Aditya Prerepa

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EDUCATION

University Of Illinois at Urbana-Champaign   Champaign, IL
Bachelor of Science, Computer Science & Philosophy   Expected May 2025

OPEN SOURCE

[Istio Service Mesh](#)
Networking Maintainer   March 2020 - Present
- [Maintainer](#) on the Istio Networking team.
- Areas of work: [VM Healthchecking](#), Auto Registration, Envoy, [Delta xDS](#), [CRD Status Propagation](#)
- [Presented Delta xDS work at KubeCon NA (Los Angeles) 2021](#) with Google Engineer John Howard**.**
- Currently working on the Ztunnel component of the Ambient Mesh.

WORK EXPERIENCE

NVIDIA   Santa Clara, CA
Software Engineering Intern   Aug 2024 - Jan 2025
GPU Cloud Networking.

Netflix   Los Gatos, CA
Software Engineering Intern   May 2024 - Aug 2024
Cloud Gateway Team.

Aviatrix Systems   Santa Clara, CA & Champaign, IL
Member of Technical Staff   Oct 2022 - Apr 2024
Skills: Go, Rust, C, Python, Istio, Kubernetes
- Working on a fork of NGINX (aviatrix/fenix), improving performance, adding WebAssembly support, supporting xDS APIs and more.
  - Worked on re-implementing TCP streaming to use optimized syscalls, which increased throughput roughly 6 times.
  - Currently working on adding kTLS and eBPF/SOCKMAP for optimized encrypted proxying.
- Helped conceptualize and implement integrating Kubernetes workloads into Aviatrix Distributed Cloud Firewall.
- Worked on Kubernetes & Istio over Aviatrix, bringing L7 policy enforcement and traffic management to L3 and L4 network overlays.
  - Contributed to the Istio Ambient Mesh's Ztunnel (A rust zero-trust proxy - https://github.com/istio/ztunnel).
  - Prototyped running ztunnel as a VPC Proxy.

University Of Illinois at Urbana-Champaign   Champaign, IL
Undergraduate Research Assistant   Oct 2022 - Present
Skills: Go, Istio, Kubernetes
- Working on distributed system real-time request optimization in Professor Godfrey's group (https://pbg.cs.illinois.edu/).
- Submitted to venues like HotOS and HotNets.
- [Kubecon NA 2023 Talk](#)

Tetrate   Milpitas, CA
Software Engineer   Apr 2021-Oct 2022
Skills: Go, Kubernetes, Istio, and C++.
- Conceptualized, led, and developed the Istio Cost Analyzer (github.com/tetratelabs/istio-cost-analyzer).
  - Set to be deployed across all Tetrate Service Bridge installations.
- Working on both Open-Source Istio as a Maintainer and on products like the Tetrate Service Bridge and the Tetrate Istio Distribution.
  - Brought delta xDS to experimental status, proving performance improvements at KubeCon NA 2021.
  - Worked on implementing delta API within internal status propagation pipelines.
- Gave tech talks on [getting started with Open Source](#) and [Istio codebase reviews](#).

Stanford University   Palo Alto, CA
Research Assistant   June 2021 - Feb 2022
Skills: Python, Docker,, Singularity Containers.
- Worked on [Codalab Worksheets](), a platform for reproducible machine learning research with [Professor Percy Liang]().
- Implemented Multi-Cloud storage abstraction which allowed workload data to be stored reliably on any Cloud.
- Improved the reliability and scalability of the distributed worker system by introducing mechanisms that allowed increased visibility into worker statuses, increasing overall observability.

Tala Security   Mountain View, CA
Software Engineering Intern   June 2020 - Sept 2020
Skills: Java (Spring Boot, Spark, gRPC), NodeJS
- Built a a smart engine to extract and analyze security vulnerabilities in third party APIs and provide valuable insight into other metrics, with in-built token refresh.
- Distributed security infrastructure into a microservice model, deploying microservices with Docker, with inbuilt fault tolerance and failover thresholds.

Life360   San Francisco, CA
Software Engineering Intern   June 2019 - Sept 2019
Skills: Java & Kotlin (RxJava, RxKotlin & Dagger)
- On-site paid internship on Growth Team. Built and shipped automated unit and UI tests, and worked on an crawler that traversed the app in multiple languages.
- Gave a company-wide presentation about the project.