Hasnain Zainulabdin

Python Developer | Generative AI & LLM Applications | Full-Stack & Desktop Engineering

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PROFESSIONAL SUMMARY

Python developer with hands-on, end-to-end experience building Generative AI-powered SaaS applications, full-stack web platforms, and Electron desktop tools, from architecture through production deployment. Practical experience with LLM integration, Retrieval-Augmented Generation (RAG) pipelines, voice and conversational AI, and agentic workflows using FastAPI, Groq API (Llama 3 / 3.3-70B), FAISS, and Sentence-Transformers. Has built products for Islamic finance, legal tech, EdTech, HR tech, retail/SME, and healthcare, including low-resource NLP for Urdu and Roman Urdu. Builds REST APIs and relational backends (PostgreSQL, MySQL, SQLite) and deploys with Docker on Linux cloud servers. Co-founder of a two-person tech agency, comfortable owning full project lifecycles independently.

TECHNICAL SKILLS

LLMs & RAG: LLM Integration, Retrieval-Augmented Generation (RAG), Hybrid BM25 + Vector Retrieval, FAISS, Sentence-Transformers, Groq API (Llama 3-70B / 3.3-70B), Hugging Face, Prompt Engineering, Anti-Hallucination Hardening

Voice & Conversational AI: Whisper ASR, edge-TTS, AI Chatbots, WhatsApp Bot Integration (WhatsApp Cloud API / Meta), Multilingual NLP Pipelines (English / Urdu / Roman Urdu)

Agentic AI: Tool-Calling Workflows, Multi-Step AI Agents

NLP & Machine Learning: spaCy, Scikit-learn, Pandas, NumPy, OpenCV (exploratory), PyTorch / YOLOv8 (learning)

Languages: Python, JavaScript, TypeScript, SQL, PL/SQL, HTML, CSS

Backend & APIs: FastAPI, Node.js, REST API Design & Development, Third-Party API Integration, SQLModel / SQLAlchemy, Alembic Migrations, Scalable Backend Architecture, Microservices-Oriented Design

Databases: PostgreSQL, MySQL, SQLite, Database Design & Schema Modeling

Frontend & Full-Stack: Jinja2, HTMX, Tailwind CSS, Alpine.js, Next.js 15 (App Router), React.js, React Three Fiber, GSAP

Desktop & Mobile: Electron, better-sqlite3, React Native

DevOps & Cloud: Git, GitHub, Docker, Docker Compose, Nginx, Let's Encrypt, DigitalOcean, Hetzner VPS, Vercel, Hugging Face Spaces, Linux, Redis, Celery, CI/CD-Oriented Deployment

Practices: SaaS Application Design & Deployment, Performance & Reliability, Code Review, Architectural Decisions, Testing & QA, Technical Documentation

PROFESSIONAL EXPERIENCE

Freelance Python Developer / Software Engineer

Self-Employed | *Hyderabad, Pakistan* | *Aug 2023 – Present*

- Design, build, and maintain scalable Python/FastAPI backends and REST APIs for SaaS-style client applications, from architecture through production deployment.
- Develop LLM-powered chatbots, RAG pipelines, and AI agents using Groq API, FAISS, and Sentence-Transformers, optimizing APIs and data pipelines for AI workloads.
- Design relational schemas (PostgreSQL, MySQL, SQLite); deploy containerized apps with Docker/Docker Compose on Linux cloud servers (DigitalOcean, Hetzner) behind Nginx.
- Own full project lifecycles independently (architecture, development, testing, deployment, code review) while communicating consistently with clients and stakeholders.

Co-Founder

R&R Digital Solutions (Two-Person Tech Agency) | *Hyderabad, Pakistan*

- Co-founded the agency and built its website and infrastructure with Next.js 15 (App Router), TypeScript, Tailwind CSS, GSAP, and React Three Fiber, deployed to Vercel on a custom domain.

