Daniel Wei

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Education

McGill University — Montreal, CA
Bachelor of Engineering in Software Engineering (Co-op) - ***Schulich Leaders Scholarship*** — *Exp. May 2029*

Marianopolis College — Montreal, CA
Honors Pure and Applied Science ***(R Score: 37.62)(GPA 3.9)*** — *2023 – 2025*

- Relevant Coursework: Probability and Statistics, Multi variable Calculus (Enriched), Linear Algebra (Enriched)

Experience

Software Developer Intern — February 2025 – Present
Center for Research in Computational Thermochemistry — *Montreal, CA*

- Engineered **Python-based** life cycle analysis algorithms deployed via **IPC servers** to process over **20,000+ chemical pathways** from the EcoInvent database to accelerate emissions quantification across the metallurgical industry
- Integrated CO_2 indicators into **RESTful API backend architecture**, reducing manual analysis time by **70%**
- Developed and maintained front-end services using the **Qt Framework (C++)** to enhance system responsiveness and enable scalable deployment for climate-related computational modeling for **700+ researchers** in Academia

Full Stack Developer — Aug. 2023 – Present
Canadian Robotics Competition | *Website* — *Montreal, CA*

- Designed and deployed a **React Native** front-end with a **Node.js + MongoDB backend**, supporting over **5,000+** concurrent users during peak hours of the annual Canadian Robotics Competition
- Optimized **backend data handling pipelines** to process **10,000+ match events** per day (scoring leader board, match schedules, game statistics), ensuring seamless updates and **reducing latency by 40%** across the system
- Maintained the national registration portal, leading UI/UX enhancements that increased new school sign-ups by **12%.**
- Built and stress-tested **REST APIs** to handle **real-time match scoring** and live robot feed uploads

Robotics Engineer — Aug. 2024 – Feb. 2025
Marianopolis Robotics Team | *Github* — *Montreal, CA*

- Developed pilot controls and odometry tracking wheels in **C++ and Arduino** for $\pm$2cm real-time position accuracy
- Integrated **8 quadrature encoders** with PID controllers for dual-axis arm leveling, reducing oscillation errors by **30%**

Leadership and Involvement

Robotics Team Captain | *Article* — Apr. 2024 – May. 2025

- Secured **$8,000 (130% increase)** in funding by leading a sponsorship campaign to deliver competition-ready systems
- Led a **team of 30+ members** to a **National 1st overall** at the 2024 Canadian Robotics Competition

Projects

ECG Arrhythmia Classifier | *Publication (Exp. Aug. 2025)* | *Poster* — *Python | MATLAB | Tensorflow*

- Developed a hybrid **CNN-BiGRU** architecture, inspired by AlexNet, to classify arrhythmia into 4 clinical classes using both **MATLAB** (transfer learning) and **Python (Tensorflow)**, achieving **96.88%** test accuracy
- Engineered pre-processing, sampling and exploratory visualization pipelines across **45,000+** ECG signal samples

Technical Skills

Languages: Python, C/C++, HTML5, CSS, JavaScript, TypeScript, MATLAB, MongoDB, SQL, Bash
Frameworks: React.js, React Native, Node.js, Tensorflow/Keras, Numpy/Pandas/Matplotlib, Seaborn, RestAPI, Qt, SQL
Developer Tools: Git, VS Code, MATLAB IDE, PyCharm, Arduino, Qt Creator, OpenLCA, Linux

Honors and Achievements

Math Competitions
3rd Nationally (Bronze Award) – 2024 Canada Lynx Mathematical Competition
Distinction with Honors - 2024 Canadian Mathematics Open Challenge

Science Fairs
Bronze Medal – MRSTF Science Fair, Super-Expo Sciences Provincial Great Distinction