# Joshua Kellerman

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## EXPERIENCE

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### Senior Backend Engineer / Tech Lead – Credit Ecosystem          Dec 2024 — Present
**Credit Karma** – Charlotte, NC
- Project and Technical Lead on Credit ecosystem core backend data team, Offline data pulls
- Spearheaded Data-Driven Microservice Consolidation Effort to Simplify infrastructure
- Standardized Finagle Server Architecture across CE Services
- Ran weekly Scala sessions to up-level Junior Engineers
- Project lead with Transunion and Equifax to solve state drift issues with subset of member population
- Technology: Cloud services, GCP, Messaging Queues, Cloud application design on the Finagle framework
- RDBs, Python, Scala, Kafka, Pubsub, Memcached

### Backend Engineering Consultant          Dec 2023 — Dec 2024
**Self-Employed** – New York City, NY
- Cloud services projects, including ML / NLP, SaaS, AWS / GCP, Containerization, Orchestration, Micro-services and Monoliths, Cloud Applications, Security
- RDBs, NoSql, Python, Scala, Java, CPP, ReactJs, AWS Lambda, Kafka, SQS, Redis, Php, NodeJs / Express
- NY 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
    - User Interface (electron app) upgrade – ReactJs
    - Capture Client upgrade – C / CPP

### Health and User Experience, Senior 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
    - Currently serving Twitter's 36 million active monthly users
- 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.
    - Written in Thrift, Docker / Kubernetes (Distributed Systems), BigQuery, Cloud Run, Python, Bash, Aurora / Mesos, and Strato (in-house Lambda). Pulled data from Phabricator and Workflows
- Entire team of eight engineers let go without warning during Elon Musk bid, late July 2022.

## Senior Backend / Machine Learning Engineer                                      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 Dev and 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

<u>Natural Languages</u>
English, French (Level B2/C1), Functional Spanish

<u>Engineering and Project Management</u>
AGILE, SCRUM, Kanban, Code Reviews, Scoping, Story Points, etc.

<u>Filmmaking and Art</u>
Screenwriting, Workshopping, Script Doctor, Film Directing, Film Producing, Cinematography, 3D Animation, 2D Animation, Generative AI (Video, Audio, Images, Text)

<u>Back-End Development</u>
Functional, Reactive, and OO Programming; API Design; GraphQL; Docker; Kubernetes; CI/CD

<u>Data Pipelines, Streaming / Messaging, and Databases</u>
Hadoop, Kafka, SQS, BigQuery, SQL, Postgres, DynamoDB, MongoDB, Redis, Stitch / Spark equivalent, Elasticsearch

<u>Testing</u>
Unit, Integration, and Functional Testing Frameworks; Mocking Functions and Data Structs; Full Code Coverage

<u>Languages</u>
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/