SAGAR CHOUDHARY

Technical Lead Developer • Backend & Real-Time Systems • IoT & Infrastructure

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PROFESSIONAL SUMMARY

Technical Lead Developer with 3+ years of end-to-end ownership across backend APIs, mobile apps, real-time data pipelines, IoT systems, and production infrastructure — all within a single product company serving Maharashtra government clients. Stepped into sole technical leadership after senior engineers exited, independently designing system architecture, introducing Redis caching, Kafka queuing, and Docker containerisation from scratch, and leading a team of 10+ developers. Comfortable across the full delivery lifecycle: greenfield development, legacy modernisation, database engineering, and production deployments. Looking to bring this breadth into a structured engineering environment with stronger mentorship and higher-scale problems.

TECHNICAL SKILLS

Backend: Java, Spring Boot, REST APIs, WebSockets, SSE, Redis Pub/Sub, Apache Kafka, JWT

Mobile & Frontend: Flutter (Bloc, Provider), Dart, React, Next.js, JavaScript, HTML5/CSS3

Databases: PostgreSQL (indexing, tsvector FTS, triggers, partitioning, functions, TimescaleDB), MySQL, Redis, SQLite

Infrastructure & DevOps: Docker, Nginx (reverse proxy, load balancing), GCP (Maps APIs), Git, ClickUp, load testing (Locust, custom Python harness)

IoT & Embedded: Raspberry Pi, Python (Kivy, serial, OTA), RTD/IR/GPS sensors, STM32 serial, Device Tree overlays

Payments & Reporting: Juspay, HDFC Payment Gateway, JasperReports

PROFESSIONAL EXPERIENCE

Technical Lead Developer · Vasundhara IT Pvt. Ltd., Pune · *Jul 2023 – Present*

- **Sole technical decision-maker:** After senior engineers exited, independently owned system architecture, infrastructure choices, and production deployments across all active projects — with no senior oversight.
- **Introduced modern tooling from scratch:** Brought Redis caching, Apache Kafka message queuing, and Docker containerisation into a company that had none, reducing API response times to under 100 ms and enabling reliable async data pipelines.
- **Real-time infrastructure:** Designed and implemented Redis Pub/Sub + WebSocket + SSE pipelines for live industrial SCADA dashboards, achieving sub-second data delivery from IoT sensors to browser clients.
- **Database engineering:** Designed and tuned PostgreSQL schemas using GIN-indexed tsvector full-text search, cross-table triggers, table partitioning, stored functions, and introduced TimescaleDB for time-series sensor data.
- **Payment integration:** Built a complete payment processing module for E-LAB — HDFC gateway API bridge, role-based access for Engineers, Contractors, and DMs, and a live collection dashboard (hourly/daily/monthly/yearly). System processes daily government payments in production.
- **Team leadership:** Led and mentored a team of 10+ developers across all active projects. Introduced ClickUp as a project management tool, defined task workflows, agile methods, and served as the primary code reviewer and technical guide.
- **Load testing:** Built custom Python load testing harnesses and used Locust to validate backend throughput — confirmed VM Track backend sustains ~1 lakh+ (100,000) requests/second under peak simulation.
- **Full delivery ownership:** Managed end-to-end releases across Android (Play Store), iOS (App Store), and web — including Spring Boot, Node.js, React, and Next.js apps behind Nginx reverse proxy and load balancing.

Trainee Mobile Developer · Vasundhara IT Pvt. Ltd., Pune · *Jan 2023 – Jun 2023*

- Developed Flutter-based iOS prototypes and contributed to live Android projects.
- Gained foundational exposure to Spring MVC, GCP integrations, and production mobile release pipelines.

KEY PROJECTS

VM Track – Vehicle & Machinery Tracking Platform | *Flutter, React, Spring Boot(WebFlux), SSE, PostgreSQL, Google Maps, Kafka, Redis*

- **Scale:** Backend load-tested and validated at ~1 lakh (100,000) requests/second using a custom Python simulator and Locust.
- Independently designed and built the complete system — Flutter mobile app, React web app, Spring Boot REST API, and PostgreSQL schema — from scratch.
- Implemented real-time GPS coordinate ingestion pipeline with Kafka & Redis caching for high-frequency writes; built live fleet monitoring and historical reporting.
- Simulated Teltonika FMB920 GPS device using Codec 8 protocol in Python for full end-to-end testing without hardware.

SCADA India – Industrial Monitoring System | *Flutter, Spring Boot, PostgreSQL, Redis, WebSockets, SSE, TimescaleDB, JasperReports*

- **Scale:** 1,500+ active users across government clients; real-time sensor data from plant and work locations stored and displayed live with sub-second latency.
- Architected the full platform solo — mobile app, backend, database, and real-time data distribution layer.
- Introduced TimescaleDB for time-series sensor data and Redis Pub/Sub for live SCADA dashboard updates — significantly reducing missed sensor readings and dashboard lag.
- Implemented offline-first data sync, multi-language support, and automated JasperReports-based business intelligence reports.

E-LAB – Material Testing & Invoice Management System | *Flutter, Spring Boot, PostgreSQL, HDFC Gateway, JasperReports*

- Built the entire platform solo: Flutter app, Spring Boot API, PostgreSQL schema, and HDFC payment gateway integration.
- Designed complex role-based authorization (Engineers, Contractors, District Managers) with audit trails for government laboratory operations.
- **Impact:** System processes real daily payment transactions from government clients; built a live collection analytics dashboard (hourly/daily/monthly/yearly) used by supervisors.

Plant SCADA – IoT Sensor Data Processing | *Python, Kivy, Raspberry Pi 5, STM32, RTD PT-100, GPS*

- Built Linux desktop applications on Raspberry Pi for processing RTD, IR, and GPS sensor data with an OTA (over-the-air) update system via Google Drive.
- Developed an auto-calibration system for RTD PT-100 sensors using live weather API as temperature reference.

Real-Time Data Distribution Services | *Spring Boot, Redis Pub/Sub, Kafka, WebSockets, SSE, Docker*

- Designed event-driven backend for SCADA data distribution — Redis Pub/Sub fan-out to WebSocket/SSE clients with Kafka as a durable message queue for high-frequency sensor streams.
- Added Redis health monitoring with a local retry queue, ensuring zero data loss during Redis downtime windows.

MySQL → PostgreSQL Migration Tool | *Python — open source, github.com/sagarc-dev/mysql-to-postgres-migration*

- Built a production-grade migration utility with snake_case normalisation, tinyint(1)→BOOLEAN coercion, copy_expert bulk inserts with INSERT fallback, sequence reset, FK migration, and structured logging.

EDUCATION

Master of Computer Applications (MCA) · North Maharashtra University, Jalgaon · *2023*

Bachelor of Commerce & Computer Applications (BCCA) · G. H. Raisoni CCST, Nagpur · *2021*

LANGUAGES

English (Fluent) • **Hindi** (Fluent) • **Marathi** (Native)