

Mahad Ali

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EXPERIENCE

PTCL Group

Data and AI Intern

Islamabad, Pakistan

Jun 2025 – Aug 2025

- Engineered an on-premise AI review intelligence platform that analyzed 1,000+ telecom app reviews using a locally hosted Llama 3.1 model for sentiment and category classification.
- Built an incremental Python ELT pipeline to scrape, clean, normalize, and store Google Play reviews across 30+ telecom applications for downstream analytics.
- Developed JWT-protected APIs and interactive dashboards using Next.js, Python, and SQLite; optimized local LLM inference through batching and quantization to reduce paid API reliance.

Pakistan Institute of Education

Software Development Intern

Islamabad, Pakistan

Aug 2025 – Sep 2025

- Developed and deployed a Django publications portal with keyword search, category filters, and year-based filtering for 70+ public education documents.
- Designed a restricted Django Admin workflow for managing publication records, metadata, categories, and uploaded files, then integrated the portal with the NITB-managed public website.

PROJECTS

DriveMind AI – Agentic RAG and Tool-Orchestration Platform

FastAPI, Next.js, LangGraph, LangChain, PostgreSQL, Qdrant, Google Drive API, OpenAI API

- Engineered a production-style AI knowledge platform that indexes Google Drive and delivers grounded question answering through a full-stack FastAPI and Next.js application.
- Designed an incremental indexing pipeline for Google Docs, PDFs, DOCX, TXT, and OCR-enabled images by syncing metadata, extracting text, chunking content, generating embeddings, and storing vectors in Qdrant.
- Architected hybrid retrieval combining PostgreSQL full-text search, Qdrant vector search, metadata filtering, reciprocal-rank fusion, weighted reranking, and evidence grading for semantic, temporal, and filename-specific queries.
- Architected a LangGraph-based agent workflow for intent routing, retrieval planning, retriever selection, query rewriting, evidence grading, citation verification, and source-backed response generation.

CoreChain – Privacy-Preserving Federated Learning Platform

Flower, Docker, AWS EC2, Hyperledger Fabric, Homomorphic Encryption

- Engineered a distributed medical AI platform enabling institutions to collaboratively train models without sharing raw patient data, achieving 97.9% accuracy in the deployed chest X-ray demo.
- Designed secure aggregation with Paillier homomorphic encryption and integrated Hyperledger Fabric to provide immutable participation records across federated training rounds.

ScoutAI – AI Job Intelligence Platform

n8n, Gemini Vision API, Google Drive, Google Sheets, Gmail, JavaScript, JSON Parsing

- Built an AI-powered n8n workflow that monitors Google Drive for job screenshots and converts unstructured postings into structured opportunity records.
- Integrated Gemini Vision, JavaScript code nodes, JSON parsing, fit scoring, priority classification, duplicate detection, Google Sheets tracking, and Gmail alerts for high-fit roles.

TECHNICAL SKILLS

AI and Agentic Systems: Agentic AI, RAG, LangGraph, LangChain, Hybrid Retrieval, Structured Outputs, Prompt Engineering, Embeddings, Vector Search, Reranking, NLP

Backend and Integrations: Python, FastAPI, Django, REST APIs, Async Python, JWT Authentication, Google OAuth, API Integrations, OpenAI API, Gemini API, Ollama

Frontend: TypeScript, Next.js, React, JavaScript, Tailwind CSS, shadcn/ui

Data and Infrastructure: PostgreSQL, SQLite, Qdrant, Docker, Docker Compose, AWS EC2, Alembic, Git, Linux, uv

Automation and ML: n8n, Google Workspace APIs, Federated Learning, Homomorphic Encryption, Sentiment Analysis

Currently Exploring: Claude API, Model Context Protocol (MCP), Claude Code, Claude Agent SDK

EDUCATION

Ghulam Ishaq Khan Institute of Science and Technology

B.S. in Computer Science

Topi, Pakistan

Sep 2022 – Expected Dec 2026

AWARDS AND LEADERSHIP

GIKI Industrial Open House 2026: Placed 2nd in Data Science for CoreChain, a privacy-preserving federated learning platform.

HEC National IT Skill Competency Test 2026: Achieved 93.3rd percentile nationwide.