Apoorv **Kothari**

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# Summary

Engineering leader with a love of challenging problems and fast-moving startups with a leadership style rooted in empathy, collaboration, and long-term strategic thinking. Staff Engineering Manager of GitHub’s Traffic team, and previously managed the compute and datacenter teams within GitHub’s Infrastructure organization. Network and datacenter engineering background and experience building high functioning and performing teams rooted in empathy, collaboration, and delivering the infrastructure platforms are built on. Years of experience supporting tens of millions in annual spends and building long term strategic visions while taking ownership of results.

# Work Experience

**AWS** *Seattle, WA*

Software Engineer – Cryptography *Feb. 2021 ‑ NOW*

* Maintained the IETF implementation of the QUIC ([s2n-quic](https://github.com/aws/s2n-quic)) and TLS ([s2n-tls](https://github.com/aws/s2n-tls)) cryptographic network protocols used across AWS.
* Helped Cloudfront migrate to using s2n-quic, which resulted in 20% better performance and 30% more CPU savings at launch.
* Implemented multiple QUIC RFC features Fuzz and model check testing.
* Notable contributions to s2n-quic include: implementing Connection migration, adding Client support, increasing testing parity between Rustls and s2n-quic, writing Fuzz testing and writing automated-reasoning (CBMC) testing.
* Implemented async client processing for s2n-quic, and worked closely with Cloudfront to integrate the feature and deliver multi-domain support on Cloudfront endpoints.
* Conducted investigations and lead team discussions on various large-scale projects including: Ack-frequency, kTLS, and Mitigating Optimistic Ack Attack. My contribution was influencing API design and internal implementation of the libraries based on deep understanding of the underlying technology and measured performance.
* kTLS??
* Created the Netbench orchestrator to automate reproducible testing of various network protocols on EC2 hosts. End result was the ability to coordinate multiple EC2 hosts across multiple AWS regions in order to model production-like configuraiton.

Software Engineer – EC2 *Nov. 2019 ‑ Feb. 2021*

* Deployed a new production service for fingerprinting similar EC2 hosts. At launch the service handled 10,000+ API calls across 15+ AWS regions with 0 downtime.
* Implemented automatic detection of stuck fail-safe-switches across 15+ AWS regions, which increased availability of the underlying service and saved the company $100,000/year.
* Valgrind pedantic <https://github.com/aws/s2n-tls/issues/3758>
* Augmented support for granular fail-safe-switches, which enabled detecting and closing switches at the AZ level across 15+ AWS regions. The granularity allowed for higher availability of the overall service and saved the company $500,000/year.

**iHeartRadio** *New York, NY*

Infrastructure/Backed Software Engineer *Feb. 2017 ‑ Mar. 2019*

* Worked in a small team to migrate the entire Scala micro-service backend from Akka clustering to Kubernetes (*k8s* on AWS, using the *kops* project).
* Helped define and implement a highly-available deployment/rollback process for the backend team on Kubernetes. Then worked with the Ops/SRE team to standardize the deployment process for multiple teams across the company; balancing cost, availability and maintenance overhead to meet the business goals.
* Worked closely with Data Science/Design/iOS teams to launch a new Music Recommendation micro-service.
* Helped mitigate outage risks during MongoDb upgrades and database mutations by implementing Mongo embed testing.

**Consulting** *Remote*

Android Engineer *Mar. 2016 ‑ Feb. 2017*

* <https://github.com/toidiu/fieldbook> TODO
* <https://play.google.com/store/apps/details?id=www.oystour.com.oystour> TODO

Technical Software Consultant *Mar. 2016 ‑ Feb. 2017*

* Work closely with [Shatterproof](https://www.shatterproof.org/) leadership as the technical advisor. Translated business requirements into technical-specification documents, interviewed candidates and helped assess software systems proposed by contractors.

**TouchLab** *New York, NY*

Android Engineer *Sept. 2014 ‑ Jan. 2016*

* Collaborated closely with clients to launch Android apps. Responsibilities included system architecture, backend/front-end development, testing, and the releases.
* Forest Watcher (project highlight): The goal was to equip rangers in Africa with deforestation map data. The Android app implementation featured offline mapping, offline data storage and online/offline data sync. Supporting [talk](https://speakerdeck.com/toidiu/offline-maps).

**Rubenstein Technology Group** *New York, NY*

Software Engineer *Sept. 2014 ‑ Jan. 2016*

* Launched a new website for a large law firm. The site was responsive across multiple devices and supported all major browsers.
* Worked closely with the Design lead to create content-driven-design websites.

# Education

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| **The Cooper Union for the Advancement of Science and Art** | *New York, NY* |
| Bachelor of Engineering – Electrical Engineering   * Full-tuition Academic Scholarship | *Graduation 2012* |