

Arnav Gawas

arnsg730@proton.me | LinkedIn | Github | zxcvhq.dev

OBJECTIVE

Computer Science student seeking internship opportunities in systems programming and networking for Summer 2026.

EDUCATION

Rochester Institute of Technology

Rochester, NY

Bachelor of Science in Computer Science, Minor in Computer Engineering

Expected May 2028

- Relevant Coursework: Introduction to Computer Science (Python, Java), Mechanics of Programming (C), Digital System Design I (VHDL)

RELEVANT SKILLS

Languages: C/C++, Rust, Go, Python, Java, SQL, x86 Assembly

Tools: CUDA, Git, Docker, Kubernetes (K3S/OKD), GDB, tmux, Makefiles, WireShark, Zsh

PROJECTS

CUDA Matrix Computation Engine | C, CUDA

- Explored GPU parallelism by developing custom CUDA kernels for vector operations, matrix multiplication, Gaussian elimination, and 2D convolution
- Applied shared memory tiling, loop unrolling, and coalesced memory access to achieve multi-fold performance improvements over CPU implementations
- Utilized NVIDIA Nsight Compute to analyze memory access patterns, optimize bandwidth usage, and minimize warp divergence across kernels

Baremetal OS Kernel & Network Stack | C, x86 Assembly, Makefile, RTL8139

- Designed and implemented a custom 64-bit x86 kernel with Limine, GDT/IDT setup, interrupt handling, and virtual memory management using paging
- Wrote a full RTL8139 Ethernet driver supporting packet transmission, reception, and interrupt-driven I/O for bare-metal networking
- Implemented a lightweight TCP/IP stack with ARP, ICMP, and UDP protocols to enable basic host-to-host communication

XO-Chip Emulator | Rust, SDL2

- Optimized instruction decoding and memory management for low-latency execution
- Developed full XO/Chip feature set (4KB+ RAM, 128×64 bitplane display, 20+ opcodes), achieving 100% compatibility with 50+ Chip-8/SuperChip programs
- Engineered modular architecture with clean separation of CPU, display, and input layers, facilitating maintainability

Halide - CLI Music Player | Python, Pygame, Rich

- Implemented a feature-rich terminal music player supporting playback control, song search, and playlist navigation
- Structured a modular system for efficient audio processing, input handling, and file management
- Refined the interface with dynamic feedback, colorful output, and smooth command responsiveness via rich

EXPERIENCE

Student Worker

October 2024 – April 2025

Ctrl Alt Deli

Rochester, NY

- Assisted at the make table, assembling orders efficiently and ensuring customer satisfaction through friendly service
- Collaborated in a 5 person team to manage high-volume rushes of 90+ orders, maintaining minimal delays during peak hours

ACTIVITIES

OSS Contributor and Maintainer, Computer Science House (CSH)

- Contributed to AR Captioning Glasses at ImagineRIT 2025, building real-time speech-to-text on wearable OLEDs
- Maintain LetMeIn2, CSH's access control system, supporting access requests from several on-floor members and alumni each week
- Refactored features for CSH's inventory system including item comments, borrowing and return tracking, location fields, and quantity fields

Susquehanna Freshmen Discovery Day: Selected for a competitive SIG program focused on trading strategy, probabilistic reasoning, and collaborative decision-making

Performing Arts Scholar: Recognized for guitar excellence and leadership, performing with a student band in campus showcases

FCC Technician Class: Authorized to operate amateur radio equipment on VHF/UHF frequencies