

# Abdul Khaliq

AI Engineer | Backend | LLM & RAG Systems

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## PROFESSIONAL SUMMARY

AI and backend engineer based in Karachi, building end-to-end applications in Python: RAG systems, NLP and machine learning models, and production APIs with FastAPI. I have learned through self-directed study and built and deployed seven projects, from a real-time traffic alert mobile app to a video Q&A assistant with sub-2-second retrieval. I am looking for junior AI/ML or backend engineering roles in Karachi, as well as remote freelance work.

## TECHNICAL SKILLS

- **AI & LLMs:** LangChain, RAG, FAISS, ChromaDB, Groq API (LLaMA 3), OpenAI API, Sentence Transformers, ONNX Runtime, Prompt Engineering
- **Backend & APIs:** Python, FastAPI, Django REST Framework, Flask, Node.js, Express, REST API Design, Webhooks, JWT Authentication
- **Cloud & Deployment:** Oracle Cloud (ARM VM), Railway, Vercel, Streamlit Cloud, Docker, Nginx, PM2, Supabase (PostgreSQL)
- **Data Science & ML:** Pandas, NumPy, Scikit-learn, XGBoost, SHAP, TF-IDF, SQL, MySQL, Matplotlib, Seaborn
- **Mobile & Tools:** React Native (Expo), Firebase (FCM, Firestore), Git, GitHub, Streamlit

## PROJECT EXPERIENCE

### AI Resume Screening and Search Relevance System

- **NLP:** Built a resume screening system using TF-IDF vectorization and skill extraction, reaching 87% matching accuracy and reducing manual screening effort by approximately 75%.
- **Search:** Upgraded it into a search relevance system with ChromaDB, hybrid search, FlashRank reranking and Groq query transformation.
- **Deployment:** Served through FastAPI REST endpoints with a Streamlit frontend on Railway and Streamlit Cloud.

### RAG-Based AI Teaching Assistant (Sigma RAG)

- **AI:** Built a video Q&A system with LangChain, FAISS, sentence-transformer embeddings and Groq (LLaMA 3), returning answers mapped to exact MM:SS video timestamps.
- **Deployment:** Deployed a FastAPI backend on Railway with a Streamlit frontend, achieving sub-2-second response times.

### AI PDF Summarizer

- **AI:** Built a Map-Reduce summarization pipeline for multi-document PDFs using LangChain and OpenAI GPT models, with a Streamlit interface.

### Student Performance Predictor

- **ML:** Built an XGBoost classification model that predicts student pass/fail risk with 84% accuracy, using SHAP explainability so educators can see which factors drive each prediction.
- **Deployment:** Deployed with FastAPI and Streamlit for real-time predictions and early identification of at-risk students.

### Iconspire: AI Icon Generator and Background Remover

- **AI:** Built a background removal pipeline with Node.js and Express, running ISNet models locally through ONNX Runtime to avoid third-party inference costs.
- **Payments:** Integrated Lemon Squeezy subscription billing through webhooks, with Firebase Admin SDK and Firestore for real-time subscription and credit state.
- **Deployment:** Deployed the backend on an Oracle Cloud ARM VM behind Nginx, managed with PM2.

### CommuteClear: Real-Time Karachi Traffic Alerts

- **Mobile:** Built a real-time traffic alert app with React Native (Expo) and Supabase (PostgreSQL), including database schema design, push notifications through Firebase Cloud Messaging, and commute-window alert filtering.
- **Backend:** Developed Python scrapers on an Oracle Cloud ARM VM to aggregate live traffic incidents, with incident deduplication, geofencing and OSRM route integration.
- **AI:** Used Groq-hosted LLaMA to classify traffic news, with rate limiting to stay within API limits.

### Squarely: Expense-Splitting Backend

- **Backend:** Developed a REST API with Django REST Framework, covering JWT authentication, email OTP verification, Google OAuth, group and expense management, and API documentation with drf-spectacular.
- **Integrations:** Added Firebase push and in-app notifications, PostgreSQL storage, and S3-compatible media storage.

### EDUCATION

Intermediate in Computer Science (ICS) | [Government Degree Boys College, Karachi](#)

2024 – 2026

### ADDITIONAL INFORMATION

**Languages:** Urdu (Native), English (Intermediate)

**Certification:** Data Science Course (CodeWithHarry)