

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

Synapsis *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.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](#) and [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 - Merrivale 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.