

Saurabh Kumar

Backend Software Engineer

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SUMMARY

Experienced in designing and owning scalable APIs, event-driven microservices, and distributed systems, with a strong focus on system design, production reliability, and end-to-end service ownership.

TECHNICAL SKILLS

- **Languages & Frameworks:** Python, Django, FastAPI, Flask, Node.js, SQL
- **Backend & Architecture:** Microservices, Event-Driven Systems, Serverless, REST APIs, Docker
- **Messaging & AWS Services:** AWS SQS, AWS Step Functions, AWS Lambda, ECS, S3, Kafka-based CDC Event Consumption
- **Databases:** PostgreSQL, MySQL, MongoDB, Redis

EXPERIENCE

Spyne

Nov 2024 – Present

Software Development Engineer

- Designed and built a serverless orchestration system for 3D vehicle reconstruction using AWS Step Functions, SQS, Lambda, and S3. Implemented retry handling, failure tracking, and dead-letter queues to safely process jobs lasting up to 45 minutes, supporting 500+ production jobs daily.
- **Reduced SLA breaches by approximately 70%** by implementing weighted round-robin scheduling and fair GPU allocation across image-processing workloads. Ensured every client received processing opportunities, preventing lower-priority client images from waiting indefinitely during high-priority traffic. Added demand-based GPU provisioning to reduce queue backlogs and idle compute costs.
- **Reduced media ingestion processing time by 40%** by concurrently migrating expiry-prone, client-hosted media URLs to internal S3 URLs. Added per-URL retries, graceful fallbacks, and fault-tolerant downstream handling, achieving a **99.6% successful conversion rate** across high-volume workloads.
- Developed a MediaKit service for asynchronous application of client-specific banners, billboards, and watermarks to processed images. Implemented configurable overlay rules, persistent settings, and serving APIs for placement-based customization across image sequences.
- Built an event-driven data ingestion and reporting pipeline using Kafka CDC consumers to aggregate workflow data from MongoDB collections and relational tables into dashboard-ready tables, enabling visibility into processing status, SLA breaches, delivery updates, and failures.

Innovaccer

Jun 2023 – Nov 2024

Software Development Engineer

- Contributed to the Snowflake migration of Innovaccer's DAP platform by converting ingestion queries and ETL workflows from MySQL to Snowflake for three data services. Validated large historical datasets before cutover, contributing to an **30% reduction in analytical query costs** for 50+ enterprise clients.
- Upgraded six production microservices from Python 3.8 to Python 3.11 by resolving dependency and asynchronous compatibility issues, validating critical service flows, and deploying changes in phases with rollback support. Improved runtime performance and removed end-of-life security risks without user impact.

Analytics Vidhya

Sep 2021 – Jun 2023

Software Development Engineer

- **Reduced junk leads by 70% and improved signup conversion by 35%** by building an OTP verification microservice for new-user signups. Integrated an SMS provider, rate limiting, retry logic, and verification-attempt limits.
- Developed backend services for a Tournament Portal supporting hiring contests and hackathons. Built REST APIs for contest creation, user registration, live participation, scoring, candidate-session management, and third-party proctoring integrations.
- Built a real-time LeadSquared CRM integration for centralized lead capture across multiple platforms. Designed ingestion APIs and an asynchronous queue-based pipeline with retries, DLQ-based failure handling, and idempotent processing to prevent duplicate leads.

EDUCATION

2017 – 2021

Bachelor of Technology in Computer Science & Engineering