

WORK EXPERIENCE

Block, Inc. (Cash App) Software Engineer *Bitcoin Exchange*

Oakland, CA (2022 - 2025)

Joined the team responsible for Cash App's bitcoin-to-fiat purchase and sale experience.

- Developed and maintained **microservices** using **Misk** (Cash App's open-source framework), enabling new features and data flows across customer-facing surfaces.
- Refactored the high-level order execution engine, migrating balance ledgering and order execution logic from an overloaded monolith (originally built for balance tracking) into a dedicated microservice maintained by the money movement team, improving system separation of concerns and reliability. This system processes millions of orders across a given week.
- Prototyped and implemented** a microservice for tracking and backfilling bitcoin acquisitions and dispositions to comply with new **IRS 1099-DA regulations**. The service performs **tax-lot tracking** and generates capital gains/loss reports based on user transaction history, enabling accurate regulatory reporting for millions of users.
- Built and deployed containerized services on **AWS** using Docker, adhering to internal build and deployment processes. Utilized Terraform-based provisioning for infrastructure.
- Designed **gRPC** APIs and utilized **Kafka**-based event streams for service-to-service communication.
- Improved service observability with custom **DataDog** dashboards and alerting.
- Collaborated with mobile and infrastructure teams to deliver performant, resilient backend features.

Block, Inc. (Square) Software Engineer *CI Infrastructure*

Oakland, CA (2020 - 2022)

Part of the core team maintaining Square's canonical CI build system.

- Developed and maintained **Kochiku** (Square's open-source CI system) and its AWS-based infrastructure, running **20K builds/week** across **600 repositories** (~150K compute-hours).
- Managed CI/CD services (**Jenkins**, **Artifactory**) and provisioned supporting infrastructure (e.g., build caches, Docker registries).
- Handled on-call rotations; diagnosed and resolved CI resource, performance, and configuration issues.
- Tuned infrastructure performance (e.g., NFS I/O, Git clone, Git LFS); handled upgrades and migrations of CI components (e.g., MySQL in test deployments, Artifactory).
- Evaluated alternative CI tools, like **Buildkite**, and collected metrics to inform infrastructure improvements.

Square Software Engineer *Android Build and Release*

San Francisco, CA (2018 - 2020)

Team reorganized to form a dedicated group focused on Android CI.

- Improved and maintained build and test scripts for a large Android monorepo, which had scaled from **100-250 daily PRs** and **2K-30K compute-hours/week**.
- Supported early adoption of **Bazel** (replacing Gradle/Buck); automated build configuration translation and provisioned remote caches.
- Resolved build and infrastructure issues across AWS-hosted CI workers.

Square Software Engineer *Automated Test and Release Engineering, Mobile CI*

San Francisco, CA (2016 - 2018)

Worked with a small team to maintain and develop CI/CD systems for Square's mobile and embedded software engineers.

- Developed and operated two **Jenkins**-based CI systems across hundreds of Mac Mini and NUC workers for iOS and embedded builds; automated provisioning and configuration management.
- Built and maintained middleware for test orchestration, Xcode simulator linking, and macOS/Xcode upgrades. Validated and maintained macOS and Xcode toolchains across Apple updates.
- Maintained miscellaneous middleware (**apksigner** service, test enumeration, instrumenting QEMU AVDs) used for developing Android applications.
- Maintained web services to track workers, collect metrics, and manage internal & external releases.
- Created **Logstash**-based microservice to forward build logs into Kafka for centralized search.
- Migrated Android UI testing to Google **Firebase Test Lab**, scaling from **13K-35K compute-hours**; automated test enumeration, parallel runs, and reporting.
- Built dashboards on flaky UI tests to identify regressions, reducing CI time and improving reliability.
- Supported iOS CI scaling from **2.5K-7.3K builds/week**, **500-750 commits/week**, and **800-2.5K compute-hours/week**.
- Participated in on-call rotations and performed troubleshooting for sporadic configuration, resource, and performance issues arising with CI infrastructure.

TECHNICAL SKILLS

languages

Java/Kotlin
Ruby
Python
Bash scripting
HTML/CSS/JS

operating systems

macOS
Windows
CentOS
Ubuntu
Arch Linux

tools & services

infrastructure

Chef
Ansible
Terraform

orchestration

Jenkins
Buildkite

frameworks

Ruby on Rails

provisioning

DeployStudio
Foreman
Proxmox VE

databases

MySQL
PostgreSQL

build systems

Bazel
Gradle
Xcode

observability

Sentry
SignalFx
DataDog

Looker
Logstash

AWS cloud services

EC2, IAM
CloudFormation
CloudWatch
S3, RDS, ECR
SQS, SNS

GCP cloud services

Firebase Test Lab
Container Registry

EDUCATION

University of California, Davis

College of Engineering, Class of 2016
B.S. Computer Science and Engineering

- Dean's List × 8 Quarters

MISCELLANEOUS

Programming Blockchain seminar

Austin, TX (February 2022)

2-day workshop taught by **Jimmy Song**, covering bitcoin blockchain development fundamentals.

LND node operator

Homelab (2022-2023)

Operated a Lightning node for 15 months, facilitating 13.6 bitcoin of routing & liquidity transaction volume across ~13,400 transactions and ~50 peer channels by providing one bitcoin of capacity for the Lightning Network.