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

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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.

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."

Stevens Student Managed Investment Fund
Development Team: 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) to power risk analytics and financial models.

Development Team: Quantitative Analyst 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.

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

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