Josh Kellerman

https://www.joshuamk.com/engineering

EXPERIENCE

Video Capture Team, Principal Backend Engineer   2022 — 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   2020 — 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 Kafka and Strato (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 Software 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 individual 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 Website Engineering consulting

Lead User Experience Engineer   2017 — 2018
Yubico – Palo Alto, CA
- 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

Web Developer (Full Stack)   2016 — 2017
Yubico – Palo Alto, CA
- Promoted within first six months after demonstrated engineering ability
- Actively served as full stack lead developer and code maintainer of Yubico's website
- Lead developer on a project to redesign Yubico's online store, resulting in major performance increases
- Served as a Lead QA for the migration of Yubico's website to a dedicated, Yubico designed hosting platform
- Lead the development of Yubico's Facebook-specific integration page during a weeklong sprint
- Tasked with scaling Yubico's online presence with server resources in preparation for anticipated spikes in load
- Designed and implemented a full-stack, secure order portal for a large Silicon Valley company

Front-End Web Developer / Designer   2015 — 2016
Yubico – Palo Alto, CA
- 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 director/editor for all Yubico created marketing video content and imagery
- 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 with custom theme

SKILLSETS

English, French, Spanish
Engineering and Project Management – AGILE, SCRUM, Kanban, Code Reviews, Scoping, Story Points, etc.
Functional, Reactive, and Object-Oriented Programming, API Design, GraphQL, Docker, Kubernetes, CI/CD
Unit, Integration, and Functional Testing Frameworks, Mocking Data and Functions: Full Code Coverage
Scala, Java, C#, CPP, Python, Typescript, GoLang, Bash, Docker, Kubernetes, Kafka, SQL, Mongo, DynamoDB, BigQuery
Scala: Finagle / Finatra, Play, Cats   Python: Flask, NumPy, Pytorch, PyTest   Javascript: Node.js, Jest, React/Redux, Express

EDUCATION

COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK, New York, NY, USA
MFA, 2019 – 2023

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, 2014
4 semesters taken in Computer Science (Algos, Data structures, Discrete maths), 5 in French
Study abroad in 2013-14 in France and attended Grande École Sciences-Po:Aix
Certified in Professional French B2/C1

PORTFOLIO

My web portfolio with video, engineering, and UX samples can be found at

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