

Benjamin Farsijani

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EDUCATION

University of Ottawa Ottawa, ON
Honours Bachelor of Science in Computer Science | GPA: 3.7/4.0 Sep. 2023 – May 2027

Relevant Coursework: Operating Systems, Computer Architecture, Data Structures & Algorithms, Computer Networks, Systems Programming, Embedded Systems, Discrete Mathematics, Linear Algebra

TECHNICAL SKILLS

Languages	C, C++, Go, Rust, Python, Bash
Embedded Systems	ESP32, Arduino, UART/I2C/SPI, real-time control loops, sensor integration, WiFi telemetry, hardware bring-up
Systems & OS	Linux (POSIX), VxWorks concepts, multithreading, device drivers, memory management, systemd, kernel interaction
Networking & Security	TCP/IP, TLS/mTLS, iptables, POSIX sockets, epoll, REST/gRPC, network isolation, packet analysis
Tools & Infrastructure	PostgreSQL, SQLite, Docker, Nginx, Prometheus, Git, GDB, logic analyzers

PROJECTS

Secure IoT Network Gateway & Authentication Service | *Go, Linux, TLS/mTLS, iptables, SQLite*

- Engineered mTLS device authentication gateway with signed provisioning workflow and multi-stage certificate validation pipeline on Linux; reduced unauthorized connection attempts by **85%** under adversarial simulation.
- Hardened OS attack surface via iptables network isolation, SSH key-only access, and Fail2ban intrusion blocking; implemented structured audit logging across all auth events enabling full forensic replay of security incidents.

Layer-4 TCP Load Balancer | *Go, Linux, epoll, syscall, Non-blocking I/O*

- Built Layer-4 TCP load balancer in Go using raw Linux epoll syscalls; single shared epoll fd multiplexed across N IO worker goroutines, sustaining **50,000 concurrent connections** under synthetic load.
- Implemented two lock-free scheduling algorithms: atomic **round-robin** (AddUint64 counter mod back-end count) and **least-connections** (per-backend atomic active-connection counter) with zero mutex overhead.

CERTIFICATIONS

ISC2 Certified in Cybersecurity (CC)	Completed	ISC2
Fortinet NSE 1, 2, 3 — Network Security	Completed	Fortinet
Google Cybersecurity Certificate	Completed	Google / Coursera

EXPERIENCE

Technical Mentor, Embedded Systems & Prototyping Sep. 2024 – Present
Centre for Entrepreneurship and Engineering Design (CEED), University of Ottawa Ottawa, ON

- Mentored engineering students through firmware debugging, peripheral integration (I2C, SPI, UART), and hardware bring-up in CEED's Makerspace; supported projects involving microcontrollers, sensors, and rapid prototyping equipment.
- Guided hardware/software co-design decisions across multiple student teams, accelerating prototype iteration cycles and resolving embedded integration issues under tight competition deadlines.