

Thomas Haene

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EDUCATION

McGill University

Bachelor's of Engineering, Electrical Engineering

Montreal, QC, Canada

Cumulative GPA: 3.55

WORK EXPERIENCE

Professor David V. Plant's Photonics Research Group

Undergraduate Research Intern

McGill University

May 2024 - Present

- **Automated** high-speed optical communication testing by developing a MATLAB script (using VISA/SCPI commands) to synchronize a Signal Generator and Digital Communications Analyzer (DCA) via a fiber-optic link. Enabled dynamic adjustment of data rates and real-time eye diagram analysis, reducing manual errors and ensuring consistent, repeatable measurements.
- **Developed** a real-time polarization control system by designing a MATLAB Simulink numerical algorithm implemented on a lab microcontroller. The algorithm dynamically optimized output signals using the central difference method, reducing polarization-dependent drift and improving measurement accuracy.
- **Automated** 3D optical power mapping by developing a Python program to control a ThorLabs NanoMax positioning stage (with mounted photodetector), enabling precise spatial measurements through programmed movement relative to a fixed optical source.

Populus Solidarity Cooperative

Front-end Web Developer Intern

Montreal QC, Canada

May 2024 - August 2024

- Developed **key frontend components** for a SaaS digital dashboard used by nonprofits and cooperatives to streamline compliance tracking and fundraising management.
- Engineered a **responsive** and **accessible** UI using React, Remix.run, TailwindCSS, and Payload CMS, with Adobe Aria for enhanced accessibility compliance.
- Collaborated in an Agile development environment, gaining hands-on experience with **Git**, real-world deployment, and CI/CD workflows- experience that gives me an advantage in software-heavy electrical engineering projects.

LEADERSHIP & INVOLVEMENT

The Factory

Head Manager

McGill University

May 2024 - May 2025

- The Factory is a **student-run makerspace**, I was in charge of managing 25 staff and supporting 500+ McGill engineering students with professional equipment (3D printers, soldering stations, electronics).
- **Promoted from General Manager to Head Manager** within 1 year for driving operational excellence and strong evidence of leadership.
- Boosted engagement by **organizing** the lab's most successful hardware hackathon—a robot soccer tournament that broke participation records and earned the highest attendee ratings in the club's history.
- **Modernized lab operations** by designing and deploying a real-time CMS-powered **website** (with dynamic updates for manager schedules, manager skills, and lab status), increasing accessibility and transparency.
- Conducted technical workshops on **Arduino** programming and **Internet fundamentals** for McGill students, demonstrating both subject mastery and **public speaking skills**.

SKILLS & INTERESTS

- **Hardware Skills:** Soldering, 3D Printing, TinkerCAD, PCB Design
- **Software Skills:** PyTorch, React (Web Dev), Python, Git, MATLAB, VISA Protocol (Instrument Automation)
- **Languages:** English (Native), French (Intermediate)
- **Hobbies:** Basketball, Guitar, Drawing, Ping Pong