Vansh Shah

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Summary

Backend-focused Software Engineer specializing in **event-driven microservices**, **LLM-powered automation**, and **scalable API design** using Django/FastAPI. Experienced in building **fault-tolerant workflows**, optimizing **AI/agentic systems**, and delivering high-performance solutions across **AWS** infrastructure.

Technologies

Languages: Python, Go, Dart, TypeScript, SQL, Bash
Frameworks: FastAPI, Django, Flask, React.js, Next.js, Flutter, Node.js
AI & ML: OpenAI Agent SDK, LangChain, LangGraph, LlamaParse
Databases & Messaging: PostgreSQL, Redis, MongoDB, SQLite, Kafka, AWS SQS
DevOps & Cloud: Docker, Docker Compose, AWS (ECR, S3, Lambda, EC2), LocalStack, Github Actions, CI/CD
APIs & Integrations: REST API, GraphQL, Hasura, JSON Schema, Postman

Experience

Software Development Engineer - I
Jan 2025 – Present

Karbon Business – Bangalore, India

- **Architected an extensible, fault-tolerant routing framework** in the AI service to dynamically map incoming events to processors; implemented a dequeue-based recovery system enabling automatic reprocessing of failed events post-deployment and ensuring exactly-once event consumption across distributed microservices.
- Developed and optimized **Dashboard APIs in Django + PostgreSQL**, applying caching, pagination, and query optimization to eliminate **N+1 SQL bottlenecks** and reduce response latency by 60 %, maintaining full ownership of the service.
- Built **agentic workflows** with **OpenAI Agent SDK + LangGraph** to automate extraction and reconciliation of bank transactions; introduced a **secondary AI fallback route** for non-reconcilable cases, significantly improving reliability.
- Enhanced **credit-card statement extraction model accuracy by 70 %** through advanced **prompt and context engineering** using **Anthropic Claude 3.7**, deploying the system in production-scale FastAPI pipelines.
- Designed a high-throughput **Tally data synchronization system-** via a Flutter **Windows application** communicating with backend REST APIs every 10 s; achieved **500 MB data transfer in < 30 s**, enabling near-real-time accounting sync.
- Engineered and maintained **event-driven microservices in Django + FastAPI**, driving core accounting, billing, and transaction workflows with < 1 % runtime error rate.
- Implemented **CI/CD pipelines** for Windows builds and backend deployments with **GitHub Actions**, automating packaging, artifact signing, and S3 distribution.
- Leveraged **AWS CloudWatch, S3 , SQS, and EventBridge** for monitoring, event-driven orchestration, and fault-tolerant message processing across services.

Fullstack Intern
Jul 2024 – Dec 2024

Karbon Business – Bangalore, India

- Prototyped and evaluated **Agentic workflows** and **Model Context Protocol (MCP)** based pipelines as alternatives to traditional GenAI implementations.
- Designed **evaluation metrics** and testing frameworks to benchmark accuracy, latency, and reliability of LLM-powered solutions.
- Built a production-ready POC to **classify invoices, bills, bank statements, and credit-card statements** using **Microsoft Graph APIs**, enabling structured document categorization.
- Added comprehensive **unit and integration tests** to increase test coverage and uncover critical edge-cases across services.

Education

CHRIST (Deemed to be University), MCA — Jul 2023 – May 2025

- GPA: 3.8/4.0
- **Coursework:** Computer Architecture, Comparison of Learning Algorithms, Computational Theory

Presidency College, BCA — Sep 2020 – Aug 2023

- CGPA: 9.92/10.0
- **Coursework:** Computer Architecture, Comparison of Learning Algorithms, Computational Theory

Projects

CU Report Rover — *React.js, Firebase, Cloudinary, Gemini APIs*

- Built an automated event-report generation platform reducing report creation time from **2 hours to 10 minutes** through LLM-powered summarization and dynamic templates.
- Adopted by the University; currently used by **200+ professors** and **500+ students** for event documentation workflows.

EventQuest — *Flutter, Node.js, Express.js, MongoDB, Redis, Cloudinary*

- Developed a universal event-management platform offering real-time event updates, registrations, announcements, and user engagement features.
- Integrated **Redis caching** to reduce repeated DB lookups, improve API response times, and handle high-traffic event periods efficiently.
- Designed backend REST APIs with proper validation, rate-limiting, JWT-based authentication, and optimized MongoDB queries for scalable data retrieval.

CU Validator — *Python, TensorFlow, Flutter, Dart*

- Trained a custom TensorFlow model to validate university posters by detecting title, venue, department placement, and logo position using image-classification and rule-based post-processing.
- Deployed a **quantized + Dockerized** model behind a FastAPI inference server hosted on Render, enabling low-latency validation across Flutter clients.

Publications

Copyright - EventQuest: Revolutionising Event Management and Engagement — Aug 2024
Assessing the Role of Financial Literacy in Personal Financial Management — May 2024

Honors & Rewards

Silver Medalist at CodeFury 7.0 — App Track — Aug 2024
by IEEE University of Visvesvaraya College of Engineering
Awarded at IEEE VTS Bangalore Hackathon — Mar 2024
by ATRIA Institute of Technology
Best Inestimable Student — Aug 2023
by Presidency College (Batch 2020-2023)

Certifications

Ultimate AWS Certified Cloud Practitioner CLF-C02 2025 — Jun 2023
by Stephane Maarek (Udemy)
Flutter & Dart – The Complete Guide — Dec 2022
by Paulo Dichone (Udemy)
NodeJS – The Complete Guide (MVC, REST APIs, GraphQL, Deno) — Aug 2021
by Academind