

Joshua Kellerman | Principal Engineer & EM

New York / SF Bay Area / Charlotte, NC / Remote
<https://www.joshuamk.com/engineering>

Professional Summary

Results-oriented Software Engineering Leader with 10 years of experience designing and shipping distributed systems at scale for top-tier tech companies (Twitter, Credit Karma, Yubico). Proven track record of driving technical strategy, building/integrating generative and traditional AI/ML models, standardizing back-end infrastructure, and mentoring teams. Designed, built, and shipped "Safety Mode" on Twitter's Health and User Experience Team (disbanded) that served 36 million monthly users between 2021 and 2022. Strong expertise in Scala, Typescript (Node.js), Python (ML/AI/Web), and Cloud Services Architecture (AWS/GCP), combining deep technical hands-on ability with high-level organizational leadership.

Technical Skills

- **Languages:** Scala (Finagle/Finatra, Play, Cats), Python (Flask, Numpy, Pandas), Java, GoLang, TypeScript, Javascript, PHP, C, C++, C#. Functional Programming, Object-Oriented Programming, Procedural Programming.
- **AI & Machine Learning:** PyTorch, Tensorflow, NLP/NLU, Deep Learning (Feedforward, CNNs, RNNs, Transformers), Ranking, Knowledge Graphs, Generative AI (LLMs, Fine Tuning, Diffusion).
- **Infrastructure & Cloud:** AWS, GCP, Kubernetes, Docker/Rancher, Pubsub, Kafka, SQS, Hadoop, Spark, Aurora/Mesos, Terraform. CI/CD. Stats/Logging.
- **Data, Storage & Retrieval:** Vector and Graph Databases, Semantic/Similarity Search, MySQL, PostgreSQL, DynamoDB, NoSQL, MongoDB, Redis, BigQuery, Spanner, Elasticsearch, Memcached, etc.
- **Concepts:** Data-intensive Distributed Systems, Microservices Architecture, Event Driven Architecture, CI/CD, Agile/Scrum Leadership, Testing Frameworks.

Leadership

- **Engineering Management:** Served as EM at Echo360, interim EM at Twitter, and Lead at Credit Karma, Yubico, and Mosaix.ai; managed team health, performance reviews, hiring, and execution planning. Worked directly with VP and Director-level stakeholders to achieve goals.
- **Technical Mentorship and Team Building:** Established and led weekly engineering excellence workshops at Credit Karma to up-level junior and mid-level engineers in Functional Programming paradigm (Scala). Hired and trained engineers at Mosaix.ai, Echo360, and Yubico.
- **AI-First Tech Strategy:** Designed features and thresholds with Twitter Data Science for Safety Mode ML models. Integrated NLU captioning microservice at Echo360 as Principal Engineer and Architect. Designed features for and trained ranking and NLU models at Mosaix.ai with Google

AI Scientist Ni Lao.

- **Cross-Functional Leadership:** Led high-stakes technical integration with a major Credit Bureau to resolve critical data consistency issues affecting millions of users, measured \$2 million annual recovered profits. Led investigation into a major data inconsistency and brought a resolution to internal Data Team.

Experience

Credit Karma (Intuit)

Tech Lead / Senior Backend Engineer

Charlotte, NC

Dec 2024 – Present

- Serving as a Technical Lead for the core Credit Ecosystem team, driving and implementing architectural decisions for business-crucial offline data processing.
- **Staff-Level Impact:** Spearheaded a cross-team initiative to standardize Finagle Server Architecture, significantly reducing technical debt and unifying service patterns across the org.
- Designed and implemented the consolidation of fragmented microservices, optimizing costs and time-to-recovery, and improving system reliability.
- Led high-stakes collaboration with bureaus to resolve member population state drift, restoring data integrity for millions of users.
- Established a weekly Scala engineering excellence series to up-level junior and mid-level engineers.
- Led project combining LLMs and Knowledge Graphs for a PoC Agentic Coding and Documentation Bot “Docu-Bot” for Credit Ecosystem.

Self-Employed

Cloud Architecture Consultant

New York, NY

Dec 2023 – Dec 2024

- Delivered high-impact cloud architecture solutions for diverse clients, specializing in ML/NLP integration and legacy modernization.
- Advised startups on scalability strategies, containerization (Docker/K8s), and microservice decomposition..
- Directed implementation of encrypted, scalable data pipelines using Kafka and AWS Lambda for real-time processing applications.

Echo360

Principal Backend Engineer & EM

Washington, D.C.

Sept 2022 – Aug 2023

- **Dual Role:** Operated as both Principal Engineer and EM of a small backend team, leading technical delivery while managing team health and execution.
- Architected and delivered a video-chaptering microservice, delivering on promise to customers.
- Solved a critical distributed systems failure in AWS SQS that caused duplicate processing; designed an idempotent message handling pattern to guarantee idempotent exactly-once processing.
- Directed the modernization of a legacy two-channel cloud video capture monolith into four-channel capability, meeting quarterly deadlines.
- Oversaw three engineers to overhaul the UI of the Echo360 desktop application for the four-channel upgrade in GoLang and React, significantly improving user experience.

Twitter

Senior Software Engineer (Contract, User Health Team)

San Francisco, CA

Sept 2020 – June 2022

- **On track to Staff Engineer** with FTE offer: Co-owned the architecture for high-visibility "Safety Mode", which served 36M+ monthly active users until retired in X.com takeover in 2022.
- Lead engineer on the migration of the Twitter Abuse Reporting Flow to a new architecture.
- Designed and implemented the "Smart Blocks" social graph edge TTL system using Hadoop, Kafka, and AWS Lambda; instrumental in the 2021 launch of "Safety Mode" for VIP users.
- Engineered a custom Timeline Mixer back-end in collaboration with the Social Graph team to allow users to see filtered abusive content in real-time and provide feedback to our model.
- SRE interim EM: oversaw the "Health Engineering Dashboard" (Python/React), aggregating deployment metrics and KPIs to drive engineering efficiency across the organization. Adopted by Twitter at large.

Mosaix.ai (Defunct)

Palo Alto, CA

2018 – 2019

Senior Backend / Machine Learning Engineer

- Re-architected the NLU (Natural Language Understanding) engine, achieving a 4000x speedup.
- Designed, built, and delivered a machine-learned Recommendations engine for tight 1-month deadline, keyed by locality and language and personalized, with a Redis cache system. Fluidly served hundreds of thousands of requests daily.
- Designed features for and trained Ranking ML models for Semantic Search, using CNNs for feature extraction.
- Optimized Spotify data knowledge graph, resulting in 200% higher coverage and improved model accuracy.
- Built a comprehensive backend engineer testing/debugging environment.
- Worked on business logic middlewares for user web app in TypeScript (rate limiters, routes, etc.)
- Was Mentored on NLU best practices by Google AI Scientist Ni Lao.

Yubico

Palo Alto, CA

2015 – 2018

Web Developer / Lead User Experience Engineer

- Engineered the "YubiKey for Windows Hello" application, featured at the Microsoft Ignite 2016 keynote mainstage.
- Promoted rapidly to Tech Lead of Web Team; oversaw the redesign of Yubico's e-commerce platform.
- 24th Employee and first engineer in Palo Alto office. Trained as a software engineer in C during an intense bootcamp for one month by Jakob Ehrensvard, CTO.

Education

Columbia University

New York, NY

2020 – 2024

Masters Degree (MFA), Film

- Focus on Narrative Structure, Film Directing, and Screenwriting.
- Graduated with Honors.

University of Wisconsin-Madison

Madison, WI

2014

Bachelor of Arts, English / Computer Science

- Dean's List, 3 semesters.