Ryan Rumana

Emeryville, California | ryan.rumana@gmail.com | Linkedin Link | Github Link | Portfolio

WORK EXPERIENCE

Axial3D   **Belfast, United Kingdom (Remote)**
Software Support Engineer   *Jun 2024 - Present*
- Support and enhance a Vue + Java web app that ingests DICOM scans into our ML 3D-model generation pipeline.
- Contribute towards web app rewrite, adding features, and tightening auth and AWS CloudFormation deployment.

Entegrion   **Durham, North Carolina (Remote)**
Software Engineer   *Jun 2022 - Mar 2024*
- Developed Python/C++ data-processing and visualization tools for viscoelastic coagulation monitor workflows
- Designed and tuned SQL schemas to store and retrieve experiment data efficiently for downstream analysis.

Amergint Technologies   **Colorado Springs, Colorado**
Software Engineer Intern   *May 2022 - Aug 2022*
- Maintained server-side code in C++/Python for custom OS environments, resolving critical bugs.
- Provided hands-on troubleshooting on Linux servers, ensuring swift client support and system reliability.

PROJECTS

Kubernetes Homelab   **Emeryville, California**
Architect & Administrator   *Jul 2024 - Present*
- Run a 2-node Kubernetes cluster with ArgoCD GitOps hosting 20+ apps (media, Nextcloud, Immich, LLMs).
- Built resilient storage with Longhorn + TrueNAS using automated snapshots and nightly NAS/OS backups.
- Designed an OPNsense network with VLANs, WireGuard, HAProxy edge, and centralized monitoring.

Portfolio Website   **Emeryville, California**
Solo Developer   *May 2024 - Present*
- Designed and built a production-style portfolio in Rust (Axum) backend with an Astro-based frontend.
- Containerized and deployed onto k8s cluster behind Cloudflare with HTTPS, staging, and GitHub Actions CI/CD.
- Implemented monitoring with log4rs, health checks, and Uptime-Kuma for reliable, debuggable hosting.

Reverse Game-of-Life   **Emeryville, California**
Solo Developer   *Jan 2025 - May 2025*
- Proved reversing Conway's Game of Life on finite boards is NP-complete, then built a working reverse solver.
- Built Rust crates (sim, reverse sim, C++ bindings), packaged into WebAssembly, and integrated into portfolio.
- Optimized the forward simulator for ~10,000× speedup focusing on performance and correctness.

Stanford EE292D ML on Embedded Systems   **Palo Alto, California**
Final Project   *Apr 2024 - Jul 2024*
- Developed an on-device PyTorch-based person reidentification application for the Raspberry Pi.
- Overcame limited computing power using aggressive quantization and optimized data structures under tight deadlines.
- Invited to present our on-device person reidentification research at Stanford's ACT4AERO workshop.

EDUCATION

Colorado School of Mines   **Golden, Colorado**
MS in Computer Science - Machine Learning   *Graduation Date: May 2023*
BS in Computer Science - Computer Engineering   *Graduation Date: May 2022*

SKILLS

Technologies: C++, Rust, Python, PyTorch, JavaScript, Java, SQL, AWS, Docker, Kubernetes, Git, CI/CD

Expertise: Software Development, Machine Learning, System Design, Platform Optimization, Problem Solving

Interests: Homelab development, Linux customization, Hiking, Competitive swimming, Snowboarding, Triathlons