Akshat Mahajan

me@akshatmahajan.com   (systems engineer)   akshatmahajan.com

EXPERIENCE

Cloudflare   Remote (Boston, MA)

Systems Engineer, Privacy Edge   12/2024 - Present

- Implemented a major IETF RFC from scratch and shipped to Cloudflare's edge early, serving 72M requests and hitting 40K OSS downloads in one month.

- Contributing to privacy-preserving double-hop proxies in Rust to power Apple's Private Relay, Microsoft's Secure Browsing and similar services

Systems Engineer, Argo Smart Routing   2/2022 - 11/2024

- Owned a dataplane of UDP / TCP / IP network proxies in Rust serving $> 800k$ requests per second globally, designed to find the fastest route to a web server

- Improved proxy tail latency by 10,000x (90 ms $\rightarrow$ 8 μs) by profiling an asynchronous work queue and incrementally replacing it with an in-memory cache

- Removed multiple single points of failure: built at-scale key rotation for Wireguard tunnels, and designed + delivered a highly-available analytics pipeline

- Added out-of-application performance bottleneck observability through use of socket ancillary data and eBPF-based packet loss detection in the kernel

PlanGrid $\rightarrow$ Autodesk (acquisition)   San Francisco, CA

Site Reliability Engineer   9/2017 - 7/2019

- Managed networking, routing and reliability for over 100+ services across 2 intl. data centers with self-hosted Kubernetes clusters, Python, Terraform, Salt + AWS

- Built Plangrid's in-house canary release platform, allowing any backend service to catch bugs before being exposed to 100% traffic, using Istio and Spinnaker

- Improved disaster recovery response objectives by 95%+ by migrating live multi-TB Postgres write masters to streaming replication architecture

BrightEdge Technologies   San Mateo, CA

Software Engineer   7/2016 - 9/2017

- Sole maintainer of an SEO optimization system – ingested 40 million websites each week using a distributed batch processing pipeline built on Hadoop

- Quintupled network throughput after leading a switch to a binary wire protocol for intra-datacenter traffic (200 MB/s $\rightarrow$ 1 GB/s), using Apache Thrift

- Slashed monitoring latency by 96% by implementing priority queueing that "remembers" slow websites and diverts them to specialised channels

PROJECTS OF NOTE
Open Source

privacy-go, a gRPC fork that secures sensitive data within Golang microservices by encrypting protobuf messages and enforcing function-level access control

Qbox, a Layer 7 network proxy coordinator for distributed sagas, simplifying monolith to microservice migration

Contributed a feature to Netflix's Spinnaker, allowing developers to add custom Datadog tags as first-class feature in its monitoring ecosystem

Contributed a feature to Hashicorp's Packer, allowing developers to attach multiple temporary security groups in AWS AMI builds

More projects available at `https://github.com/AkshatM`

EDUCATION

Brown University   Providence, RI

Masters of Science, Computer Science   Jan. 2020 - Dec. 2021
Teaching Assistant, CS1380: Distributed Systems
Research Assistant, Kubernetes operators research

University of California, Los Angeles (UCLA)   Los Angeles, CA

Bachelor of Science, Physics,   July 2012 - June 2016
cum Laude with College Honours

PROFICIENCIES   Rust, Golang, Python, Typescript, Saltstack, Terraform, Node.js