

RACKAN ABUGHAZAL

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EDUCATION

McMaster University

Hamilton, ON

Bachelor of Engineering in Mechatronics Engineering

Sep 2021 – Apr 2026 (Expected)

– Predictive & Real Time Control Systems, Robotics & Machine Learning, Embedded Systems

SKILLS

Programming & Software: Python, C#/C/C++, MATLAB, Simulink

Hardware & Systems: Micro-controllers, PLC programming & troubleshooting, Validation testing

Engineering Tools: SolidWorks, Autodesk Inventor, SKM Power Tools, Microsoft Office

Professional: Technical reports, Design proposals, Client communication

EXPERIENCE

Veoneer Canada Safety Systems

Toronto, ON

Mechatronics Engineering Intern

May 2024 – Aug 2025

- Led the design and delivery of advanced safety sensor fixtures for **Tesla's CyberCab** program. Precision-engineered fixtures were critical in conducting final validation, directly influencing next-generation vehicle safety systems.
- Pioneered the development of a **C#** scheduling platform that revolutionized production planning, eliminated human error, and became the benchmark tool adopted across multiple manufacturing lines
- Automated parsing and exporting of pressfit robot data, cutting report generation from **30+ minutes to under 1 minute** — a **30x efficiency** gain that set a new benchmark for operational excellence.
- Drove production stability through comprehensive strain, CPK, and Gage R&R analyses while reprogramming PLC logic. Significantly boosted run-rate consistency and **reduced downtime by 42%**, enabling smoother product launches and higher yields.

Eastenghouse Inc.

Toronto, ON

Power Systems Engineer Intern

May 2023 – Aug 2023

- Worked on power distribution for multiple hospitals, including the new **SickKids Hospital** wing in downtown Toronto. Designed and serviced systems where uninterrupted operation of **life-support equipment** was mandatory, even during full utility outages
- Executed pre-servicing, programming, and maintenance of switchgear, transformers, generators, relays, HMIs, and PLCs, ensuring safe and reliable operation of critical infrastructure.
- Developed and validated power distribution architectures for **10+ projects**, delivering solutions that met rigorous industry standards and ensured long-term reliability under demanding conditions.
- Performed advanced Short Circuit, Coordination, Arc Flash, and Harmonic Studies using SKM software to optimize safety and resiliency of healthcare and transit systems.
- Contributed to the **Eglinton LRT** Line by overseeing a **parallel power distribution network interconnecting 25 stations**, enhancing grid reliability for one of Toronto's largest transit expansions.

Power in Community Project

Hamilton, ON

Software Engineer Team Lead

Jan 2022 – Apr 2022

- Developed and prototyped an ergonomic mouse to assist a client with Ehlers-Danlos Syndrome.
- Applied 3D printing and laser cutting to produce ergonomic joystick attachments and fiberglass acrylic bases.
- Programmed Arduino Micro in C++ with LDR sensors to control mouse/keyboard input.
- Led a team, coordinated testing, and documented the design process in a detailed technical report.