Apoorv **Kothari**

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# Summary

# I have 12+ years of software engineering experience across various platforms and parts of the tech stack. Past experiences include launching a highly performant cryptographic transport library, migrating production micro-service backend to Kubernetes, and delivering complex Android solutions. Expert in network engineering, backend development and scalable infrastructure. Passionate about security.

# Work Experience

**AWS** *Seattle, WA*

Software Engineer – Cryptography - Transport libraries *Feb. 2021 ‑ Present*

* Core maintainer of cryptographically secure transport libraries which power the majority of internet traffic within AWS datacenters.
* Open-sourced and maintained [s2n-quic](https://github.com/aws/s2n-quic), a production ready implementation of the [QUIC](https://www.rfc-editor.org/rfc/rfc9000.html) transport protocol; which is the backbone of HTTP/3.
* Core maintainer of the [s2n-tls](https://github.com/aws/s2n-tls) C codebase and Rust bindings, a TLS protocol library which is the key AWS services.
* Migrated CloudFront to s2n-quic for HTTP/3 support. Enabled multi-certificate support for CloudFront subdomains by adding support for [asynchronous certificate loading](https://github.com/aws/s2n-quic/issues/1137).
* Secured team consensus and implemented large-scale library features, which influenced public APIs; highlights include: [Ack-frequency](https://github.com/aws/s2n-quic/issues/1276) analysis, implementing a zero-cost [event framework](https://github.com/aws/s2n-quic/issues/439), QUIC Connection Migration support, adding [client support](https://github.com/aws/s2n-quic/issues/1009) to s2n-quic, [mitigating Optimistic Ack Attack](https://github.com/aws/s2n-quic/issues/1962), [pedantic memory checks with Valgrind](https://github.com/aws/s2n-tls/issues/3758), [OpenSSL 3.0 support](https://github.com/aws/s2n-tls/issues/3442).
* Created [Netbench Orchestrator](https://github.com/aws/s2n-netbench/tree/main/netbench-orchestrator), which enabled production-like testing of network protocols on EC2 hosts, and informed data-driven decisions in library development.

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

* Maintained a core service which repaired 100K+ live customer EC2 hosts/month without impacting production workload.
* Implemented and automated a granular fail-safe switch which prevented customer impact, increased availability of our service and built cross-team trust.
* Replace hardcoded EC2-compatibility rules across multiple services with a service-based approach which increased auditability and feature agility.

**iHeartRadio** *New York, NY*

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

* Led the launch of Music Recommendation service, aligning stakeholders across Data Science/iOS/Design teams. Responsibilities included designing APIs, architecting a resilient storage with rollback capabilities and implementing service logic.
* Migrated Scala micro-service backend from Akka Cluster to Kubernetes over 6+ months.
* Worked as part of small team to launch a highly-available Kubernetes deployment/rollback process for the Backend services team (deployed on AWS using [*kops*](https://github.com/kubernetes/kops)); collaborated with SRE team to set up additional Kubernetes clusters and standardize the process for all teams across the company, while balancing cost, reliability, and maintenance overhead.
* Mitigated outage risks during MongoDb upgrades and mutations by implementing [embed MongoDb](https://github.com/flapdoodle-oss/de.flapdoodle.embed.mongo) testing for all services.

**Consulting** *Remote*

Independent Consultant *Mar. 2016 ‑ Feb. 2017*

* Worked closely with [Shatterproof](https://www.shatterproof.org/) non-profit leadership team as technical advisor; translated business requirements into technical-specification documents, interviewed candidates, and helped assess software systems proposed by outside contractors
* Delivered project management app for a construction firm, featuring Google Drive-backed storage, distributed synchronization across multiple devices, text/PDF/image editing, and full offline support.

**TouchLab** *New York, NY*

Android Engineer *Sept. 2014 ‑ Jan. 2016*

* Delivered a solution to assist Forest rangers with deforestation reporting; featuring offline support, custom map rendering, and 3rd party data collection. Supplemental information: [meetup presentation slides](https://speakerdeck.com/toidiu/offline-maps) and [project mission](https://www.youtube.com/watch?v=kXJ7BiDmNss).
* Collaborated closely with customers to deliver Android based solutions in a quick-paced environment.

# Education

**The Cooper Union for the Advancement of Science and Art** *New York, NY*

Bachelor of Engineering | Full-tuition Academic Scholarship Graduation 2012