HARSHIT GARG

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Summary

Information Technology undergraduate building fault-tolerant backend systems and grounded AI applications in Python, FastAPI, and PostgreSQL. Experienced in database concurrency control, financial ledger modeling, and deterministic LLM workflows with retrieval and validated outputs.

Skills

Languages: Python, C++, SQL
Backend & Databases: FastAPI, PostgreSQL, Redis, SQLAlchemy, Alembic, Pydantic, REST APIs, WebSockets, JWT
AI & ML: PyTorch, LangChain, LangGraph, RAG, FAISS, Scikit-learn, pandas, NumPy, OpenCV
Tools & Deployment: Git, GitHub, Vercel, Neon, Locust
Fundamentals: Data Structures & Algorithms, System Design, DBMS, OS, Computer Networks

Projects

Flash-Sale Ticketing Platform **Live App | Source Code**
Python, FastAPI, PostgreSQL, SQLAlchemy, Alembic, WebSockets, Vercel, Neon

- Engineered a ticketing backend where the database makes double booking impossible, with all-or-nothing seat holds that expire against the database clock, removing the need for a background job.
- Implemented and compared 4 seat-locking strategies (unique insert, row locks, SKIP LOCKED, atomic upserts), and locked the user's row to enforce per-user seat limits under concurrent requests.
- Pushed live seat updates over WebSockets and secured the REST API with JWT access and refresh tokens, role-based access, idempotent bookings, security headers and request-size limits.

EvenUp — UPI Bill-Splitting App **Live App | Source Code**
Python, FastAPI, PostgreSQL, SQLAlchemy, Vercel

- Built a hybrid expense-splitting platform supporting zero-signup instant link sharing with a 3-stage TTL lifecycle (48h active, 24h read-only export, automated purge) alongside persistent accounts for cross-tab balances.
- Implemented min-cash-flow debt simplification reducing group settlements to at most $n - 1$ transfers and deterministic paisa-remainder rounding so split shares always sum exactly to the bill.
- Generated pre-filled `upi://pay` deep links for one-tap settlement and secured unauthenticated rooms with optional per-participant password hashing and encrypted UPI IDs at rest.

Data Analyst — Deterministic CSV Query Engine **Live App | Source Code**
Python, FastAPI, LangGraph, Groq, Gemini embeddings, FAISS, pandas

- Developed a FastAPI app where users upload a CSV, review its data-quality profile and ask questions in plain English. A LangGraph workflow has the LLM pick one of the allow-listed pandas analyses as a typed, validated plan, so the model never runs code or calculates numbers.
- Grounded answers by rejecting any explanation that contains a number not found in the computed result, and returned invalid plans to the model once with the failure reason.
- Implemented RAG over dataset glossaries using Gemini embeddings and FAISS to map business terms to the right columns, and deployed it on Vercel with a demo login and daily usage limits.

Experience

AI Strategy & Business Intelligence Virtual Intern **Source Code | Certificate**
IBM Skills Build (via CSRBOX) Mar 2026 – Apr 2026

- Built **Hirely**, a B2B recruitment platform where companies post technical job openings and screen candidates through live AI voice interviews streamed in real time over WebSockets.
- Added in-browser proctoring with MediaPipe Face Mesh to track candidates' gaze and flag face anomalies during interviews.

Education

Bhagwan Parshuram Institute of Technology
B.Tech in Information Technology – 7.5 CGPA (up to 6th semester) Expected 2027

Hansraj Model School Punjabi Bagh
Class XII CBSE – 84.4% 2022
Class X CBSE – 87.4% 2020

Training & Coding Profiles

Offline Summer Training in Machine Learning – NIELIT (Govt. of India) **Certificate**
LeetCode: leetcode.com/u/hr5ht – 200+ Problems Solved