SHUBHANG VAGVALA

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Summary

U.S. Citizen − Authorized to work in the U.S. without sponsorship.

Software engineer with experience building and operating backend services and data-intensive applications at scale. Worked across production systems involving inventory, pricing, and search, with a focus on correctness, performance, and operational reliability. Comfortable designing backend workflows, asynchronous processing, and large-scale data handling, with exposure to performance evaluation and optimization in complex software systems.

Experience

MediBuddy   *Jun 2022 − Dec 2023*
Software Engineer   Bengaluru, India

- Improved address accuracy for fulfillment by building a geo-normalized, map-backed model using **Java**, **Spring Boot**, **Google Maps APIs**, **MySQL** and **Redis**, increasing first-attempt success by **20%** and reducing support tickets by **25%**.
- Optimized **Elasticsearch** inverted-index queries to surface substitutes for unavailable items; instrumented discovery events into an ML-ready pipeline with **99%+ T+1 availability**, reducing search drop-offs by **15%**.
- Strengthened platform reliability by enforcing timeout budgets, retry backoff and idempotency with async offloading and caching; reduced peak-time API failures by **25%** and cut production incidents by **15%** across the core platform.
- Rebuilt the order management platform to unify Medicines delivery, Lab collection and in-center bookings by designing a **canonical order-state machine** and backend aggregation with cursor-based pagination; enabled **status-driven React UI**, cut p95 latency by **90%**, improved vendor sync to **98%**, and reduced cancellations and support load by **25%**.

Swiggy   *Jun 2021 − May 2022*
Software Engineer Intern   Bengaluru, India

- Validated the Inventory Master Service after major changes by writing unit and integration tests for **Kafka** consumers, **gRPC** endpoints, and **HTTP** APIs using an in-house **Go** framework; fixed issues and improved code coverage by **15%**.
- Supported on-call engineers during year-end festive peak traffic by monitoring inventory and pricing systems, reviewing dashboards and logs, and assisting with operational checks to ensure smooth handling of high order volumes.
- Built a scheduled nightly ETL cron job in **Python** to refresh inventory-driven pricing data across stores nationwide, processing **millions of records per run** using CDC replicas, **Databricks**, **Hive**, and **Kafka**; improved pricing correctness and reduced price-escalation incidents by **10%** on a platform with **13M+ DAU**.
- Built **Grafana** dashboards for services and pipelines I worked on, creating panels for API request volume and latency, error rates, producer/consumer health, and batch job execution metrics to improve observability and support monitoring.

Education

University of Massachusetts Amherst   *Feb 2024 − May 2025*
M.S. in Computer Science, GPA: 3.97
Coursework: Distributed Operating Systems, Software Engineering, Advanced Algorithms, Systems in Data Science

Birla Institute of Technology and Science Pilani   *Aug 2018 − May 2022*
B.E. in Electronics and Communication Engineering, GPA: 3.61
Coursework: Object-Oriented Programming, Data Structures and Algorithms, Microprocessors, Computational Logic

Technical Skills

Programming Languages: Java, Python, Go, TypeScript, JavaScript, SQL, Bash, Kotlin.
Backend Development: Spring Boot, REST APIs, gRPC, GraphQL, Node.js, Express.js, FastAPI, Flask.
Frontend Development: React, Next.js, Redux, Axios, HTML/CSS, Swagger/OpenAPI, JWT.
Databases and Caching: PostgreSQL, MySQL, MongoDB, Redis, DynamoDB, Elasticsearch, SQLite.
Data Engineering: ETL pipelines, Apache Kafka, Apache Spark, Databricks, Apache Hive, RabbitMQ.
DevOps & Cloud: Docker, Git, Jenkins, Maven, Gradle, EC2, S3, Lambda, IAM, CloudWatch, CI/CD, Kubernetes.
Testing and Automation: JUnit, Mockito, Jest, React Testing Library, Playwright, Jenkins, GitHub Actions.
Practices & Miscellaneous: Agile/Scrum, SDLC, Grafana, Kibana, Test-Driven Development, SOLID, Postman.

Projects

Optimizing Streaming Data Processing with Apache Flink

Designed and evaluated a **work-stealing scheduler** for **distributed stream processing** in **Apache Flink** to address load imbalance and data skew; processed **61M+ NYC For-Hire Vehicle events**, implemented dynamic task redistribution, and benchmarked against Flink's default scheduler with gains in runtime, throughput, and CPU efficiency.

College Alumni Networking and Mentorship Platform

Designed and built a backend-driven mentorship scheduling platform using **TypeScript** and **Node.js**, implementing **JWT**-based authentication and **Redis**-backed asynchronous job queues for session scheduling and notifications; deployed containerized services on **AWS**, supporting **600+** mentor−mentee sessions while reducing manual coordination overhead.