

KAI JIANG

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EXPERIENCE

Google, People Ranking Backend and Autocomplete Service - Sunnyvale, CA Dec 2018 - Present

Software Engineer, Ranking Backend Infra, People API layer, Frontend Autocomplete Service library

- Built a scalable and efficient people ranking serving infrastructure in C++ that executes with parallelism to streamline the entire ranking process including signal ingestion from dozens of backends, feature generation for Tensorflow model and candidates filtering. It serves millions QPS in <500 ms @ 99pct for Autocomplete services used by all Google products.
- Designed and built the largest people ranking signal indexing system that processes all email interactions from Gmail in real time and stores the aggregated feature in NoSQL DB for serving time ranking. Improved CPU, RAM usages by more than 50%, saved TBs of SSD and solved storage hotspots with an efficient computing model and spam detection. Improved data visibility with custom metrics monitoring and alerting.
- Established the ingestion framework of major Google apps interactions for people ranking in real time as ranking signals, improved candidate coverage by 20% and ranking quality by over 15% since its launch.
- Enabled realtime ranking change reflection from user logs by moving the daily MapReduce pipeline to an online Pubsub model, removed technical debt by unifying / simplifying configurations and reducing redundant transformation which results in 8x more contacts creation rate.
- Worked across backend (C++), API layer (Java), frontend system service library and client product codebase (Objective-C, Javascript) and analytics pipelines (SQL) in launching multiple Full Stack features, including chat rooms / groups ranking, unified ranking, autocomplete services migration in Gmail Web etc.
- Revamped the iOS Objective-C autocomplete service library that replaced naive linear search algorithm and in memory cache with SQLite + FTS, resulting in 50% latency improvements in autocomplete for apps like Calendar, Docs and Gmail.
- Developed SQL pipelines that derives client ranking quality metrics (e.g. CTR, click position, query length) and usage patterns e.g. DAU with HLL from logs, and integrated into dashboards and A/B testing system for people ranking use cases, e.g. Autocomplete, Smart Addressing.

LinkedIn, Flagship Search Frontend / API layer - Sunnyvale, CA Jul - Sep 2016 (*Intern*), Mar 2017 - Nov 2018

Software Engineer, Flagship iOS App, API layer, mid-tier, Backend Storage

- Built Core Search features on iOS using Swift, including typeahead, search actions, search home/history, related searches, spell check, filters with animation, skills insights snippet, QRCode connect etc.
- Initiated and built the secure QRCode scan and realtime push notification of “who scanned you” feature on iOS with WebSockets, implemented with Restful API and Kafka.
- Built Java micro-services in search, including Job Ads, Advanced Filters, Sponsored Ads, Bing Ads, Related Searches, Search History across API, mid-tier and storage layers with Kafka, and designed data schemas in NoSQL Databases (Espresso, Valdemolt).
- Built the search quality metrics including CTR, Number of Raw Searches, Average Query Length, MRR using Latin Pig based on tracking events in HDFS / Hive, and integrated into daily monitoring dashboards.

eBay, NetOps Department - Shanghai, China May 2014 - May 2015

Software Engineering Intern, Network Visualization and Management Tools

- Built an IP Address Management System with IPv4 and IPv6 support using Perl CGI, Apache web server, coined four IP status: *free*, *allocated*, *divided* and *locked* that handles concurrent IP access and IP allocation conflicts.
- Automated data synchronization from and between DB and Excel sheets for IP allocation records from Network Operations Engineer.

EDUCATION

University of California, Los Angeles, USA - USA (GPA: 3.82 / 4) *M.S. Computer Science* Sep 2015 - Dec 2016

Tongji University - Shanghai, China (GPA: 4.75 / 5.0) *B.S. Software Engineering* Sep 2011 - Jun 2015

Kettering University - Flint, USA (GPA: 3.95 / 4.0) *Excellent Undergrad Exchange Program* Sep 2013 - Mar 2014

SKILLS

- Ranking System, Database Design, gRPC, Autocomplete Service, Feature Engineering, Spanner, Monitoring / Alerting, Data Analytics, Restful API, Computer Networks, Tensorflow, TFX, Redis, MongoDB, SQLite, MySQL, iOS / Web Development, Hadoop, Flume, Kafka, Spark, Machine Learning, Data Mining
- Language: C++, Java, Python, Javascript, Objective-C, SQL, Swift, Pig, Perl, R, HTML, PHP, CSS, Scala