

# **Joshua Kellerman | Principal Software Engineer | EM**

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

## **Professional Summary**

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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**

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- **Programming 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 (CNNs, RNNs, Transformers), Ranking Models, Knowledge Graphs, Generative AI (LLMs, Diffusion).
- **Infrastructure & Cloud:** AWS, GCP, Kubernetes, Docker/Rancher, Pubsub, Kafka, SQS, Hadoop, Spark, Aurora/Mesos, Terraform.
- **Data & Storage & Retrieval:** Vector 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**

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- **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). Proven ability to expand engineering capacity; hired and trained engineers at Mosaix.ai, Echo360, and Yubico, fostering a culture of technical rigor and collaboration.
- **AI-First Tech Strategy:** Designed features and thresholds with Twitter Data Science for Safety Mode ML models (architect). Integrated NLU captioning microservice at Echo360 as Principal Engineer and Architect. Designed features for and trained ranking and NLU models at Mosaix.ai (including BERT) 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 profits. Led investigation into a major data inconsistency and brought a resolution to internal Data Team.

## Experience

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### Credit Karma (Intuit)

Tech Lead / Senior Back-end 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 my organization.
- 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, fostering a culture of technical growth.
- Led project combining LLMs and Knowledge Graphs for a PoC Agentic Coding and Documentation Bot "Docu-Bot" for Credit Ecosystem.

### Self-Employed

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 Engineer & EM

Washington, D.C.

Sept 2022 – Aug 2023

- **Dual Role:** Operated as both Principal Engineer/Architect and Engineering Manager, leading technical delivery while managing team health and execution.
- Designed and delivered a video-chaptering microservice using Scala and Play Framework, delivering on promise to clients.
- Solved a critical distributed systems failure in AWS SQS that caused duplicate processing; designed an idempotent message handling pattern to guarantee 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 and the addition of the two extra channels into the online video editor, overhauled 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, Health & Safety)

San Francisco, CA

Sept 2020 – June 2022

- **On track to Staff** with FTE offer: 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 filter abusive content in real-time.
- SRE work: oversaw the "Health Engineering Dashboard" (Python/React), aggregating deployment metrics and KPIs to drive engineering efficiency across the organization.

- Mosaix.ai** (defunct)  
*Senior Backend / Machine Learning Engineer*
- Palo Alto, CA**  
2018 – 2019
- Re-architected the NLU (Natural Language Understanding) engine, achieving a **4000%** increase in query throughput and reducing latency by 50%.
  - Mentored on NLU best practices by Google AI Scientist Ni Lao (reference), and built a comprehensive backend engineer testing/debugging environment.
  - Optimized Spotify data knowledge graph, resulting in 200% higher coverage and improved model accuracy.
  - Designed features for and trained Ranking ML models for Semantic Search, using CNNs for feature extraction.
  - 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.

- Yubico**  
*Web Developer / Lead User Experience Engineer*
- Palo Alto, CA**  
2015 – 2018
- 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.
  - Trained as a software engineer in an intense bootcamp for one month by Jakob Ehrensvard, CTO.
  - 24th employee at Yubico, ground floor startup. Left to pursue AI/ML and further engineering training.

## Education

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- Columbia University**  
*Masters Degree (MFA, Part-Time), Film*
- New York, NY**  
2020 – 2024
- Focus on Narrative Structure, Film Directing, and Screenwriting.
  - Graduated with Honors.
- La Fémis**  
*Certificate, Film Directing*
- Paris, France**  
2023
- World-renowned writing and directing school
  - Trained by French writers, directors, and cinematographers
- Sciences-Po: Aix-en-Provence**  
*French / European Geo-politics*
- Aix-en-Provence, France**  
2013 – 2014
- Journalist at French student newspaper, "L'Aixhaustif"
- University of Wisconsin-Madison**  
*Bachelor of Arts, English / Computer Science*
- Madison, WI**  
2011 – 2014
- Dean's List, 3 semesters.

## Note to Hiring Team

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I have successfully transitioned from Senior (contract) to a Management and then full-time Staff offer at Twitter, but after being laid off by Elon Musk, the offer was retracted. I then hastily accepted a role without reading the fine print at Echo360 where I was Principal (equivalent to Staff.) Echo360 is the only place I've ever left out of frustration with the work environment. Now, I've taken a high-salary Senior role at Credit Karma until I am either promoted or can find the right fit for a leadership role elsewhere. References available upon request.

## Interests

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Generative AI (Video / Audio / Music), Film Production, Directing, Screenwriting, Painting and Drawing, Flying, Rock Climbing, World Travel, European Government / Politics, English Literature, Classics, French Language and Literature.