

Rahul Prajapat

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SUMMARY

Experienced in building scalable systems, platform tooling, and automation frameworks. Thrive on solving deep technical problems and designing reliable infrastructure across domains.

TECHNICAL SKILLS

Languages: Go, TypeScript, C++, Python, SQL, Bash, Java

Frameworks / Tools: React, GraphQL, Protobuf, gRPC, Cadence, Docker, Git, LangChain, LangGraph, Jupyter

Infra / Datastores: Neo4j, Postgres, Redis, MySQL, Kafka

WORK EXPERIENCE

Uber India Systems

Jan 2025 – Present

Software Engineer II

- Designed a **Config Knowledge Graph** in **Neo4j** to support complex market validations and configuration impact analysis.
- Enabled the **Knowledge Graph as a secondary config store** via Kafka-based ingestion and domain-wise segregation.
- Built **Cadence workflows** and cron pipelines to bootstrap the knowledge graph from distributed offline config sources.
- Prototyped an **AI assistant** using **LangGraph** and explainability APIs to automate root-cause analysis of access issues.

Uber India Systems

Jun 2023 – Dec 2024

Software Engineer I

- **Led adoption of workflow-driven config management**, bringing code-like rigor to market-facing configuration changes.
- **Designed a unified validation and testing platform**, enabling safe and reliable rollouts via pre-deployment gates.
- Consolidated fragmented tools into a unified config management suite, improving operational efficiency & reliability.
- Acted as point of contact for config workflows, enabling cross-team adoption and mentoring engineers on shared infra.
- **Collaborated with ops teams and managed incidents**, reducing investigation time and improving system reliability.

Uber India Systems, Maps

Summer 2022

Software Engineering Intern

- Automated freshness status detection for business places using trip data and internal metadata.
- Built ML prototypes and recommended production pipelines using engineered features and model scoring heuristics.

RESEARCH EXPERIENCE

Persistent Masstree on PMem

Jun – Sep 2021

Prof. Willy Zwaenepoel, Univ. of Sydney (Remote)

- Built **first concurrent, persistent Masstree** with **lock-free sync** and low-overhead crash recovery via versioning.
- Implemented **fine-grained versioning** and **granular locking** to ensure consistency and high parallelism under load.

Skewed Merkle Trees

Nov 2022 – Feb 2023

Dr. Baptiste Lepers, Univ. of Neuchâtel

- Optimized **Merkle validation** via skewed transactions; ensured **rollback safety** across **blockchain** protocols.

File System Metadata Snapshots

Summer 2021

Prof. Rushikesh Joshi, IIT Bombay

- Implemented snapshotting for ext4 and vfat filesystems and designed a shell interface for metadata time-travel.

EDUCATION

Indian Institute of Technology Bombay

Jul 2019 – May 2023

B.Tech in Computer Science and Engineering *CPI: 8.87/10*

SELECTED ACADEMIC PROJECTS

xv6 Enhancements – Added spinlocks, condition variables, CoW, lazy paging, and semaphores.

Cache Management Simulator – Implemented adaptive cache insertion and replacement based on PACMan/MadCache.

SCLP Compiler – Built a compiler with AST, TAC generation, and semantic checks using Lex and Yacc.

16-bit Multi-cycle RISC CPU – Simulated datapath, control FSM, and 15-op ISA on Quartus.

Video Denoising via Matrix Completion – Temporal-spatial patching with nuclear norm minimization.

Quadrees for Image Ops – Hierarchical storage and manipulation of monochrome bitmap images.

ACHIEVEMENTS

- AIR 302 in JEE Advanced, AIR 360 in JEE Main (Top 0.03%).
- KVPY Fellow awarded by Indian Institute of Science.