Nick Brosnahan

nick@brosnahan.org - Sunnyvale, CA - +1-669-241-3448

Summary

- Adaptable problem solver with experience in software cultures from early-stage startups to global corporations.
- Effective team leader with strength in forging relationships and improving communication between groups.
- Practical software developer with focus on creating and continuously improving deployed software within available constraints.

Experience

Personal Sabbatical - May 2021 - Present

Yohana — Backend Services Engineer (Mar 2020 - May 2021)
IoT platform services

- Led backend services for IoT device management.
- Coordinated device provisioning, pairing, and software update features in conjunction with mobile app and device firmware teams.
- Designed and implemented backend gRPC APIs for device registration during pairing experience.
- Built secure interaction for QR code generation and device certificate provisioning of IoT devices for factory process.
- Integrated back-end device management services with AWS IoT Core APIs, MQTT broker, AWS DynamoDB, and AWS Lambda.
- Designed firmware encryption/signing flows with device firmware team, integrated with the firmware CI/CD build process, and implemented OTA firmware update mechanism using AWS IoT jobs framework.
- Investigated and consulted on various backend design choices such as multi-region database storage, AWS region grouping, failover behavior, and user-based device access sharing in the context of being a global IoT platform for Yohana.
- *Technologies: Kotlin, Micronaut Framework, Python, Docker, TeamCity, gradle, kubernetes, Harness, terraform, AWS IoT, AWS Lambda, AWS DynamoDB, MQTT, gRPC/protobuf, auth0*

Apple — Senior Software Engineer (Dec 2015 - Feb 2020)

Apple Cloud Services - Private Relay Mail

▪ Designed and delivered @privaterelay.appleid.com mail relay for Sign In With Apple feature.

▪ *Technologies: Java, C, Python, Docker, CloudKit, Blob store, Jenkins, gradle, spinnaker, helm, kubernetes*

Special Projects Group - Autonomous Systems Data Platform

▪ Developed time-series data storage solution based on Hbase and multiple back-end blob storage APIs.

▪ Coordinated data ingestion and processing activities with multiple internal client teams.

▪ *Technologies: Java, Python, Cloudera (HBase/HDFS, Kafka), Blob store, Jenkins, gradle, HashiCorp Nomad/Consul, Vagrant, Docker, Nagios, Pager-Duty*

Apple Pay

▪ Developed end-to-end prototype for Apple Pay Cash (iOS peer-to-peer payments) with multiple external banking entities.

▪ Implemented server-side APIs and internal business logic to integrate with existing Apple Pay services, iOS Wallet and iMessage, and banking partners.

▪ Prepared web-based, end-to-end demos of completed functionality for executive review.

▪ Contributed to development and test tooling, build and release process, and environment build-out. Wrote documentation for externally-facing APIs and expected business-logic flows.

▪ *Technologies: Java, Newcastle frameworks, JavaScript, Carnival, gradle, Oracle, ruby, SQL*

Nest (Google) — Senior Software Engineer (2014 - Dec 2015)

▪ Created new back-end services to support the Nest Alarm System during initial device bring-up and development.

▪ Designed control protocols, payloads, and event-based notifications between low-powered IoT devices over Thread/Weave.

▪ Supported and enhanced back-end services for existing Nest devices (thermostat, cameras, and smoke detectors) including device software update.

▪ *Technologies: Scala, Thread/Weave, MySQL, Cassandra, Docker, Jenkins, Git*

Personal Sabbatical - Paris, France (2013 - 2014)

Apple — Senior Software Engineer (2009 - 2013)
iCloud Account Services

▪ Responsible for the architecture, design, development, and support of iCloud account services from initial deployment through first developer release and customer go-live. Managed growth up to 317M+ users.

▪ Led a five-person team to build features for initial setup and configuration of iOS/macOS devices as well as iCloud preference panels for iOS/macOS/Windows.

▪ Built high-performance identity and token authentication service for all inbound iCloud requests. Developed service features for iCloud Keychain escrow and recovery, security code challenge, and SMS verification.

▪ Managed security and privacy issues involving identity and account management, user data collection and storage, email verification, password strength and resets, device verification, multi-factor authentication, single-sign-on, terms-of-service changes, and legal requirements.

▪ *Technologies: Java, Netty, Ruby, Sinatra, Cucumber, Linux, Apache, Memcached, Oracle, Cassandra, Subversion, Git, OSX, iOS*

Education

B.A., Computer Science — Dartmouth College