Shashank Chandavarkar

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Education

Texas A&M University, College Station, Texas Aug. 2025 – May. 2027
Master of Science in Computer Science

JSS Science and Technology University, Mysore Aug. 2018 – Jul. 2022
Bachelor of Engineering in Computer Science GPA: 9.14

Experience

Sixt Research and Development

Software Development Engineer Jul. 2022 – Jun. 2025

- Owned the IoT lifecycle microservice powering **300,000+ vehicles**, enabling reliable activation/deactivation and serving as the system of record for IoT data.
- Implemented a centralized whitelist solution for airport parking vendors, automating vehicle entry and reducing manual work across **30% of branches**.
- Built an automated vehicle return-time approval system that reduced incorrect invoicing complaints by **60%**.
- Designed and deployed an invoice-summary pipeline that decreased invoice delivery time by **6 hours**, boosting customer satisfaction by **30%**.
- Improved check-in workflows by adding a complaint capture feature (raising customer excitement score by **15%**) and optimizing post-processing pipelines for a **20%** performance gain.

Software Engineering Intern Jan. 2022 – Jun. 2022

- Built a Python/Flask microservice to recommend relocating free-floating car-sharing vehicles, improving fleet utilization by **40%**.
- Reduced vehicle swap latency between Sixt Share and Rent fleets by **20%** through asynchronous activation/deactivation pipelines.

Skills

Programming Languages: Java, Go, Python, Javascript, HTML, CSS
Frameworks: Spring, Spring Boot, React, FastAPI, gRPC, REST, JPA, JDBC, PyTorch, Hibernate
Databases & Search: PostgreSQL, MySQL, Elasticsearch, MongoDB, OpenSearch
Messaging & Streaming: Kafka
DevOps & Observability: AWS, Linux, Docker, Kubernetes, Jenkins, GitLab CI, Prometheus, Grafana, Instana, OpenSearch Dashboards, Git
ML & Search: FAISS, sentence-transformers (all-MiniLM-L6-v2, BERT), vector search

Projects

Clinical Trial Search Engine

- Built a **hybrid clinical trial search engine** combining BM25(OpenSearch) and dense semantic retrieval(PubMedBERT) using **Reciprocal Rank Fusion(RRF)**, indexing **560,000+ trials**.
- Designed a **scalable ingestion pipeline** to scrape, normalize, and index large-scale clinical trial data from ClinicalTrials.gov into PostgreSQL and OpenSearch.
- Integrated **FAISS-based vector search** to re-rank the top 10,000 candidates per query and implemented an **AI-driven feasibility scoring engine** with cached eligibility parsing.
- Achieved **sub-2s query latency** and strong retrieval quality on the **TREC 2021 Clinical Trials** benchmark (**0.48 MRR@10**, **70% Hit Rate@10**); containerized the system using **Docker Compose**.

AI-Powered Regulatory Document Classifier

- Developed a **multi-modal AI system** using **Flask** that classifies regulatory documents by combining **text parsing**, **BLIP-based image captioning**, and **LLM-driven reasoning** (via OpenRouter API).
- Built a **dynamic prompt library** enabling **real-time compliance rule updates** and **explainable, citation-based classifications**, integrated with **Human-in-the-Loop (HITL) feedback**, and **containerized the service** for scalable deployment.

Task Management System

- Built a **Spring Boot–based task management system** with REST APIs, JPA persistence, and a **state machine driven lifecycle** (PENDING → IN-PROGRESS → DONE) with centralized validation.
- Implemented **CI/CD pipelines using GitHub Actions** to run automated tests and publish Docker images to **Docker Hub**.

Leadership

- Standardized service-level configurations across **12+ microservices**, producing ownership maps and reference documentation adopted across teams.
- Introduced automated pre-PR config validation and removed redundant configs, reducing maintenance overhead by **30%**.