

Joshua Kellerman

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EXPERIENCE

Credit Ecosystem – Tech Lead, Senior Backend Engineer

Dec 2024 — Present

Credit Karma – Charlotte, NC

- Project and Technical lead on Credit Ecosystem core backend team, offline data.
- Major data micro-services consolidation: Spearheaded simplifying infrastructure from three services to one.
 - Code and process improvement led to processing roughly 50% data volume due to enhanced data cleanliness with a 75% increase in data quality.
- Envisioned and standardized Twitter Finagle micro-service architecture across Credit Ecosystem services.
- Ran weekly university-course style Scala sessions weekly to up-level and mentor Junior engineers.
 - Up-leveled several Junior engineers to mid-level Scala performing engineers.
- Project lead partnering with major Credit Bureaus to solve state drift issues and improve data quality.
 - Resulting process improvement led to increased revenue of roughly \$2M a year for CK due to resolved data inconsistencies.
- Worked with VPs of Data to clarify and solve major data inconsistency issue in our data lake.
 - Contributed directly to enhanced roadmap strategy for Intuit.

Backend Engineering Consultant

Dec 2023 — Dec 2024

Self-Employed – New York City, NY

- ML / NLP, SaaS, AWS / GCP, Containerization, Orchestration, Security, Micro-services – NYC and CA, various.

Video Capture Team, Principal Backend Engineer / EM

Sept 2022 — Aug 2023

Echo360 – Washington, D.C.

- Project lead – Spearheaded, architected, developed video chaptering micro-service MVP for customer evaluation in Scala / Play Framework. Docker, Kubernetes and Distributed Systems.
- Debugged problem with AWS SQS sending double messages and triggering processes twice, architected solution that used indicator message with timestamp as key to prevent double sending.
- Project lead – Upgrade video recording to four channels from hard-coded two
 - Website monolith upgrade data structures – Scala
 - Video processing AMI upgrades – Scala and Java
 - Websockets API upgrade – GoLang
 - Capture Client upgrade – C / CPP

Health & User Experience, Interim EM, Sr. Software Engineer

Sept 2020 — June 2022

Twitter – San Francisco, CA

- Migrated Twitter Abuse Reporting Flow to entirely new architecture in Scala
- Spearheaded, designed, and implemented social Graph Edge TTL system in Hadoop, Kafka, AWS Lambda
 - Expires social connections (SmartBlocks) automatically after n days
 - Instrumental for 2021 shipment of Safety Mode feature to VIP users. Threshold engineering for NLP.
 - Was serving Twitter's 36 million active monthly users until feature was cancelled in 2023.
- Designed and implemented Smartblocking User Timeline back-end. Worked with SocialGraph team to create a custom Timeline Mixer. Written in Thrift (schema), Scala, and React.Js / Redux
- Architected and implemented a dashboard in Python, React, and Redux for generating per-team high-priority Deployment and Workflows KPIs across the Twitter Health organization.
 - Written in Python (Flask) and React.Js / Redux
- Architected and implemented a method of data extraction for the Twitter Ecosystem, tracking Workflows and Commits per-team, then sending the metadata to BigQuery and an in-house instance of the Google Four Keys project.
- Interim EM, managing a team of ten engineers. Entire department let go during Elon Musk bid, late July 2022.

Founding Machine Learning Engineer, Senior Backend

2018 — 2019

Mosaix.ai – Palo Alto, CA

- Hired, mentored, and trained team members in NLU (research) and API teams
- Re-architected NLU engine and saw a substantial gain in quality of service (4000% overall application query throughput, stability increased to 100% up to 20 concurrent requests with > 50% reduction in query latency)
- Built out testing / debugging / logging framework for components in API and NLU engine. Identified bottlenecks. Increased server throughput, reliability, stability. Set up cloud-based common development back end for NLU Engine to ensure consistency among developers.
- Designed, prepared data for, updated and trained machine learning ranking models, knowledge graph for Spotify data. 200% higher coverage and 2-3% higher accuracy.
- Rebuilt the cache / Recommendations engine for tight deadline. Now fluidly serving hundreds of thousands of Arabic and Hindi requests daily as end-users are using the product. About 400% faster.
- Lead for "text analysis" components service for NLU engine where customers can buy use of any one micro-service. Evaluated for end-users' use by a top-10 worldwide company.
- Integrated Dockerized Python as micro-service into the NLU Engine to host PyTorch as well as Stanford NLTK
- Oversaw / advised design of data structure and edges for Wikidata scraping for Personal Assistant SDK.
- Designed and helped implement blacklisting system for offensive content, keyed by country and language.
- Business logic such as third party API business components, rate limiter, recommendation engine
- Used Python, Java, Scala, Typescript, JavaScript, Redis, MySQL, C++, Bash, Ubuntu & Alpine Servers on AWS and Google Cloud Platform

