

MATTHEW ROSS

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Education

McGill University

Bachelor of Engineering in Electrical Engineering

Expected Graduation—May 2028

Montreal, QC

Design Teams

Electrical Integration Lead

July 2025—Present

McGill Formula SAE Electric

Montreal, QC

- Leading integration of LV electronics within mechanical subsystems, including cockpit controls, inverters, and chassis and coordinating grounding across composite and metal structures.
- Overseeing design, layout, and manufacturing of electrical enclosures, coordinating with subsystem leads, ensuring compliance, manufacturability, and alignment with PCBs, connectors, and battery packaging constraints.
- Spearheading integration of rules-based safety systems including TSMS, GLVMS, TSMP, MSD, TSIL, and RTM on the monocoque and accumulator systems.
- Redesigning peripheral testing and charging equipment: integrated Raspberry Pi screen and redesigned dead man brake on accumulator cart; full revamp of HV dynamometer testing space, featuring a MoTeC screen and data logging system.

Electronics Sub-Lead

September 2024—July 2025

- Developed and integrated 0–600V DC/AC power systems using Siemens NX, Altium Designer, and RapidHarness, improving serviceability and reducing harness weight **24%** via optimized routing and connector standardization.
- Designed and implemented schematics, wiring diagrams, and construction of a new charger/accumulator cart using NX and RapidHarness, ensuring compliance with FSAE Electric regulations.
- Executed three waves of harness reliability and continuity testing across seven harnesses (500-600 wires), achieving a **0.2%** manufacturing error rate while following IPC/WHMA standards for cable and wire harnesses.
- Participated in Siemens NX and Altium Designer workshops to accelerate development, strengthen cross-subsystem understanding, and support tight deadlines across PCBs, chassis, cooling, and harness.

Experience

Traffic Surveyor

April 2025—August 2025

City of Moncton—Engineering Department

Moncton, NB

- Programmed JAMAR Blackcat and MioVision ScoutPlus for vehicle data collection via radar and computer vision, demonstrating embedded systems, sensor networks, and IoT data acquisition experience.
- Conducted cost-benefit analysis of biking infrastructure upgrades, balancing safety, performance, and cost through researching to recommend feasible solutions, reducing implementation costs by **15%**.
- Analyzed real-time and historical traffic data in Excel, identifying congestion patterns and peak intervals to recommend signal timing updates and traffic flow adjustments based on current and projected traffic movements.
- Automated PetraPro files to Excel workbooks conversion, with a custom TypeScript script, cutting time by **over 75%**.

Warehouse Associate

June 2022—August 2024

Ancamna Sales Ltd.

Moncton, NB

- Communicated effectively across numerous departments to ensure teams worked cohesively to meet deadlines and ensure maximum productivity was achieved.
- Maintained accurate inventory by regularly auditing stock and processing high-volume incoming and outgoing shipments, reducing risks of stockouts, overstocking, and storage inefficiencies.
- Improved warehouse efficiency **over 10%** by rearranging storage layouts, reducing time to pick and pack orders.

Event Staff

June 2024—August 2024

Lloyd's of Moncton Ltd.

Moncton, NB

- Diagnosed and resolved technical issues with audio-visual equipment on and off-site through systematic troubleshooting to minimize downtime, ensuring optimal performance.
- Arranged and deployed electrical systems (power distribution, lighting, AV equipment) per event specifications, gaining hands-on experience with safe installation practices and logistical coordination.
- Provided face-to-face customer service, addressing clients' questions clearly and concisely to ensure a positive experience and resolve any concerns.

Technical Skills

Software: Python, Java, C, Linux, Scripting, Bash, VHDL, Modular Software Design, Debugging, Data Analysis

Design Tools: Siemens NX, Rapid Harness, Altium Designer, Excel, Soldering, Harnessing, 3D Printing, French

Volunteer Work

Greater Moncton Football Association — Coach

March 2023—June 2024

Coached youth players, managed practice logistics, tracked player attendance and performance, and helped resolve on-field conflicts to promote teamwork and growth.

Greater Moncton Dragon Boat Festival — Team Leader

September 2023—June 2024

Headed a team that raised over 10,000 dollars for charities like the Lions Sick Children's Fund. The team hosted fundraising events, such as bagel sales and bottle drives, while simultaneously collaborating with local businesses for corporate sponsors.