

EXPERIENCE

- **Uber** San Francisco, CA
Senior Software Engineer, Infrastructure Security Jan 2019 - Sept 2020
 - **Botradar:** Tech lead for the infrastructure security team. Designed and shipped a Go service for abusive traffic identification and mitigation at Uber's network edge (via BGP/RTBH Envoy/NGINX). Resulted in a 94% reduction of failed logins hitting Uber's infrastructure, from ~1700 to ~100 QPS, saving the company ~\$6MM annually.
- **Uber Advanced Technologies Group** San Francisco, CA
Senior Software Engineer, Data Engineering May 2018 - Jan 2019
 - **Analytics Platform:** As a founding member of ATG's Data Engineering team, helped set the vision and direction of the group's first analytics platform. Planned and developed the original HIDL-Kafka-Parquet pipeline in Python which enabled access to autonomous vehicle log data modeled in a Hive data warehouse for the first time. Also owned all monitoring and alerting for the platform.
- **Uber** San Francisco, CA
Senior Software Engineer, Apollo / Real-time Analytics Mar 2018 - May 2018
Software Engineer II, Apollo / Real-time Analytics Nov 2015 - Mar 2018
 - **Real-time Analytics Query Gateway:** Architected and shipped a unified real-time analytics query gateway that provided a single query interface that supported several database backends (MemSQL, Pinot, and AresDB) and caches (MySQL and Cassandra).
 - **Eats Dash:** Led design and implementation of Eats Dash on Apollo: an absurdly fast, reliable, and accurate near real-time dashboard for Uber Eats business metrics. This is the most used internal tool within the Uber Eats org.
 - **Data Eng-ucation:** Ran a weekly data tech talk series. Highlighted speakers include Kostas Tzoumas, co-founder and CEO of data Artisans (creators of Apache Flink), and Jay Kreps, co-founder and CEO of Confluent (formerly lead architect for data infrastructure at LinkedIn - Kafka/Samza, Project Voldemort).
 - **Apollo Self-Service:** Tech lead for the self-service initiative which drastically reduced the necessary time to onboard new data or perform schema migrations in Apollo by an order of magnitude, from days to hours.
 - **Apollo Manager:** Wrote an ES6 React/Flux full-stack web app that provided a suite of operational tools. Some functionality included managing Apollo's batch and streaming ingestion (including a job scheduling engine for Oozie), a cross-cluster and cache data integrity tool, and an activity audit log.
- **Relcy** Mountain View, CA
Software Engineer Oct 2014 - Nov 2015
 - **Sentinel:** Developed a data validation service in Python/Flask. Sentinel would execute data quality checks against different backends (e.g. Hive, Elasticsearch) and alert if necessary. Checks can be defined on a cron schedule or triggered via an API.
 - **Entity Editor:** Delivered a Node.js web app for modifying entity data that is served to the Relcy iOS and Android apps in real-time. The editor used an open-source JSON editor as the frontend, and would save the edits as JSON patches (RFC 6902). Changes were then propagated to the corresponding documents in Elasticsearch.
- **Square** San Francisco, CA
Software Engineer, Data Engineering Aug 2013 - Aug 2014
 - **Transaction Cost ETL:** Designed and implemented the pipeline that calculates Square's incurred transaction costs on a per-payment level. This pipeline is critical for the company's financial reporting and uses Kafka, Cascading (MapReduce in Java), Hive, and Sqoop.
 - **ETL Testing Framework:** Developed a Ruby framework for testing the data warehouse's Hive ETLs with RSpec. Tests executed in parallel and generated data, ran the specified job(s), and queried to verify the result. The framework eased writing tests by generating input tables for Hive jobs that combined user specified data in Ruby with randomly generated data that conformed to certain constraints (e.g. relationships between different columns).

EDUCATION

- **Washington University in St. Louis** St. Louis, MO
Bachelor of Science in Computer Science, Finance (double major) Aug 2009 - May 2013
- **Saratoga High School** Saratoga, CA
Aug 2005 - May 2009