

# Apoorv Kothari

apoorv@toidiu.com | toidiu.com

## Summary

I have 4+ years of professional Rust experience and 12+ years of software engineering experience across 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.

## Skills

Cryptography, Network Engineering, TLS, QUIC, Backend Engineering, Android Engineering, Kubernetes, Terraform, MongoDB, SQL. Rust, C, Java, Scala, Kotlin.

## Work Experience

### AWS

Seattle, WA

Software Engineer – Cryptography - Transport libraries

Feb. 2021 - Present

- Core maintainer of [s2n-quic](#) and the [s2n-tls](#) networking protocol libraries which power the majority of AWS traffic.
- Onboarded CloudFront to s2n-quic for HTTP/3 support which resulted in 20% CPU reduction for the networking stack. Helped 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 and informed library development.

Software Engineer – EC2

Nov. 2019 - Feb. 2021

- Maintained a core service which repaired 100K+ live customer EC2 hosts/month and prevent production impact.
- Implemented and automated a granular fail-safe switch which reduced incident blast radius from AWS region to AZ.
- Replace hardcoded EC2-compatibility rules across multiple services with a service-based approach. Increased auditability and made it easier to onboard new EC2 host types onto the service.

### iHeartRadio

New York, NY

Infrastructure/Backend Software Engineer

Feb. 2017 - Mar. 2019

- Led the launch of the Music-Recommendation feature support. Aligned stakeholders across Data Science/iOS/Design teams and delivered a resilient service with rollback capabilities.
- Live migrated production Scala micro-service backend from Akka Cluster to Kubernetes over 6 months. The Kubernetes deployment was backed by Terraform and fully reproducible. The project paved the path to onboarding other teams (Frontend, Data Science) across the company to Kubernetes.
- 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 3<sup>rd</sup> 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