

# Tianyu (Ezri) Zhu

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## EDUCATION

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

Hoboken, NJ

**Honors:** Global Scholarship

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

## SKILLS

**Programming:** Node.JS, Python, Golang, bash, POSIX shell, HTML/CSS, Javascript, Rust, BPF, C++, C, Java, Scheme, CI/CD tools, git, Postgres

**Systems Administration:** 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.

**Stevens Institute of Technology**, with Brown University

*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.”

**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.

**RPG Research**, Non-profit Community Organization

*Volunteer systems administrator*

Jun 2021 - Jun 2022

- Designed and deployed a **data-driven monitoring and observability system** at scale, maintaining server uptime and improving site reliability. (Grafana, Prometheus, Thanos)
- Re-designed the network to support a new site and increase **redundancy**.

## PROJECTS

**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.

**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.

**Various Discord bots**, Golang, Redis, Discord, OpenAI, Stable Diffusion, other various API endpoints

- Created various discord bots that interact with various AI related API endpoints to enable more people to experiment with various AI platforms.
- Utilize Redis to store past conversation messages for fast retrieval when using assistant and other context related AI endpoints.

## ADDITIONAL EXPERIENCE

**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.

**Stevens Student Managed Investment Fund**

*Development Team: Quantitative Analyst*

Sep 2024 – Present

- Designed and managed equity trading infrastructure at scale.

## REFERENCES - Available upon request