

Daniel Dzurevych

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TECHNICAL SKILLS

Languages: C, C++, Python, Bash, SystemVerilog, VHDL, ARM Assembly, C#, SQL

Systems & Concurrency: Linux, POSIX, system calls, sockets, pthreads, shared memory, async/event-driven I/O

Networking: TCP, Ethernet, ICMP, SSH, TFTP, ARP, OSPF, BGP

Hardware & Tools: RISC-V, FPGA, USB serial, UART, RS-232, I2C, microcontrollers, ADCs, Git, CMake, Vivado

EDUCATION

University of Waterloo

2023 – Expected January 2028

B.A.Sc. Computer Engineering — Scholarships: \$15,000

Waterloo, ON

Relevant Coursework: RTOS, Systems & Concurrency, Computer Architecture, Embedded Systems, Digital Hardware

PROFESSIONAL EXPERIENCE

Software Engineer

January 2026 – May 2026

UNTIL LABS

San Francisco, CA

- Built a Python **self-diagnosing hardware validator** for approximately 15 devices that enumerated serial ports, probed expected responses, identified disconnected/misconfigured hardware, and automatically repaired device-to-port mappings
- Designed a **JSON-defined protocol orchestration engine** for cryopreservation experiments, executing configurable timed, triggered, and **parallel procedures** across connected equipment with live sensor polling, failure handling, and comprehensive logging for reproducible runs
- Built a **company-wide monitoring and response system** for 24+ hour experiments using Twilio and Slack; user-defined thresholds could trigger equipment actions and configurable call/text escalation workflows
- **Developed Python/C/C++ drivers** and embedded interfaces for approximately 10 devices over **USB serial, RS-232, Ethernet, and I2C**; designed/soldered ADC/microcontroller interfaces and added retry/fault handling, calibration correction, real-time acquisition, and PID control for lab machines and instruments used in experiments
- Refactored the controls stack around **reusable serial-device base classes**, fixed threading issues, and automated microcontroller firmware deployment across lab computers, eliminating **approximately 10,000 LOC**
- Helped repurpose a Linux workstation as an **on-prem data service**, installing a NIC, racking networking hardware and exposing an internally accessible endpoint

Software Engineer

May 2025 – August 2025

SIEMENS RUGGEDCOM

Toronto, ON

- Developed and tested C/C++ features for a proprietary **networking OS** running on industrial routers/switches worldwide
- Built a standardized embedded **logging/observability framework** reusable across subsystems for errors, diagnostics, and runtime state
- Implemented and **debugged C/C++ modules on embedded Linux**, validating router/switch behavior under stress tests with **zero packet loss** and no performance regressions
- Worked with Linux networking and device workflows including **SSH, TFTP**, Bash, configuration/firmware transfer, diagnostics, and automated hardware validation for production networking equipment

AI Software Developer

September 2024 – December 2024

QUESTRADE ENTERPRISE

Toronto, ON

- Built a Python **LLM evaluation and guardrail platform** with automated testing/CI to detect production failure modes and enforce system constraints for an AI-driven financial product
- Built a BigQuery-backed transcription validation pipeline that improved semantic-labeling accuracy by **15%**, with automated cleaning and validation for production analytics

RELEVANT PROJECTS

- **Real-Time Executive:** Built an RTX in C on an ARM Cortex-A9/DE1-SoC with first-fit memory allocation, priority-based preemptive scheduling, and task lifecycle management
- **Concurrent Network Systems:** Built C/Linux systems using pthreads, libcurl, pipes/shared-memory IPC, synchronization, **sockets/network I/O**, parallel web crawling, and asynchronous/event-driven I/O
- **FPGA MVM Accelerator:** Built a parameterized SystemVerilog matrix-vector multiplication engine with pipelined 8-lane dot-product units, memory buffers, accumulators, and FSM control; verified in Vivado, **350+ MHz**
- **Conductor:** Built a Python/FastAPI orchestration platform that automates end-to-end workflows across Slack, Gmail, Notion, and AI voice agents through external APIs
- **\$10,000 Hackathon Win:** Built a Chrome extension that generates personalized company software tutorials

Interests: Marathon running (3:29), powerlifting, skiing, piano, investing