Tahir Chaudhry

raforawesome@raforaweso.me | github.com/Raforawesome | linkedin.com/in/tchaudhry-dev | raforaweso.me

Education

Wilfrid Laurier University Waterloo, ON

Bachelor of Science, Computer Science *Sep 2023 — Dec 2027 (Expected)*

- Science Faculty Honour Roll | Relevant Coursework: Algorithm Design, Software Development, AI Algorithms

Selected Projects

Voxel Engine | Rust, wgpu, Slang (x.com/raforawesome/status/2114935770566062370) Jan 2026 — Present

- Renders procedural chunk-based terrain across a 32×12×32-chunk view at ~240 FPS (4.0 ms median frame time) at 3000×1800 on an Apple M2 integrated GPU
- Built a lock-free generation and meshing pipeline (crossbeam work queue, immutable neighbour references) that scales 4.2× on 4 threads, builds the full 12k-chunk view in 78 ms, and keeps p99 frame time under 10 ms while streaming new terrain
- Cut drawn triangles 77% and raised median FPS 16% with per-chunk frustum culling (8.5 ns per test), on top of neighbour-aware face culling that removes 99.5% of faces
- Cut per-chunk terrain generation cost 9.4× (185.6 → 19.7 µs) by sampling a coarse 5^3 noise grid with trilinear interpolation, altering only 0.11% of voxels
- Built an O(1) LRU GPU mesh cache under a 64 MiB VRAM budget (47× faster than a linear-scan LRU) and a headless benchmark suite for frame-time percentiles and thread scaling

Sprout | Rust, Dioxus, GitHub Actions Apr 2024 — Present

- Built a desktop mod manager for Stardew Valley entirely in Rust, with a React-style, component-based Dioxus + Tailwind frontend (hooks, signals, reusable UI components)
- Released to and used by a Discord community of non-technical players
- Automated testing and release builds with a GitHub Actions CI/CD pipeline

Silk | Rust Dec 2025 — Present

- Building a zero-copy HTTP request parser that borrows from the input buffer and performs no heap allocation on the hot path, using memchr for vectorized delimiter search
- Built a custom thread pool for fine-grained control over request scheduling

Infrastructure

Homelab & Self-Hosted Infrastructure Jan 2021 — Present

Personal Project

- Built and operate a Docker-based media and file-sharing platform for 20+ users across Google Cloud, Oracle Cloud, and self-hosted Linux servers
- Automated provisioning and maintenance: scheduled backups, container health monitoring, log rotation, and alerting
- Configured a Caddy reverse proxy, custom DNS routing, and firewall rules to expose public services while isolating internal ones

Awards & Activities

- **1st Place**, Laurier Cybersecurity Club CTF — won with a team of 2 in a 4-person-team competition

Technical Skills

- **Languages**: Rust, C, C++, Python, Java, JavaScript, TypeScript, Bash, Slang
- **Systems & Infrastructure**: Linux (Arch, Fedora, RHEL, Debian, Ubuntu), Docker, Git, GCP, Oracle Cloud, Caddy, GitHub Actions
- **Frameworks & Libraries**: wgpu, crossbeam, Axum, Dioxus (React-like), Tailwind CSS