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, a production ready implementation of the QUIC transport protocol; which is the backbone of HTTP/3.
- Core maintainer of the 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.
- Secured team consensus and implemented large-scale library features, which influenced public APIs; highlights include: Ack-frequency analysis, implementing a zero-cost event framework, QUIC Connection Migration support, adding client support to s2n-quic, mitigating Optimistic Ack Attack, pedantic memory checks with Valgrind, OpenSSL 3.0 support.
- Created 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*); 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 testing for all services.

Consulting   *Remote*
Independent Consultant   *Mar. 2016 - Feb. 2017*

- Worked closely with Shatterproof 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 and project mission.
- 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