

Apoorv Kothari

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Work Experience

AWS

Seattle, WA

Software Engineer – Cryptography

Feb. 2021 - NOW

- Maintained AWS's opensource IETF implementation of QUIC ([s2n-quic](#)) and TLS ([s2n-tls](#)) cryptographic network protocols.
- Helped Cloudfront migrate to using s2n-quic, which resulted in 20% better performance and 30% more CPU savings at launch.
- Implemented asynchronous ClientHello processing for s2n-tls/s2n-tls Rust bindings/s2n-quic, and worked closely with Cloudfront to deliver [asynchronous certificate loading](#).
- Conducted investigations and lead team discussions on various large-scale projects which influenced API design and internal implementation details. Some projects included: [Ack-frequency](#) analysis, [mitigating Optimistic Ack Attack](#), adding QUIC Connection Migration support, adding [Client support](#) to s2n-quic, [event framework](#), enabling [pedantic Valgrind checks](#), adding [OpenSSL 3.0 support](#).
- 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 configuration.

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 zero failures/downtime.
- Implemented automatic detection of stuck fail-safe-switches across 15+ AWS regions, which helped reduce oncall pages, increased availability of the underlying service and cost savings of \$100,000/year.
- Added granular AZ support to fail-safe-switches, resulting in increased availability and cost savings of \$250,000/year.

iHeartRadio

New York, NY

Infrastructure/Backend 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

- Fieldbook: a project management app for construction firms featuring google drive backed storage, distributed synchronization across multiple devices and offline support.
- [Oystour](#): a compilation of different Oysters presented in a beautiful app.

Technical Software Consultant

Mar. 2016 - Feb. 2017

- Work closely with [Shatterproof](#) 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](#).

Rubenstein Technology Group

New York, NY

Software Engineer

Oct. 2013 - Aug. 2014

- 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

The Cooper Union for the Advancement of Science and Art

New York, NY

Bachelor of Engineering

Graduation 2012

- Full-tuition Academic Scholarship