

Gabriel Nakamoto

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EDUCATION

University of Waterloo

Bachelor of Computer Science, Honours Co-op, BCS HC

Waterloo, ON Canada

Sep 2026 — June 2031

WORK EXPERIENCE

Software Intern

Claero Solutions

Aug 2024 — Oct 2025

Huntsville, ON Canada

- Wrote automated testing scripts for an industrial field ticketing and invoicing web application
- Utilized Microsofts Playwright API and typescript to mimic broad user interactions

Warehouse Associate

Canadian Tire

June 2023 — August 2024

Huntsville, ON Canada

- Scanned and received incoming products from trucks
- Loaded large items into customer vehicles
- Was responsible for whole warehouse past 5pm on weekdays

PROJECTS

Contributor, Tinygrad (tinygrad.org)

Jun 2026 — Present

- Fully implemented an RDNA3 assembly backend, integrated into the tensor graph compiler, that can compile and run inference/train entire models like RESNET and LLaMa at less then a 2x speed ratio to LLVM as well as pass the entire >1000 backend test suite on hardware.
- Utilizes tinygrads declarative graph rewrite framework to perform the entire lowering process in less than 800 LOC.
- Notable components include instruction selection, constrained linear scan register allocation, VGPR/SGPR spilling to scratch memory and binary encoding.
- Utilizes RDNA3 architecture specific acceleration features like WMMA.

EXTRACURRICULAR ACTIVITIES

First Robotics Competition (FRC)

Sep 2024 — June 2026

- Developed an autonomous robot routine that scored 1% out of 3700 teams globally, winning us the Autonomous Award at the 2025 Ontario provincial competition and helping us qualify for the World Championship.
- Spoke at a presentation on our teams experience using 2d physics simulation for agile software development and its promise for lower resource teams to over 100 international attendees from various teams at the 2025 world championship.
- Won the 2026 Durham Innovation in Controls award for extensive use of simulation and telemetry in software development and rapid debugging.
- Independently wrote two top 10% placing robot programs involving the use of custom control systems, kalman filter global pose estimation fusing vision and odometry telemetry, 2d physics simulation, offline replayable logging and motion-planning algorithms.

SKILLS

- **Programming Languages:** C/C++, Java, Python, CUDA
- **Technologies:** Git/Github, Linux, pytorch