

RAHUL KUSHWAHA

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PROFESSIONAL EXPERIENCE

- 02/2023–Present **Staff Software Engineer, Storage, Reddit**
Worked on in-house self-serve Redis on Kubernetes $0 \rightarrow 1$, handling *multi-Million QPS*. Reduced overall caching cost by *50%*. Currently supporting *several hundred clusters* running on *thousands of nodes*.
- Implemented Kubernetes Controller to support rolling updates, configuration changes, etc, on live clusters.
 - Performance & Benchmarking.
 - Low touch migration (& parity check) of data between clusters. Migrated many-hundreds of clusters.
 - Designed and implemented a Redis Module to protect Redis via dynamically configured rate limiters.
- 11/2021–11/2022 **Staff Software Engineer, Control Plane Metadata Storage, Meta**
Worked on a low dependency metadata storage system (built & maintained in house), DelosTable, which provides a Relational Table abstraction on a highly available log with linearizability guarantees. (C++ 14, 17, 20)
- Implemented conflict free auto incrementable columns for Interactive Transactions.
 - Improved the *performance of the system by 4x* in some scenarios such as write workloads.
 - Implemented Intra-Cluster and Client-Server traffic authorization.
 - Implemented Tracing for Interactive Transactions with outlier detection (latency, error).
- 02/2017–10/2021 **Staff Software Engineer/Technical Lead, Identity, OfferUp**
Led Identity efforts across the organization. Helped create and grow Identity domain from a single service to 10+ microservices in an iterative and incremental fashion (Java, Functional, Reactive, NoSql (DynamoDb), SQL (PostGres), Redis, SQS, AWS, Dependency Injection (HK2, Guice)).
- Designed and implemented Authentication and Identity Management Services in modern reactive framework handling Login, Signup, OAuth2, JWT (creation/revocation), and their integration with routing edge services.
 - Designed and implemented Core User Services with high throughput (100K+ RPS), low latency (P99 < 10ms), and high availability (99.99) allowing storage and retrieval of user information.
 - Led efforts (design, guidelines, milestones, implementation) across the whole organization to break the monolith and migrate to new microservices with data migration. Data Set for Identity: 3 Billion + rows.
 - Designed and implemented the first version of the Authorization framework introducing RBAC at OfferUp.
 - End-to-end development of User Facing features: Profiles, Ratings, Reviews, Verifications, Social, etc.
 - Designed and implemented Multi Factor Authentication Framework using Phone Number and Email.
 - Designed and implemented Device Services to help power many scenarios (Device Detection, Fraud, etc).
 - Tuned services for performance & resource: NoSql Data Modeling, Garbage Collector (G1GC), etc.
 - Implemented the first version of the framework to restrict/prevent fraudulent actions on the platform.
 - Resolved organization-wide issues (debug, resolve, future plan of action).
 - Conducted 200+ technical interviews in the hiring process on all levels.
 - Key player in driving the technical direction of the organization and in mentorship programs to help inspire, and create opportunities for people.
- 09/2014–01/2017 **Software Engineer, Bing App-Linking & Task Completion, Microsoft**
Bing Search App on IOS
- Built App DeepLinks Index with billions of urls.
 - Mined information (MS Proprietary MapReduce Framework) from Index to improve Knowledge Graph.
 - Built Index for App Metadata: IOS & Windows Apps. Setup pipelines to consume data from multiple sources for data coverage and freshness.
 - Set up pipelines for serving Images (Crawl->Save->Compress->Serve).
- Windows App Search and Bot Search on Bing.com/Windows 10 Desktop**
- Set up pipelines to build/refresh the data repository and built the backend for serving the data on Bing.com.
- 01/2013–09/2014 **Graduate Assistant, Office of Vice Chancellor, University of Illinois at Chicago**
- Designed and implemented an Intranet on ASP.NET/SharePoint 2010.
- 06/2013-08/2013 **Software Developer Intern, Bloomberg LP, New York**
- Feed Replayer & Simulator (C/C++): A multi-threaded task that replays the stock market Buy/Sell and Trade events for multiple securities at off-market times for Algorithm testing & debugging.
 - Revamped a Bloomberg Function which displays various Stock Exchange Information.
- 11/2010-07/2012 **Senior Software Engineer, Nagarro Software Private Limited, NCR, India**
- Built a large scale Enterprise Intranet on ASP.NET/SharePoint 2010 with cross-browser and mobile support.

EDUCATION

- 2012-2014 **University of Illinois at Chicago, Computer Science** Master of Science, August 2014, GPA 3.71
Thesis: Large Knowledge Bases and Networks: Results on Analogies and Betweenness Centrality.
- 2006–2010 **Career Institute of Technology & Management, Computer Science, India,** Bachelor of Engineering