Ayaan Hafeez

(587) 938-1534 | mhafeez1@ualberta.ca | linkedin.com/in/ayaanhafeez | github.com/mayaanhafeez | ayaanhafeez.dev | blog

Education

University of Alberta Edmonton, AB

BSc in Computer Engineering, Co-op, Software Option *Expected May 2028*

- **Coursework:** Data Structures & Algorithms, Computer Organization & Assembly, Software Requirements, Digital Logic, Signals & Systems, Operating Systems (in progress), Database Management (in progress), Software Testing & Maintenance (in progress)

Experience

AI Developer (3 co-op terms, then part-time) Summer 2025, Winter 2026, Summer 2026 (co-op)

Elev8AI – Remote *Sep 2026 – Present (part-time)*

- Built an NL2SQL network-monitoring chatbot with LangChain, Ollama, ChromaDB, and PostgreSQL, using RAG retrieval and session-aware context management; reached 85% answer accuracy on internal benchmarks
- Took part in customer requirements meetings for AI and ERP projects, turning business processes into scoped requirements, workflows, and data models
- Designed ERP modules and ran functional QA across end-to-end business scenarios, validating workflows with customers before delivery
- Built a full-stack social media platform: FastAPI backend with PostgreSQL/Redis, RBAC and JWT auth, Stripe subscriptions, ML identity verification, and a React/TypeScript frontend deployed with Docker and nginx

Open Source

Omarchy – PR #8787 (merged) | *Arch + Hyprland Linux distro, 45K stars* Oct 2026

- Fixed a lopsided keyboard/hover highlight on the network panel's header actions and made the shared square action button pixel-snap its icon at fractional display scales

Vorssaint – PR #624 (merged) | *Swift, Core Graphics; macOS utility, 29K stars* Aug 2026

- Fixed a display-recovery bug that could leave a laptop with no usable screen after unplugging an external monitor: recovery now ignores virtual displays and switches stranded physical displays back on, with regression tests for headless setups

Hyprspace – PR #4, PR #5 (merged) | *Swift; tiling window manager for macOS* Sep 2026

- Added smart single-window gaps, floating-window resize and centering keys, and modifier-drag to move windows with retiling on drop

Projects

Bare-Metal Raspberry Pi 3 Kernel | *C, ARMv8 Assembly, QEMU* May – Jul 2026

- Following Sergey Matyukevich's raspberry-pi-os lesson series, implemented a single-core AArch64 kernel with no libc: boot and BSS setup, EL3/EL2 to EL1 transitions, exception vectors and timer IRQs, a mini UART driver, and a round-robin preemptive scheduler with context switching
- Added EL0 user processes with system calls (write, malloc, clone/fork, exit) and per-process virtual memory: each task gets its own page tables and fork copies the parent's user pages; tested under QEMU

ssht – Persistent SSH Sessions | *Rust, ratatui, tokio, SQLite, tmux, mosh* Jun – Aug 2026

- Built a Rust TUI that reattaches tmux sessions over SSH from any machine, with recursive `~/.ssh/config` parsing, concurrent remote probes, SQLite history, and fuzzy search; published on crates.io and Homebrew

macwifi – Wi-Fi TUI for macOS | *Rust, ratatui, tokio, CoreWLAN* Jun – Sep 2026

- Built a clean-room macOS port of the Linux Wi-Fi TUI impala, with WPA-Enterprise and hidden-network support, using a Unix-socket daemon/client design over CoreWLAN, Keychain, and a LaunchAgent
- Exposed Wi-Fi operations and speed tests through a CLI that streams JSONL events, which drives a custom SketchyBar Wi-Fi popup

Technical Skills

Languages: Python, C, Rust, TypeScript
Tools: Git, Docker, PostgreSQL, FastAPI, React, Linux