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

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, IRR, RPKI, RTBH, WireGuard, OpenVPN, MTR, Netcat, Metasploit, nmap, IPS

PROFESSIONAL EXPERIENCE

Columbia University, on the PEERING Testbed
Undergraduate Research Assistant   May 2024 - Present
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.
- Participate in executive board and project team meetings to provide advice on the technical side of projects.

Stevens Linux User Group
Executive Board: Secretary   Apr 2023 – Present
- Presided over executive board meetings to ensure due diligence and compliance with the student government and constitution.
- Assisted on various Linux related events, assisting other students in installing and maintaining their Linux machines.
- Worked with the university IT department to collaborate on a student wide shared UNIX server.

REFERENCES - Available upon request