GAURAV KUMAR

Python Backend Developer | AI/ML Engineer | GenAI Developer
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PROFESSIONAL SUMMARY

Python backend developer and AI/ML engineer with hands-on experience building RAG pipelines, LLM-integrated applications, REST APIs, and data-driven backend systems. Proficient in FastAPI, LangChain, Gemini API, MongoDB, PostgreSQL, and vector databases (FAISS, ChromaDB). Experienced with prompt engineering, retrieval-augmented generation (RAG), and deploying scalable Python microservices. Seeking Python Backend, AI/ML, Backend Developer, or Generative AI (GenAI) roles.

TECHNICAL SKILLS

Programming Languages: Python, SQL, JavaScript (basic)
Backend & API Development: FastAPI, Flask, REST API Design, JWT Authentication, SQLAlchemy, Microservices
AI / Generative AI (GenAI): LangChain, Retrieval-Augmented Generation (RAG), Prompt Engineering, Gemini API, OpenAI API, LLM Integration, HuggingFace Transformers, Embeddings
Machine Learning & Data: PyTorch (basics), Scikit-learn, Pandas, NumPy, FAISS, ChromaDB, Vector Databases
Databases: MongoDB, PostgreSQL, Redis (basics), Vector Databases
Tools & Infrastructure: Git, GitHub, Linux, Docker (basics), AWS (basics), Selenium, pytest
Core CS Concepts: Data Structures & Algorithms, Object-Oriented Programming (OOP), System Design, API Design

PROJECTS

Anubodh AI | Context-Aware AI Assistant with Persistent Memory 2026
Technologies: Python, FastAPI, MongoDB, Gemini API, LangChain, FAISS, RAG, Vector Database, REST API

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

EduTrack | Location-Aware Attendance System with ML Liveness Verification 2025
Technologies: Python, FastAPI, OpenCV, PyTorch, MongoDB, Geolocation API, Machine Learning, REST API

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

DineIQ | Behavior-Driven Food Waste Reduction System Smart India Hackathon (SIH) 2024
Technologies: Python, Flask, PostgreSQL, Pandas, REST API, Data Analytics

- Reduced measurable food waste by 23% over a 4-week real-world institutional pilot using a dynamic reward and penalty engine (bonus credits vs. waste surcharge per meal item).
- Built backend logic for per-meal consumption pattern logging and automated user-specific incentive calculation; improved meal logging compliance by 78% through gamified feedback.
- Implemented data analytics workflows to identify and surface top waste drivers (over-served rice, uneaten vegetables), informing targeted portion-control policy changes at the institution.

EDUCATION

Bachelor of Technology (B.Tech) — Computer Science and Engineering CGPA: 7.57 / 10.0
Lovely Professional University, Punjab, India 2022 – Expected july 2026
Relevant Coursework: Data Structures and Algorithms, Operating Systems, Probability and Statistics, Networking Essentials

ACHIEVEMENTS & CERTIFICATIONS

Smart India Hackathon (SIH) 2024 — Finalist | National-level government hackathon; selected among top teams nationwide (DineIQ project)