

SHUBHANG VAGVALA

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WORK AUTHORIZATION

US Citizenship - No Sponsorship Required

EDUCATION

University of Massachusetts Amherst

Master of Science in Computer Science, GPA: 3.97

Coursework: Machine Learning, Artificial Intelligence, Distributed Operating Systems, Data Science Algorithms

BITS Pilani, Hyderabad, India

Bachelor of Science in Electronics and Communication

Coursework: Information Retrieval, Data Structures, Object-Oriented Programming, Database Management, IoT

EXPERIENCE

MediBuddy

Jun 2022 – Dec 2023

Software Engineer, Full Stack – Consumer

Bengaluru, India

- Developed backend features using **Spring Boot** and **React** for order management across **500k+ users**; cut cancellations by **8–12%** and boosted API response time from **2s to 0.8s**.
- Enhanced API throughput for Rakuten's corporate platform using **Redis caching**, pagination, and code cleanup; minimized server load and elevated user experience metrics.
- Integrated a **pilot-lightweight LLM-based FAQ assistant** using **OpenAI APIs** to automate customer support; decreased resolution time and strengthened first-response accuracy, yielding measurable gains in user satisfaction.
- Refined JP Morgan's front-end interface using **React**, **Redux**, and **Bootstrap**; integrated real-time promotional content with **Firebase**, amplifying upsell engagement.
- Elevated delivery efficiency by **15–20%** via real-time location tracking and route optimization using **Google Maps APIs**.

Swiggy

Jun 2021 – May 2022

Software Engineer, Backend – Supply Chain Management

Bengaluru, India

- Architected a pricing service backend using **Go**, **gRPC**, **Kafka**, and **DynamoDB**; alleviated pricing discrepancies by **15–20%**, refined API latency by **15–25%**, and streamlined approval workflows by **25–30%**.
- Engineered feature-flag controlled **Kafka consumer** pipelines, curbing unintended data pushes and raising system uptime to **99.5%**.
- Automated inventory refresh workflows in **Databricks** using **Python** and **Apache Hive**; brought down manual errors by **40–50%** and significantly trimmed outdated records.
- Devised internal monitoring tools to track pricing API performance; streamlined on-call diagnostics and shortened incident resolution time by **10%**.

PROJECTS

Real-Time Scheduling & Communication Platform

[Source Code](#)

- Created a real-time scheduling platform using the **MERN** stack, **Google APIs**, **SendGrid**, and **Redis**; supported **50+** concurrent sessions with consistently low latency (**<500ms**) and integrated scalable multi-service architecture.

E-Commerce Microservices Architecture

[Source Code](#)

- Designed and containerized microservices using **Spring Boot**, **React**, and **MongoDB**; demonstrated scalable service communication, RESTful design, and modular deployment.

BERT-Powered Product Recommendation Engine

[Source Code](#)

- Implemented an NLP-based recommendation system using **PyTorch**, **BERT**, and **HuggingFace Transformers**; analyzed **10M+** product reviews, boosted cold-start performance, and demonstrated pipeline deployment techniques.

AI-Powered Research Paper Q&A Assistant

[Source Code](#)

- Developed a document Q&A assistant for academic papers using **LangChain**, **FAISS**, and **OpenAI APIs**, with a **RAG** pipeline for chunking, vector search, and prompt engineering; deployed via **FastAPI** and **Streamlit**.

TECHNICAL SKILLS

Languages & Frameworks: Java, Go, Python, JavaScript (ES6+), SQL, HTML/CSS, Spring Boot, Node.js, React, RESTful APIs, gRPC, Express.js.

Libraries & ML Tools: PyTorch, HuggingFace Transformers, BERT, Scikit-learn, LangChain, FAISS, Weaviate, Numpy, Pandas, Matplotlib.

Systems & Databases: Docker, Kubernetes, Kafka, MongoDB, PostgreSQL, MySQL, Firebase, Apache Hive, Redis.

Cloud & DevOps: AWS, Microsoft Azure, Databricks, Git/GitHub, Jenkins, Postman, Grafana, CI/CD pipelines, API lifecycle management.

Practices & Concepts: Retrieval-Augmented Generation (RAG), test-driven development (TDD), Agile/Scrum methodologies, technical documentation.