

Bradley Boratto

[github/b44ken](https://github.com/b44ken) boratto.ca 226 961 6479 brad@boratto.ca

EDUCATION

Bachelor of Science, Computer Science & Physics, University of Toronto

Expected Apr 2027

EXPERIENCE

Software Engineering Intern, RIIS

May 2025 - Aug 2025

- Built drone remote controller completely from scratch with custom PCB and case as well as software
- Designed efficient C++ firmware (on 2KB RAM, 16MHz CPU) based on asynchronous event loop
- Communicated directly with clients to make design choices and iterate based on feedback

Riipen Intern, Watoga Technologies

Feb 2025 - Mar 2025

- Used Python to process 440MB of poorly formatted rock samples, cleanup, and add to SQL database
- Multithreaded code to solve file parsing library bottleneck (7.6x speedup)
- Built Scipy/Matplotlib models to find mineral rich deposits, using 2D and 3D visualizations to prove accuracy

Robotics Intern, Optimotive

Jan 2023 - May 2023

- Primary engineer of an industrial cleaning robot prototype (programming, fabrication, & electronics)
- Programmed subsystems (ex. depth cameras), interfacing with our robot chassis via its Linux computer
- Reverse engineered undocumented motor controller protocols to support game controller input

EXTRACURRICULAR

Team Member, UofT Autonomous Scale Racing

Nov 2024 - Present

- Firmware development, electronics, etc... in production of an autonomously driving 1/10th scale RC car

Participant/Winner, CS Games

Mar 2024

- Selected by university to participate in 3 days of pair competitive-programming style challenges
- Won "High-Performance Computing", best performance optimizing an ML framework in C++ & WebGPU

PROJECTS

microgpt (live demo)

- Interactive GPT-like small LLM in the browser (TensorFlow.js) that learns to generate names. Users can visualize model architecture, weights, and activations as it runs. 100k+ views on Hacker News.

finetune (github)

- Finetuned Qwen 14B on personal chat data (250+ samples) using Unsloth, runs locally via Ollama
- Built Chrome extension to feed model output as input events to Discord; supports extensible app targets

reactutor (live demo)

- AI tutor. Users upload course materials so Gemini understands the course, which serves targeted long-form practice problems to help them learn, via spaced repetition. I use this to help me study.

wasm67 (github)

- WASM4 virtual console runtime (Rust) for Raspberry Pi Pico. Implements framebuffer, input, system calls

gloom (live demo)

- WinHacks 2025 talk: built a raycasting engine and game from scratch with participants in one hour

onef (github)

- Deep learning framework in plain C++. Supports inference, training (SGD & backprop) for sequential networks. Solves MNIST, XOR, etc.

TECHNICAL SKILLS

Languages: C, C++, C#, Rust, Go, Python, HTML, CSS, JavaScript, Java, Bash

Developer Tools: React, Tailwind, Firebase, Unity, MongoDB, SQL, Git, Docker

Other: Fusion 360, 3D Printing, Linux, Embedded Systems, Arduino, ESP32