Consultant (part time)

2018 — 2020

Yubico – Palo Alto, CA

- Video Production and Back-end Engineering consultant

Web Team – Lead User Experience Engineer

2015 — 2018

Yubico – Palo Alto, CA

- Prototyped, designed and developed Yubico's "Solutions Integrations" page in D3.JS and JQuery
- Developer, designer, and code maintainer of Yubico's website – Wordpress / WooCommerce
- Promoted within first six months after demonstrated engineering ability
- Oversaw research, design, and implementation of UX / UI on desktop/mobile, web applications, media
- Spearheaded remake of the Windows Login Tool through UX research
- Designed a common User-Flow experience **for all of U2F (FIDO 2) web-facing apps**, for technology partners
- Implemented a task-oriented intake system that interfaces with other departments and stakeholders
- Main point of contact and project owner for Web Team, specializing in interdepartmental communication
- Involved in the planning and implementation of website architecture based on Magento API, NodeJS / Express.js, Docker, Kubernetes, SCSS, Webpack, React with Redux store and Jest.
- Redesigned and implemented UI for YubiKey Manager 1.0.0 in QT Creator and QML, and Python
- Expanded web team by hiring on and leading additional team members
- Lead developer on a project to redesign Yubico's online store, resulting in major performance increases
- Designed and implemented a full-stack, secure order portal for a large Silicon Valley company
- Working internally with Yubico's CTO and Head of R&D, engineered the **YubiKey for Windows Hello** application
 - This was one of the first applications built to take advantage of the Windows Companion Device Framework
 - This application was displayed on stage during the Microsoft Ignite 2016 keynote
- Served as video director/editor for all Yubico created marketing video content and imagery

SKILLSETS

Natural Languages

English, French (Level B2/C1), Functional Spanish

Engineering and Project Management

AGILE, SCRUM, Kanban, Code Reviews, Scoping, Story Points, etc.

Filmmaking and Art

Screenwriting, Workshopping, Script Doctor, Film Directing, Film Producing, Cinematography, 3D Animation, 2D Animation, Generative AI (Video, Audio, Images, Text)

Back-End Development

Functional, Reactive, and OO Programming; API Design; GraphQL; Docker; Kubernetes; CI/CD

Data Pipelines, Streaming / Messaging, and Databases

Hadoop, Kafka, SQS, BigQuery, SQL, Postgres, DynamoDB, MongoDB, Redis, Stitch / Spark equivalent, Elasticsearch

Testing

Unit, Integration, and Functional Testing Frameworks; Mocking Functions and Data Structs; Full Code Coverage

Languages

Scala, Java, C#, CPP, C, Python, Typescript / Javascript, GoLang, Bash

Scala Frameworks – Finagle / Finatra, Play, Cats

Python Server and ML Frameworks – Flask, NumPy, Pandas, Pytorch, Keras, PyTest

Javascript Front End – Node.js, Jest, React/Redux, ExpressJS

EDUCATION

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK, New York, NY, USA

Masters in Fine Arts, Film, 2020 – 2024

WISCONSIN CENTER FOR ACADEMICALLY TALENTED YOUTH INTERNSHIP, Madison, WI, USA

Web Programming and Graphic Design Professor, 2015

UNIVERSITY OF WISCONSIN-MADISON, Madison, WI, USA

BA in English / Computer Science, 2014

6 semesters taken in French (not quite a Minor)

Study abroad in 2013-14 in France and attended Grande École Sciences-Po : Aix-en-Provence

PORTFOLIO

My software engineering portfolio can be found at <https://www.joshuamk.com/engineering>

My filmmaking portfolio can be found at <https://www.joshuamk.com/>