Assess N–1 contingency risk at transformer stations by interpreting single-line diagrams and reviewing bus loading and Hydro One data. Prepare monthly reports identifying stations at risk during planned and unplanned equipment outages.
- Support capital project planning by developing technical scopes and SAP work packages for municipal station projects, including battery replacements and station decommissioning.
- Conduct station site visits to review equipment layouts and field conditions to build context for project scoping.

McMaster Rocketry Club – Controls Team Member **Sep 2024 – Present**

- Designed an EasyMini altimeter adapter PCB to fit the rocket's avionics bay and helped verify clocking, voltage regulation, and communication signals during board bring-up.
- Integrated a 2.4 GHz chip antenna and assessed impedance matching with NanoVNA return-loss measurements.
- Designed schematics for a multi-cell battery protection PCB using Hall-effect current sensing and MOSFET cutoff. Tested continuity and fault paths under high-vibration conditions.

PROJECTS

Autonomous Electrified Vehicle (Jetson Nano + ROS) **February 2026 – April 2026**

- Developed embedded software in C/C++ and Python on an ARM-based NVIDIA Jetson Nano running Linux for real-time applications.
- Processed and fused LiDAR, camera, IMU, and odometry data for real-time system state estimation.
- Implemented feedback-linearizing and PD controllers for autonomous vehicle control.
- Used Linux command-line tools and ROS logging to debug sensor integration, communication interfaces, and system latency.
- Implemented LiDAR-based wall following and occupancy grid mapping in ROS, and projected RealSense depth detections onto the LiDAR scan plane for obstacle avoidance.

Stemma32 – Custom STM32 Development Board **May 2025**

- Designed and laid out a compact STM32F103C8T6 development board with UART, I²C, USB, SWD, onboard 3.3 V regulation, and an 8 MHz crystal oscillator.
- Brought up the board and validated firmware and peripheral interfaces using STM32CubeIDE and lab instruments.
- Performed schematic review and validation of power regulation, clocking, and communication interfaces.