MOHAK CHUGH
Software Engineer at Amazon

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Work Experience

Amazon
Software Engineer & Data Engineer
Gurugram, Haryana, India · Hybrid
09/2021 - Present

· Developed **Spark based Big Data reconciliation engine** with multiple data source support **reconciling 1 billion+ records daily**. Provides capabilities to reconcile between SQL and No-SQL data sources with custom hooks for integration with data pipelines. This solution **reconciles 100% of internal financial data** flowing through a central data lake.

· Led the creation of an **award-winning RAG-based LLM QnA bot**, engaging 300+ users and **processing 5K questions daily**; leveraged advanced prompting techniques and guardrails, **resulting in 90% accuracy** from rich text documents.

· Engineered AI-driven headcount management tools by **leveraging 100+ work driver** datasets, enabling precise ML models for scalable headcount predictions; boosted operational efficiency by forecasting resource allocation with **95% accuracy**. Integrated functionalities like **email notification systems, auth management and ML data pipeline orchestration using Airflow.**

· Launched e-invoicing compliance for Amazon by enabling VAT IDs **encryption** for **Brexit, AU, CA regions, impacting 3,000+ global vendors**.

· Collaborated with senior data engineering teams on a **re-architecture** of our financial analytical mesh data-lake with database consolidation, **automating schema-level data sharing across Redshift clusters**. Designed and developed to ensuring SLAs of 1 sec is met. Authored with **90% test coverage.** Deployed efficient, secure solution, enhancing org productivity with security reviews for critical data storage.

· Mentored **3 interns and got 2 converted** to full time engineers.

- **LLM ClaudeV2.1, AWS cloud, Streamlit, Airflow, Redshift, AWS EMR (spark), AWS Serverless, CI-CD pipelines, AWS Big Data**

Omnipresent Robot Tech
Full Stack + DevOps Intern
New Delhi, Delhi, India
05/2020 - 08/2020

· Led the development of a real time surveillance solution using live streaming drone video on progressive web application. The solutions provide instantaneous video **stream buffers with 100ms latency**. The solution is currently deployed for security projects in **Aditiya Birla Group and JK Cement**.

· The video streaming platform provides 7 features, including scheduling video streams, email and SMS notifications, admin mode, messaging and chat, flight report generation and user- level authorization

- **Angular 8, NodeJS, GraphQL & GCP**

Chief Minister Office, Government of NCT of Delhi
Node JS backend Intern
RCS Govt office, New Delhi
06/2019 - 08/2019

· Designed backend for the **Mohalla Sabha Project,** under Advisor to the CM, Sir Gopal Mohan, Delhi Government. Worked on Managed Databases and revamped the backend API design and data model. Created deployment strategy for the backend on AWS. Authored the Backend Development, collaborated with the Mohalla Clinic and Mohalla Sabha stakeholders, covering **10% of Delhi Constituencies**

- **Built SMS and Email API, file storage using GraphQL, AWS (S3, EC2), Firebase and PostGIS**

Education

Maharaja Surajmal Institute of Technology
· Bachelor of Technology - Computer Science | 8.7 | University Rank 3 in Final year
08/2017 - 12/2021

Publications

Benchmarking geospatial database on Kubernetes cluster
— Analysis and Optimizations of PostgreSQL/PostGIS in Kubernetes for improved geospatial query performance.

Languages and Skills

Work Domains:	AWS Cloud (**Development** and **Deployment** for **Serverless** and Server based solutions),
	Applied Artificial Intelligence - **LLM RAG** Architecture and Natural Language Processing (**NLP**),
	Big Data (Analytical and Transactional) and Advanced System Design on AWS
Languages:	Python, Java, NodeJS, Angular, **Advanced SQL**
Tools and Technologies:	API Development, Distributed Systems (**Spark**) and Data pipeline management via **Airflow**, Data Structures and Algorithms

Projects

DroneDash
https://mohakchugh.github.io/website/#/dronedash
· An Online Web Interface for surveillance in large scale construction sites. Supports up to 8 livestreams at once. Currently being used by Aditya Birla Group.

ContentCollab
https://mohakchugh.github.io/website/#/blogger
· A real-time online document editor that allows a group of users to collaborate on webpage contents, see and make changes in real-time.

Achievements

1st Runner's up in Digital India Makeathon
· Certificate Link: https://drive.google.com/file/d/1YEMPcosx8COkOxqFn3vXHiugsIIhkZMX/view

Soft Skills Certification from AICTE
· Certificate Link: https://drive.google.com/file/d/1aBjeD3gCGHphhdfNAyZrXADcOZyBjLQ-/view

University Rank 3 in BTech Final year
· Certificate Link: https://www.linkedin.com/feed/update/urn:li:activity:7055093560970256384/