

# Ezri (Tianyu) Zhu

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## EDUCATION

**Stevens Institute of Technology** *Bachelor of Science in Computer Science, Minor in Economics*

Expected May 2026

**Honors:** Global Scholarship

Hoboken, NJ

**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

## SKILLS

**Programming:** Node.JS, Python, Golang, bash, 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

**Columbia University**, on the PEERING Testbed

*Visiting Research Intern*

May 2024 - Present

- 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.

**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”, as well as writing documentation and CI.
- Debugged various Linux Kernel features mostly involving **namespaces** and mounts for “try.”

**Stevens Student Managed Investment Fund**

*Head of Quant Development & Optimization (Team of 5)*

Jan 2025 – Present

- 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 k3s **Kubernetes** 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.

*Quantitative Analyst on the Development Team*

Sep 2024 – Dec 2024

- Improved existing equity screening interfaces, including AuthN, AuthZ, SSO, and implementing CI/CD.

**Blueprint @ Stevens**

*Executive Board: VP of Technology*

July 2023 – Present

- Lead the technology team to develop and maintain **internal tooling**, **compute infrastructure**, and **documentation** to sustain our mission.
- Assisted other teams on their testing, **CI/CD pipelines** and hosting infrastructure to speed up development.

**Fosshost**, Non-profit hosting provider

*Volunteer Deputy-CTO*

Oct 2021 - May 2022

- Assisted leading TechOps in maintaining a fleet of **linux hypervisors** around the world, ensuring service availability.
- **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.

*Volunteer TechOps*

Oct 2020 - May 2021

- Installed and configured support system to **minimize support response time**, and Gitlab for collaboration.
- Led in designing an **identity and access system (RBAC)**, allowing for better control over system permissions.
- Deployed a **global private network** to facilitate secure communications between volunteers and internal infrastructure.

## PROJECTS

**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

## REFERENCES - Available upon request