

Roni Katcharovski

rkatchar@uwaterloo.ca

linkedin.com/in/roni-katcharovski | github.com/Ronik41 | ronikatch.ca

EDUCATION

University of Waterloo

Bachelor of Applied Science in Computer Engineering

Expected Graduation: April 2028

Waterloo, Ontario

EXPERIENCE

Tesla

Software Engineering Intern

May – Aug 2026

Palo Alto, California

- Owned and shipped **5 manufacturing applications in Go and Python with React interfaces**, taking software built on a shared framework from NPI through production deployment
- Integrated automated firmware-programming workflows for embedded processors and Linux modules into production applications, eliminating manual programming steps in manufacturing stations
- Built **Claude Code developer tools** for builds, SSH deployment, paced execution, log monitoring, and firmware flashing, streamlining the team's hardware-software iteration loop
- Designed an internal Claude Code compression plugin that reduced **generated output tokens by 55%** across benchmark workloads

Tesla

Software Engineering Intern

Sep – Dec 2025

Sparks, Nevada

- Developed **Go test infrastructure** for Tesla Energy hardware, supporting power-converter simulation, CAN communication, digital/analog I/O, and concurrent test execution
- Resolved concurrent-access issues in a **Go driver for a three-channel power supply** using mutex synchronization and error propagation for reliable multi-channel operation
- Implemented reusable ECU abstraction modules for UDS routines, CAN I/O, and I2C-over-CAN sensor communication, expanding automated battery-management-system test coverage
- Led weekly cross-functional engineering syncs while owning test-software development from requirements and implementation through manufacturing deployment

WHOOOP

Software Engineering Intern

Jan – May 2025

Boston, Massachusetts

- Designed Raspberry Pi and STM32 manufacturing testers for wearable and charger product lines, saving **\$100K+ in build costs per product line** and earning a Co-op Student of the Year nomination
- Built **Python HIL/SIL infrastructure** for remote hardware simulation, automated interaction logging, and SQLite-backed test analytics to accelerate development and debugging
- Implemented real-time IMU acquisition using DMA and idle-line interrupts, offloading sensor communication from the CPU

Ford Motor Company

Software Engineering Intern

May – Aug 2024

Waterloo, Ontario

- Wrote **500+ C++ unit tests with Google Test** for embedded automotive software across Ford vehicle platforms, achieving **98% code coverage**
- Mocked kernel syscalls and asynchronous hardware drivers with **Google Mock**, achieving **100% function coverage**

TECHNICAL SKILLS

Languages: Go, Python, C, C++, SQL, JavaScript, TypeScript, Bash/Shell, MATLAB

Frameworks & Systems: React, Next.js, gRPC, Linux/Unix, Docker, Concurrent Programming, Multithreading, IPC, Networking

Testing & Infrastructure: HIL/SIL, Test Automation, CI/CD, Google Test, Google Mock, Jenkins, SonarQube, SQLite, Git, SSH

Embedded & Protocols: STM32, Raspberry Pi, CAN, UDS, UART, I2C, SPI, Ethernet, BLE