

Karan Jadhav

Senior Backend Engineer | Distributed Systems | Data Platforms

Navi Mumbai, India / karan@jadhav.dev / github.com/karan-jadhav / linkedin.com/in/jadhav-karan / jadhav.dev

Summary

Built and operated production distributed data systems handling 2.3B+ records and 1.8 TB+ datasets. Owned backend architecture, API design, distributed processing, database performance, and AWS infrastructure for a climate risk platform serving enterprise customers across 10+ countries. Focused on performance optimization, scalability, and production reliability.

Core Expertise

- Distributed Systems & Async Processing: RabbitMQ, Dask, event-driven architecture, retries, and background job orchestration.
- Data Infrastructure: PostgreSQL, PostGIS, large-scale ingestion pipelines, indexing, and high-volume query design.
- Performance Optimization: query tuning, caching, latency reduction, and throughput improvements.
- Backend Systems: FastAPI, Django, REST APIs, and asynchronous services.
- Cloud & Infrastructure: AWS, Docker, CI/CD, observability, and production operations.

Experience

Software Engineer - Intensel Ltd | 2021 - Present

- Owned backend architecture and data infrastructure for a production climate risk platform serving enterprise customers across 10+ countries.
- Designed and operated distributed job pipelines processing 50K+ background jobs per day using RabbitMQ and Dask.
- Built fault-tolerant execution systems with retries, scheduling, and async workers.
- Developed ingestion pipelines for multi-terabyte geospatial datasets.
- Engineered systems supporting 2.3B+ geospatial records across 1.8 TB of indexed data.
- Reduced critical query latency from minutes to single-digit milliseconds through indexing and query optimization.
- Designed schema, spatial indexing, and query strategies using PostgreSQL and PostGIS.
- Built high-performance REST APIs using FastAPI and Django with p99 latency under 200ms under load.
- Implemented cache-aside and selective invalidation strategies to reduce database load.
- Managed AWS infrastructure across EC2, S3, RDS, SQS, Lambda, and CloudWatch.
- Built CI/CD pipelines and observability systems, reducing deployment time by 60%.
- Implemented structured logging and monitoring for production reliability.

Projects

Global Building Footprints

- Built ingestion and query infrastructure for 2.3B+ building records.
- Enabled sub-second analytics workflows for enterprise use cases.

Map Tile Service

- Designed scalable backend for geospatial raster delivery serving 5.3 TB of data.
- Improved throughput and latency through caching and performance tuning.

Open Source

RediServe | Rust, Axum, Tokio

- Built an async HTTP API for Redis with connection pooling.
- Focused on low-latency performance and efficient request handling.

Technical Skills

Languages: Python, Rust, Go, JavaScript, TypeScript, SQL

Backend: FastAPI, Django, async systems, REST APIs

Databases: PostgreSQL, PostGIS, Redis, DuckDB, AWS S3

Infrastructure: AWS, Docker, Linux, CI/CD

Systems: Distributed systems, caching, message queues, scalability, observability

Education

Bachelor of Computer Science - University of Mumbai | 2020