

Matthew Zhou

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Education

McGill University, Montreal, Quebec

Aug 2025 – Expected 2030

Bachelor of Engineering: Software Engineering Co-op

- **Coursework:** Programming Fund., Software Dev., Data Struct., Linear Algebra, Calc II & III, ODEs

Skills

Languages: English (Native), French

Programming Languages: C++, Python, SCSS/CSS, Javascript, HTML

Frameworks, APIs, Libraries: OpenAI API, Three, React, Leaflet, Matplotlib

Tools: Github, Unity Engine

Projects

Synopsis

Oct 2025 - Present

- An AI mind-mapping application that connects ideas and builds semantic graphs using React.js .
- Implemented a cosine similarity index and integrated it into a real-time React/D3.js visualization system.

Quantitative Analysis Project

June 2025 - July 2025

- Analyzed **5+ years** of minute BTC data using SMA and MACD indicators amassing **40%** portfolio growth.
- Trained linear regression model with features (highs, lows, volume profiles) and plotted with Matplotlib.

TrafficHelper

Sept 2023 - July 2024

- Built a web-based navigation app optimizing routes by time, distance, and safety using **7 years** of data.
- Integrated OpenOttawa API for live traffic data and mapped incidents using Three.js and Leaflet.js.
- Designed an AI feedback system enabling users and city officials to improve road safety with OpenAI API.
- Featured in **2** major local news outlets for innovation in enhancing urban mobility. [Ottawa Citizen](#) [CTV](#) for innovation in improving urban commute experiences.

Tempora

Oct 2021 - Jan 2022

- Developed frontend with 3 peers to build a productivity google extension with multiple features.
- Reached **40+ users** and promoted STEM education through presentations at **2 middle schools**.

Experience

Software, Controls, Driverless Member

Montreal, Quebec

MFE - McGill Formula Electric Team

Sept 2025 – Present

- Learning **ROS2**, control algorithms, and sensor integration for autonomous systems.
- Worked on DAQ subteam to improve efficiency of sensor wiring, reduce noise, and improve harness routing.

Youth Tutoring Project Design Lead

Remote

YTP - Ottawa Chapter

Oct 2024 – May 2025

- Built Python automation scripts to organize, and structure Ottawa Chapter's Sheets, reducing manual work.
- Developed outreach posts and videos to social medias, using Blender graphics designing tool for models.

Software Lead / Mechanical Member

Ottawa, Ontario

Vex Team 50226A - Merivale Vex Robotics

Oct 2023 – Feb 2025

- Developed autonomous and teleoperated functionality despite hardware limitations using C++ and OOP.
- Gained hands-on experience with **pneumatics** and its mechanical properties with C++ implementation.

Software Team Lead

Ottawa, Ontario

FIRST Robotics Team 8729 Sparkling Youth Robotics Club

June 2023 – July 2025

- Instructed **19** software members in programming + testing of command-based robots using OOP with **Java**.
- Integrated computer **vision pipelines** and **PID tuning** with hardware systems to optimize response speed.
- Used multiple software to **test** robot functions and logical tweaks to **PID** systems and speed values.