Ezri (Tianyu) Zhu

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EDUCATION

Stevens Institute of Technology *Bachelor of Science in Computer Science* Hoboken NJ - Expected May 2026

Coursework: Data Structures, Discrete Structures, Algorithms, Statistics, Computer Architecture, Systems Programming, Programming Languages, Operating Systems, Systems Administration, Theory of Computation, Distributed Systems & Cloud Computing, Automated Techniques for Security, Privacy & Reliability, Wireless Networking, Wireless Systems Security, Linear Algebra

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SKILLS

Programming: Node.JS, Python, **Golang**, **Nix**, POSIX Shell, HTML/CSS, JavaScript, **Rust**, BPF, C++, C, Java, Scheme, CI/CD tools, git, Postgres
SRE: NGINX, Apache, Docker, Debian, RHEL, libvirt/KVM, **Kubernetes**, Grafana, Prometheus, NixOS, Ansible, Puppet
Computer Networking & Security: BGP, Nftables, routerOS, EOS, IRR, RPKI, WireGuard, OpenVPN, MTR, Netcat, Metasploit, nmap, IPS

PROFESSIONAL EXPERIENCE

Stevens Student Managed Investment Fund

Graduate Fund: Portfolio Management Lead (Team of 5) Sep 2025 - Present
Undergrad Fund: Head of Quant Development & Optimization (Team of 5, AUM $1M) Jan 2025 – May 2025
Undergrad Fund: Quantitative Analyst on the Development Team Sep 2024 – Dec 2024

- Designed and implemented a centralized **financial database system** in **Clickhouse** that automatically collects and processes market data from multiple sources (FRED, Terminal, YFinance), including managing the back adjust price processing system, to power risk analytics and financial models.
- Led the development of a robust **microservices** stack featuring **redundant** databases that support our financial modeling systems, fullstack applications, and model creation/monitoring utilities, while implementing a comprehensive **observability** stack to ensure visibility of metrics and logs across all systems.

PaSH Research Group (Stevens, Brown)

Undergraduate Research Assistant Apr 2023 - Present

- Debugged and modified complex **C++** and C codebases to trace shell scripts in order to **parallelize shell scripts**.
- Utilized various **Linux APIs** via POSIX script to develop parts of our tool "try" (5k+ stars), as well as writing documentation and CI.
- Debugged various Linux Kernel features mostly involving **namespaces** and mounts for "try."

Recurse Center

Participant - Summer 1'25 June 2025 - Aug 2025

- Contributed 5+ package improvements to **Nixpkgs**, spanning simple dependency updates to complex tooling restructures
- Prototyped and implemented an embedded project that bitbanged a 125khz HID Prox card signal to emulate a real HID Prox fob using **Embedded Rust**, as well as various **ESP32** sensor and ambient lighting projects.
- Contributed to various other Recursor's projects by **pair programming** with them on a daily basis.

Columbia University, on the PEERING Testbed

Visiting Research Intern May 2024 - May 2025

- Developed a monitoring system using **Prometheus** and **Grafana** to track the health of network muxes.
- Created a software tool in Golang to aggregate routing data from various sources, monitor specific routes, and expose metrics.
- Conducted experiments to identify and improve network performance bottlenecks in the PEERING infrastructure.

Fosshost, Non-profit hosting provider

Volunteer Deputy-CTO Oct 2021 - May 2022
Volunteer TechOps Oct 2020 - May 2021

- Assisted leading TechOps in maintaining a fleet of **linux hypervisors** from 10+ sponsors around the world, ensuring service availability to over 250+ open source projects.
- **Onboarded and mentored new volunteers**, including familiarizing them with the organization and its technologies.
- Designed, deployed, and maintained a **monitoring system at scale** that enhanced the team's observability.

PROJECTS

NixOS Distributed Public Unix Server

- Using **NixOS** with **Morph** to deploy a fleet of public unix servers currently servicing 30+ users.

EVE, Golang, Postgres, mTLS, x506, CI/CD, Makefiles, Structured Logging

- A **hypervisor suite** for mid-scale server hosting deployments, with security and ease of usage in mind.
- Using **mTLS** to ensure secure connection between agent and main controller over any environment.
- **RESTful API** for users to control their resources, and for admins to manage users and create new machines.

EzriCloud AS206628, Dual Stack Educational Network: BGP, RouterOS, Fastnetmon**,** Proxmox, Grafana, Prometheus, vLAN, IXP

- Provided reliable free hosting for **50+ students/open-source projects** over a cluster of servers, and BGP transit for **10+ BGP networks**.
- Developed a status checking website in Golang to **minimize incident response time**.
- Debugged various user networking issues, triaging incidents of various complexity ranging from user error to site wide DDoS attacks.

Personal Blog (ezrizhu.com**),** Rust, Docker, CI/CD, *responsive web design*, *high availability*, SEO

- A personal website utilizing ***Rust's*** concurrency and memory safety features. All requests are served directly from RAM.
- Used Github Actions, Watchtowers, Nginx with load balancing, resulting in a **high availability** setup.
- Maintaining an active **blog** about my journey in Computer Science.

Linux Systems Independent Research,

- Authored a comprehensive short book examining key differences between Linux distributions and their impact on software development, covering distribution building processes, cross-distribution compatibility, and practical reproduction guides for analysis

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REFERENCES - Available upon request