

Muhammad Roshaan

Python Full-Stack Developer | AI/ML Engineer

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Summary

Final-year BS Computer Science student and Python-focused full-stack developer specializing in backend systems, applied AI/ML, and data-intensive applications. Built FastAPI and React systems, transaction-safe workflows, ETL pipelines, and Gemini-powered multimodal services, with practical MLOps experience from a Data Science internship at 10Pearls.

Technical Skills

Languages and Backend: Python, FastAPI, REST APIs, SQLAlchemy, Celery, WebSockets, JWT authentication

Frontend: React

Data and Infrastructure: PostgreSQL, MySQL, SQLite, MongoDB, Redis, RabbitMQ, Docker, Supabase

AI/ML and Generative AI: Pandas, NumPy, scikit-learn, XGBoost, LightGBM, Hopsworks, ETL, MLOps, Gemini, LLM agents, multimodal AI

Experience

Data Science Intern | 10Pearls Pakistan (NASTP)

Apr 2026 - Jun 2026

10P Shine Internship Program / Remote

- Built end-to-end machine learning pipelines for real-time data ingestion, feature engineering, and model deployment using Hopsworks.
- Trained and deployed an Air Quality Index (AQI) prediction model using MLOps practices in a production setting.

Selected Projects

SeatVault - Transaction-Safe Concurrency Engine

Mar 2026 - Apr 2026

FastAPI, Redis, Celery, MySQL, React

- Engineered a high-concurrency ticketing system using Redis distributed locks and FastAPI to prevent double-booking and race conditions during flash sales.
- Integrated Celery for asynchronous background processing and built a React frontend with real-time polling and JWT authentication.

Inventory ETL and Alerting Pipeline

Jul 2026

FastAPI, Pandas, SQLAlchemy, Supabase, PostgreSQL, Celery, Redis

- Built an automated ETL pipeline using Pandas and SQLAlchemy to clean and bulk-load 540K+ records into Supabase PostgreSQL.
- Integrated Celery and Redis for background scheduling and real-time inventory threshold alerts.

Sentinel - Real-Time Fraud Detection with XAI

Jun 2026

Python, FastAPI, scikit-learn, XGBoost, LightGBM, React, SQLite

- Built a fraud detection engine using a hard-voting ensemble of Random Forest, XGBoost, and LightGBM, reporting approximately 0.9995 ROC AUC on a 1.27M-record PaySim test set.
- Engineered FastAPI prediction endpoints with velocity-based rate limiting, heuristic overrides, and anomaly tracing for explainable AI decisions.

BooknScore - Offline-First Scoring and AI Service

Dec 2025 - Mar 2026

Flutter, Supabase, PostgreSQL, SQLite, Python, Gemini

- Designed the relational schema and SQLite scoring engine, then implemented Supabase synchronization to preserve local updates during network interruptions.
- Developed a companion Python/Gemini multimodal AI service using agents to transform raw match data into cinematic commentary and video-ready production scripts.

Education

Sir Syed University of Engineering and Technology

Sep 2023 - Jul 2027

BS in Computer Science | 7th Semester | CGPA: 3.81/4.00

Certifications

Introduction to MongoDB in Python - DataCamp (Nov 2025) | **FastAPI (Python)** - Udemy (Jul-Oct 2025)

Languages

English (Fluent) | Urdu (Native)