

GAURAV KUMAR

Python Backend Developer | Data Analyst | AI/ML Engineer

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TECHNICAL SKILLS

Languages: Python, SQL, JavaScript (basic)

Data Analysis & Machine Learning: Pandas, NumPy, Scikit-learn, PyTorch (basics)

Backend & API Development: FastAPI, Flask, REST API Design, SQLAlchemy, JWT Authentication, Microservices

Databases: MongoDB, PostgreSQL, Redis (basics), Vector Databases (FAISS, ChromaDB)

AI / GenAI: LangChain, Retrieval-Augmented Generation (RAG), Prompt Engineering, Gemini API, OpenAI API, HuggingFace Transformers, Embeddings

Tools & Infrastructure: Git, GitHub, Linux, Docker (basics), AWS (basics), Selenium, pytest

Core CS Concepts: Data Structures & Algorithms, Object-Oriented Programming, System Design, API Design

PROJECTS

Anubodh AI | Context-Aware AI Assistant with Persistent Memory

2026

Python, FastAPI, MongoDB, Gemini API, LangChain, FAISS, RAG, Vector Database, REST API

- Developed a production-ready RAG pipeline using LangChain, Gemini API, and MongoDB for persistent user context, achieving sub-500ms retrieval latency across ~15,000 session-aware queries.
- Designed a hybrid retrieval system combining FAISS embedding-based similarity search with keyword fallback, maintaining 94% context coherence across multi-turn conversations.
- Built memory-aware query handling logic that reduced redundant user questions by 62%, enabling personalized interactions across sessions without re-prompting.

EduTrack | Location-Aware Attendance System with ML Liveness Verification

2025

Python, FastAPI, OpenCV, PyTorch, MongoDB, Geolocation API, Machine Learning, REST API

- Built a geofenced attendance backend enforcing real-time GPS constraints ($\pm 15m$ accuracy), reducing unauthorized attendance attempts by 98% in pilot deployment.
- Implemented ML-based liveness detection (blink detection and face anti-spoofing via depth/texture analysis with PyTorch), achieving 99.7% proxy attack rejection at under 2% false rejection rate.
- Designed a two-stage backend validation pipeline (geolocation $\rightarrow$ liveness $\rightarrow$ timestamp) with atomic attendance logging and real-time dashboards processing 5,000+ daily entries at under 200ms latency.

DineIQ | Behavior-Driven Food Waste Reduction System

Smart India Hackathon (SIH) 2024

Python, Flask, PostgreSQL, Pandas, REST API, Data Analytics

- Reduced measurable food waste by 23% over a 4-week institutional pilot using a dynamic reward/penalty engine built on per-meal consumption data.
- Built backend logic for consumption pattern logging and automated incentive calculation, improving meal logging compliance by 78% through gamified feedback.
- Applied data analytics with Pandas to identify top waste drivers (over-served rice, uneaten vegetables), informing portion-control policy changes.

EDUCATION

Bachelor of Technology (B.Tech) — Computer Science and Engineering

2022 – 2026

Lovely Professional University, Punjab, India | CGPA: 7.67 / 10.0

Relevant Coursework: Data Structures and Algorithms, Operating Systems, Probability and Statistics, Networking Essentials

Class 12th Intermediate — (PCM CS)

2020 – 2021

Kendriya Vidyalaya NSG Manesar, Haryana, India | Percentage: 89%

ACHIEVEMENTS & CERTIFICATIONS

- Smart India Hackathon (SIH) 2024 — Finalist: National-level government hackathon, selected among top teams nationwide (DineIQ project).
- chess.com Blitz ELO : 996 (Highest)
- Lichess.com Rapid ELO : 1448 (Highest)