SAURABH MISHRA

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TARGET ROLE: SOFTWARE ENGINEER (BACKEND / DISTRIBUTED SYSTEMS / PLATFORM ENGINEERING

Backend Software Engineer with 3+ years of experience (including internships) specializing in SDK development and backend optimization using Java and Golang for large-scale, cloud-native platforms.

Proven track record of delivering performance-critical enhancements to Couchbase Java and .NET SDKs, with deep expertise in network heuristics, connection management, and concurrency optimization, enabling sustained throughput of ~10K operations per second with zero failures in distributed environments. **Promoted to Software Engineer II at Couchbase for high-impact contributions to SDK performance, observability, and scalability.**

Experienced in integrating advanced capabilities such as Vector Search to support AI/ML workloads and Application Telemetry to improve observability and diagnostics. Brings strong systems-thinking to backend engineering, including logistics optimization solutions that achieved a ~50% reduction in operational travel through intelligent routing. Recognized for strengthening test infrastructure, resolving complex performance issues, and driving measurable reliability and scalability improvements in enterprise systems.

CORE SKILLS

Functional Skills: Backend System Design | Distributed Systems | SDK Development | Performance Optimization | Concurrency & Multithreading | Event-Driven Architecture | API Design | Observability & Diagnostics | Reliability Engineering | Test Automation | Production Debugging | Cross-Functional Collaboration

Soft Skills: Problem-Solving, Documentation, Collaboration, Continuous Learning

TECHNICAL SKILLS

Languages: Java, Go, .NET, Python, C++, Rust
Framework: Entity, Spring Boot, Gin, gRPC, Reactive Java, RabbitMQ
Software design: OOD, LLD, HLD, Microservices, Distributed systems, Event-Driven Architecture, Concurrency
Databases: Postgres, MongoDB, Redis, Couchbase, MySQL
Tools: AWS, Azure, Docker, Kubernetes, GHA, GIT, Maven, Jenkins

WORK EXPERIENCE

COUCHBASE, Bangalore— Software Engineer II | Aug 2022 – Present

Delivered multiple **customer-facing, performance-critical enhancements** to Couchbase **Java and .NET SDKs**, improving scalability, observability, and reliability for distributed, cloud-native deployments.

- **Improved high-throughput reliability under private endpoint deployments** by redesigning SDK network heuristics and connection resolution logic. This resolved customer escalations where SDK operations were timing out under heavy load across Kubernetes and multi-cloud environments, enabling sustained throughput of **~10,000 operations per second with zero failures**.
- **Designed and implemented Application Telemetry**, enabling SDKs to collect runtime metrics and publish them to the server, significantly improving **observability, diagnostics, and performance analysis** for enterprise customers.
- **Integrated Vector Search capabilities into Couchbase SDKs**, allowing users to perform efficient similarity searches directly from client applications and expanding support for modern AI/ML-driven workloads.
- **Developed Zone-Aware Replica functionality**, improving data locality and reducing read latency by intelligently routing requests based on zone awareness in distributed deployments.
- **Introduced Endpoint Events publishing**, exposing DNS resolution, connection establishment, and node connectivity events to help operators debug complex networking issues in production.
- **Resolved critical SDK performance defects** during cluster rebalancing by fixing memory leaks and incorrect node targeting, leading to improved KV latency and overall SDK throughput.

- **Migrated SDK build infrastructure** from separate JVM and Mono versioning to a unified versioning scheme, simplifying releases and reducing long-term maintenance overhead.
- **Strengthened SDK test infrastructure** by enhancing internal frameworks and adding gRPC-based sanity and integration test suites, enabling end-to-end validation under high concurrency and network stress.
- Built a **custom proxy layer** between SDK and server to intercept, manipulate, and replay requests/responses, enabling advanced failure simulation and resilience testing.
- **Improved SDK performance, scalability, and operational reliability** through optimized threading, memory management, and event-driven design, eliminating OOM issues and reducing customer escalations.

ORANGE HEALTH, Bangalore— Software Engineer | Jun 2022 – Aug 2022

Worked on backend systems for logistics optimization, focusing on scalability, routing intelligence, and real-time operations.

- **Reduced total distance travelled by field emedics by ~50%** by integrating Google Maps APIs and implementing distance-based route optimization algorithms, grouping geographically close pickups into efficient routes.
- **Designed and implemented backend APIs** to support real-time logistics operations, enabling better visibility and coordination across stakeholders.
- **Performed performance tuning and debugging** to ensure reliability under operational load, supporting the rapid growth of logistics workflows.

Instaastro, Noida-Software Engineer Intern | Feb 2022 - June 2022

- **Designed and developed** robust backend APIs supporting core features for web and mobile applications.
- Collaborated closely with frontend engineers and product managers **to translate business requirements into scalable backend solutions.**

PROJECTS

Microservices-Based E-Commerce Platform

Tech Stack: .NET, MongoDB, PostgreSQL, Redis, gRPC, RabbitMQ, Docker, Kubernetes, Azure, Angular

- Architected and built an **end-to-end microservices-based e-commerce platform** with independent services for user management, catalogue, orders, payments, discounts, and checkout.
- Applied **Clean Architecture and CQRS**, enabling independent scaling of read/write workloads for improved performance and resilience.
- Implemented **event-driven workflows using RabbitMQ** following the Saga pattern to manage distributed transactions across payment and order services.
- Enabled **real-time discount application** via gRPC communication and Redis-backed basket management.
- Deployed services on **Kubernetes** for high availability and scalability, with Docker Compose for local development.
- Implemented **API Gateway (Ocelot)**, centralized logging using Elasticsearch and Kibana, and delivered a responsive Angular frontend.

Splitwise-Style Expense Sharing Application

Tech Stack: Python, Django, MySQL, JWT

- Built a bill-splitting application that minimizes settlements while preserving total balances.
- Implemented **JWT-based authentication** and full CRUD workflows.
- Applied a Maximum Flow algorithm to reduce the number of required transactions between users.

EDUCATION

B.Tech., Information Technology, ABES Engineering College, Ghaziabad | 2018 – 2022

Senior Secondary (Science), MPVM, Allahabad | 2015 – 2017

ACHIEVEMENTS

- Ranked 663rd globally among 25,000+ participants in a Codeforces contest.
- Finalist at TechGig Code Gladiators 2021.
- Secured 1st place in Turing Test 6 coding competition (300+ teams).
- Solved 2000+ algorithm and data structure problems across competitive programming platforms

VOLUNTEERING

Django Developer Intern — Shiksha Sopan, IIT Kanpur | Apr 2022 – May 2022