FEATURED PROJECTS

1. ShariahEase – AI-Powered Islamic Finance Platform | May 2026

- Built and deployed an Islamic finance SaaS platform with a Zakat calculator, halal stock screener, Mudarabah simulator, charity directory, RAG-based AI chatbot with voice interaction, PDF certificates, and a WhatsApp bot.
- **Impact:** +80% faster Zakat and halal-screening checks; AI chatbot answers in under 3 seconds.
- Implemented FastAPI and SQLite/SQLAlchemy backend services, integrating Groq LLM and WhatsApp Cloud API (Meta); deployed via Docker to Hugging Face Spaces with persistent storage.

  Tech: Python, FastAPI, SQLite, SQLAlchemy, Groq API, FAISS, Sentence-Transformers, RAG, Whisper ASR, edge-TTS, Jinja2, Tailwind CSS, Alpine.js, WhatsApp Cloud API, Docker

2. QanoonDaan – RAG-Based Pakistani Legal Advisory Chatbot | Apr 2026

- Built a legal-tech chatbot that makes legal guidance accessible in seconds, using a RAG pipeline over official Pakistani legal sources with FAISS, Sentence-Transformers, and hybrid BM25 + vector retrieval.
- **Impact:** Answers 90% of Pakistani legal queries with cited official sources.
- Integrated Llama 3.3-70B via Groq with extensive prompt engineering and anti-hallucination hardening for grounded responses.
- Built a multilingual pipeline (English / Urdu / Roman Urdu) with a foreign-script allowlist filter; delivered via FastAPI/Jinja2 on Hugging Face Spaces.

  Tech: Python, FastAPI, FAISS, Sentence-Transformers, Groq API (Llama 3.3-70B), RAG, Jinja2

3. FeeTrack – School Fee & Attendance Management System | 2026

- Built a production EdTech backend that speeds up fee collection, with custom fee overrides, holiday handling, admin notifications, category-based fees, invoice generation, and student/teacher CRUD.
- **Impact:** Sped up fee collection by 70% and saved ~1 hour daily on fee collection and attendance tracking; tested with 500+ students and 12-month fee cycles.
- Implemented a QR-based attendance kiosk, manual attendance entry, a super-admin approval workflow for new accounts, and a salary calculator with per-session (School/Academy) split logic.
- Used Alembic migrations and REST endpoints; containerized with Docker Compose, with deployment planned on a Hetzner VPS behind Nginx/Let's Encrypt.

  Tech: Python, FastAPI, SQLModel, PostgreSQL, Alembic, Docker, Docker Compose, Nginx

4. ResuFit – AI Resume Screening API | 2026

- Built an HR-tech API that automates candidate evaluation end-to-end, using FastAPI, spaCy, and Scikit-learn for candidate/job matching; containerized with Docker and deployed on Hugging Face Spaces.
- **Impact:** 70% reduction in manual resume-screening time.

  Tech: Python, FastAPI, spaCy, Scikit-learn, Docker, Hugging Face Spaces

5. Chicken Khata – Offline Khata & Billing Software for a Retail Shop | 2026

- Built offline desktop khata and billing software for a local chicken shop, covering supplier/customer dues, partial payments, a Daily Ledger, and thermal-receipt printing.
- **Impact:** 95% less time spent on daily bills, dues, and ledger entries for a real shop owner; caught Rs. 70,000+ in billing and ledger errors in the first month.

  Tech: Electron, TypeScript, better-sqlite3

6. Tabib Ghar – On-Demand Paramedic Home Healthcare App | Final-Year Project

- Built an on-demand paramedic booking app as my final-year university thesis, with React Native for mobile, React.js for web, and Node.js for the backend.

  Tech: React Native, React.js, Node.js

EDUCATION

Bachelor of Science in Software Engineering | University of Sindh, Jamshoro | 2022 – 2026

Diploma in AI and Data Science | Saylani Mass IT Program (SMIT) | May 2025 – June 2026

CERTIFICATIONS

Cisco: Python Essentials 1 | Cisco: Python Essentials 2 | Cisco: Data Science Essentials | Cisco: Introduction to Modern AI