# Danish Rehman

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San Francisco, California

## Professional Experience

Staff Software Engineer                                                                                      San Francisco, CA
Founding member, Aspire (Python, Typescript, NodeJS, PostgreSQL, Redis)                 2018 – 2023

- Joined as the third founding engineer and helped scale the engineering team from 3 to 30 members.

- Architected and implemented the **messaging microservice** facilitating communication for multiple brand users. This service integrated with Gmail, Outlook, and Instagram DM, processing over **millions of messages** daily while maintaining a **99.99% reliability rate**.

- Led the development of a **workflow microservice** which orchestrated and streamlined campaign-critical tasks, helped scale the number of **campaigns 10 fold** and reduced campaign **completion time by 30%**.

- Designed and implemented an **automation-as-a-Service platform**, streamlining custom workflows which reduced **manual interventions by 60%** when collaborating with a creator in a campaign. **Worked closely across teams** to identify and automate key touchpoints.

- Implemented the **shared message inbox** capability in the messaging product which allowed multiple users to access and manage a common email address. This helped the brand delegate and work at scale, resulting in a significant uptick in the volume of communication and ensuring a **50% faster response time**.

- Established a **culture of observability** using Datadog APM throughout the engineering organization. Set and enforced SLOs for every API, ensuring consistent SLA compliance. This led to a reduction in P1 bug resolution time from **10 days to 3 days**.

Senior Software Engineer                                                                                              Palo Alto, CA
Adserv, Criteo (Python, DynamoDB, Cassandra, AWS S3)                                             2016 – 2018

- Achieved annual **cost savings of $2 million** by meticulously planning and executing a 12-month migration of a recently acquired company's infrastructure serving *100K QPS* from  **AWS to proprietary data centers**. Maintaining the **high availability of 99.999%** when migrating live traffic.

- Architected and implemented a **reporting platform** tailored for time-sensitive data, achieving **high-throughput of 40K QPS**. Implemented using worker nodes that execute data rollup tasks and persist results in Cassandra which is later consumed by the reporting service.

Software Engineer                                                                                              San Francisco, CA
User mapping system, Brightroll (C, AeroSpike)                                                        2015 – 2016

- Engineered an in-memory, lock-free data structure (Urcu - linux lock-free data structure) for the **user mapping system**—a platform that aligns user identifiers across various systems. This enhancement achieved a **500% reduction in datastore load**.

- Designed and implemented a **cookie-matching server**, adept at synchronizing user identifiers across ad platforms, managing a **60K QPS**. This server streamlines targeted advertising by bridging communication gaps in the ad tech ecosystem.

- Designed a **modular rate-limiting solution** utilizing the token bucket algorithm, enabling granular rate-limiting per partner, per thread. Achieved efficient **rate-limiting performance at 10K QPS**.

Software Engineer                                                                                                      Bangalore, India
Optimization, Goibibo (Python, Memcached, PostgreSQL)                                           2010 – 2013

- Engineered an **adaptive expiry algorithm for Memcached**, enhancing cached data management and propelling the **hit rate from 28% to 58%**.

- Developed a **MongoDB-driven monitoring system** for critical logs, designed to issue real-time alerts, resulting in the resolution of **80% of critical logs within the initial hour**.

- Integrated **Pybloomfilter** to optimize API interactions with external vendors, successfully reducing external **API calls by 50%**.

## Programming Languages, Frameworks and Tools

**Programming Languages:**  Python, NodeJS, Typescript, React, C

**Databases:**  PostgreSQL, Redis, DynamoDB, Google Cloud Task, Google DataStore, Google PubSub

**Cloud platforms:**  GCP, AWS

## Education

Masters in Computer Science                                          2013 - 2015
  University Of Southern California, USA

B. Tech in Information Technology                                 2005 - 2009
  NIT Allahabad, Allahabad, India