

SHAMRATHA G

Bengaluru, Karnataka

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EDUCATION

B.M.S. College of Engineering, Bengaluru

B.E. Artificial Intelligence & Machine Learning

CGPA: 8.0

Expected 2027

EXPERIENCE

DSA SofTech Pvt Ltd

Software Intern

Bengaluru

Jun 2025 – Jul 2025

- Built and maintained automated regression test scripts in Python for **SkedGuy** (*app.skedguy.com*), an airline schedule management platform handling global route and flight data, reducing manual regression effort across releases.
- Diagnosed and documented software defects with detailed reproduction steps and severity classification in the issue tracker, accelerating engineering triage and fix prioritization across the platform.
- Collaborated with BI, analytics, and cloud engineering teams serving enterprise clients including Volvo, Canarys, and Excelsoft, gaining exposure to how product, testing, and deployment pipelines fit together end-to-end.

PROJECTS

Text-to-SQL with Guardrails & Hallucination Detection

Live — GitHub

Python, FastAPI, DuckDB, Groq LLM

- Built a natural-language-to-SQL engine that parses and validates every generated query at the **AST level** against the live database schema, blocking hallucinated tables and columns and enforcing read-only execution in a sandboxed environment.
- Designed a hallucination-detection layer combining back-translation, multi-query agreement, and confidence scoring to flag unreliable output before it reaches the user, achieving **86% execution accuracy** on a structured evaluation set.

LLM Gateway — Fault-Tolerant API Gateway

Live — GitHub

Python, FastAPI, Redis, Grafana

- Designed and built a **fault-tolerant, horizontally scalable** API gateway with automatic failover across multiple backend providers, using circuit breakers to isolate failing dependencies and recover without dropping traffic.
- Implemented distributed rate limiting with a Redis-backed token-bucket algorithm and instrumented the full request path with Prometheus metrics across **three Grafana dashboards**.

CollabBoard — Real-Time Collaborative Project Board

Live — GitHub

MERN, Socket.io, JWT

- Built a full-stack MERN board (mini Trello/Linear) with **httpOnly-cookie JWT auth**, owner/member RBAC, and real-time Socket.io sync using a commit-then-broadcast architecture, so every client converges on server state idempotently with no double-applies.
- Implemented optimistic-concurrency conflict resolution (versioned edits, HTTP 409 merge prompts), transactional cascading deletes, a Redis pub/sub adapter for horizontal socket scaling, and cursor-paginated activity history, backed by **55 passing tests**.

TECHNICAL SKILLS

Languages: Python, C, Java, SQL

Technologies: FastAPI, Flask, React, Node.js, Docker, Redis, Git, DuckDB, Prometheus, Grafana, Render

AI/ML: PyTorch, Scikit-Learn, XGBoost, HuggingFace Transformers, Reinforcement Learning, Pandas, NumPy, OpenCV, LLM Gateways, Guardrails, Hallucination Detection, Prompt-Injection Defense

Concepts: Data Structures & Algorithms, DBMS, Operating Systems, Computer Networks, Machine Learning, Object-Oriented Programming

ACHIEVEMENTS

Top 11 / 450+ Teams | Visa Offline Hackathon, IIT Madras

Jan 2026

- Built a transaction data quality pipeline combining rule-based checks with Isolation Forest anomaly detection, producing per-dimension quality scores and audit trails for financial compliance.

Winner | Amagination 2025, Amagi Media Labs

2025

- Won Amagination 2025 for engineering a live HLS stream monitoring and analytics dashboard with real-time health tracking and diagnostics.