

Raymond Fang

647-622-8830 | r53fang@uwaterloo.ca | linkedin.com/in/raymond-fang-214192331 | github.com/raymondfr

EDUCATION

University of Waterloo

Bachelor of Applied Science in Electrical Engineering — GPA: 3.8/4.0

Waterloo, ON

Sep. 2025 – Present

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, TypeScript, SQL, Java, Ruby, HTML/CSS, MATLAB

Tools & Frameworks: React, Next.js, Node.js, Express, FastAPI, REST APIs, Tailwind CSS, PostgreSQL, Microsoft SQL Server, MySQL, SSMS, pandas

Hardware & Embedded: STM32, ESP32, CAN, I2C, SPI, UART, FPGA, Verilog, Altium, KiCad, Arduino, Soldering

Relevant Courses: Fundamentals of Programming (C++), Project Studios (MATLAB), Digital Circuits (FPGA & Verilog)

EXPERIENCE

Electrical & Firmware Engineer

Sep. 2025 – Present

University of Waterloo Formula Electric - Design Team

Waterloo, ON

- Developed C/C++ HIL test utilities for BMU, VCU, and PDU firmware, simulating sensor inputs, ADC readings, fault states, and CAN messages across 3 vehicle control modules.
- Implemented pre-HV startup firmware logic for brake/throttle inputs, sensor monitoring, CAN validation, and fault handling, improving low-voltage readiness before vehicle integration.
- Built CAN log analysis tools to parse vehicle data, visualize signal trends, and export CSVs for firmware debugging, reducing manual log review time by 30%.

Data Engineer

Jan. 2026 – Apr. 2026

EinfoLab Inc. - Coop

Richmond Hill, ON

- Developed SQL Server and MySQL databases for clinical, dental imaging, finance, and administrative systems by writing queries, views, validation scripts, and data fixes, improving reporting accuracy to **98%**.
- Configured Windows Server and workstation environments for healthcare clients, including SQL Server, MySQL, RDP access, ODBC connections, mapped drives, RAID/NAS backups, and user permissions, reducing setup time by **35%**.
- Automated healthcare data cleaning and reconciliation workflows with Python, pandas, Excel/CSV parsing, and scheduled scripts, reducing recurring verification tasks from **2 hours to under 30 minutes**.

Hardware Systems Lead

Oct. 2023 – Jun. 2025

Robotics Team

Markham, ON

- Designed an RC Mars rover with a six-wheel drivetrain, ESP32 motor controller, camera stream, and custom chassis, enabling reliable traversal over uneven terrain.
- Programmed embedded motor-control firmware in C++/Arduino to map joystick input to PWM drive and steering signals, improving steering repeatability by **40%**.
- Integrated ultrasonic sensors, IMU telemetry, and OpenCV-based camera feedback to detect obstacles, stabilize driving, and trigger fail-safe stops during demos.

PROJECTS

Social Posting Dashboard | [GitHub](#) | [Demo](#) | *React, Vite, Node.js, Express, PostgreSQL, Passport.js*

- Built a full-stack social posting app with user registration, login, guest access, profile pages, posts, likes, comments, and responsive desktop/mobile navigation.
- Implemented Express REST API routes and session-based authentication with Passport.js, bcrypt, and PostgreSQL-backed storage for users, posts, likes, comments, and persistent login.

Chrome Translator Extension | [GitHub](#) | [Demo](#) | *JavaScript, Manifest V3, HTML/CSS, DeepL API*

- Developed a translation extension with Manifest V3, JavaScript, HTML/CSS, Chrome Side Panel API, and Chrome localStorage, enabling in-browser translation with saved history and language preferences.
- Integrated DeepL API requests with asynchronous Fetch logic, dynamic target-language loading, input validation, rate-limit handling, and network-error handling.