

Rami Idriss

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EDUCATION

Queen's University

BASc Electrical Engineering

Kingston, ON

Sept 2024 – Apr 2028

Eastwood International School

International Baccalaureate Diploma | HL: Math, Physics, Business

Beirut, Lebanon

Graduated 2024

EXPERIENCE

Electrical Subteam Member

Sept 2025 – Apr 2026

Queen's Knights Robotics Team (QKRT)

Kingston, ON

- Drafted pseudocode for a supercapacitor charge/discharge control loop, mapping HAL ADC reads and GPIO signaling on the STM32L432KC Nucleo board based on starter code from the team lead
- Designed a connector breakout PCB module in KiCad and built schematic diagrams, validating connector pinouts against component datasheets
- Authored the project README for the firmware repository, including a Git/GitHub onboarding guide for new team members

Electrical Subteam Member — Tractive System

Sept 2025 – Apr 2026

Queen's Formula SAE

Kingston, ON

- Reviewed tractive system wiring diagrams and the charging shutdown circuit (BMS fault, IMD fault, CAN charger enable, isolation relays/AIRs); built familiarity with FSAE EV safety requirements through schematic review and rules cross-reference
- Analyzed the accumulator charging system (Elcon HK-J-H650-12) for FSAE EV rule compliance; proposed a J1772 adapter using a Control Pilot resistor network that would reduce charge time by 40% compared to the 120V backup

PROJECTS

Smart Walking Stick

Sept 2025 – Dec 2025

- Co-designed an assistive cane with three ultrasonic sensors, NEO-6M GPS, SD card logger, and buzzer feedback for visually impaired users within a \$75 CAD budget
- Designed the mechanical mounting system of a 3D printed PLA enclosure attached to a 50 mm aluminum clamp, sized to preserve grip balance and allow SD card access for maintenance

Firefighter Exoskeleton Battery Level Indicator

- Designed and tested a custom PCB for battery level monitoring
- Integrated a 24V power system with voltage regulation and OLED display output

Aynkan — Open-Source Perception System for Assistive Navigation

In Progress

- Building a real-time object detection and distance estimation system using a single camera, with OpenCV and Ultralytics YOLO. Designed as a wearable navigation aid for blind and low-vision users, it estimates how far each detected object is and how confident it is in that estimate
- Storing calibration and detection data in HDF5 via h5py; developing toward submission to the RESNA Student Design Challenge 2027

SKILLS

Programming: C, C++, Python, Assembly (Nios II, x86), MATLAB, VHDL, SQL

Tools and Platforms: KiCad, Altium Designer, SolidWorks, LTspice, STM32CubeIDE, Arduino, FPGA (Quartus, ModelSim, CPUlator), OpenCV, Ultralytics YOLO, pandas, NumPy, scikit-learn, matplotlib, HDF5/h5py, Git/GitHub, VS Code, Jupyter, Excel

Languages: Fluent in Arabic and English; basic French