

Contact

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Top Skills

Drilling Engineering

Undergraduate Teaching

Mukhtiar Talpur

Agentic AI | LangChain | CrewAI | FastAPI | RAG | Voicebots | Multi-Agent Systems for Industrial Intelligence

Jamshoro District, Sindh, Pakistan

Summary

With a background in field drilling operations and university-level petroleum engineering instruction, I bring practical insight from the rig site and the classroom. My experience spans supervising drilling execution, casing and cementing operations, BOP testing, and mentoring students in core petroleum subjects.

Over the past year, I've transitioned into Agentic AI development—building intelligent, LLM-powered assistants using LangChain, CrewAI, Groq, LangSmith, and FastAPI. I'm currently leading AI projects such as a voice-based rig assistant for crew support and a multi-agent system designed for real-time drilling optimization. My focus is on applying agent frameworks to real-world industry challenges in energy, education, and automation.

Experience

Freelance | Self-Employed

Agentic AI Developer

July 2024 - Present (1 year 1 month)

Worldwide

Building end-to-end LLM-powered systems with LangChain, CrewAI, and Groq to deploy intelligent agents that reason, retrieve, and act autonomously. Specialized in retrieval-augmented generation (RAG), tool calling, and multi-agent orchestration using LangGraph and FastAPI backends. Projects span PDF + web-based QA systems, Telegram-integrated bots, and Streamlit dashboards for real-time AI interaction. Strong focus on vector store management (FAISS, Chroma), prompt engineering, and LangSmith observability. Solutions delivered for use cases in education, drilling operations, and automation workflows.

Mehran University of Engineering & Technology, Jamshoro

Assistant Professor

January 2010 - July 2025 (15 years 7 months)

Jamshoro, Sindh, Pakistan

Orient Petroleum Pty Limited

Drilling Engineer

November 2006 - November 2008 (2 years 1 month)

Pakistan

I supervised daily drilling operations to ensure safe, efficient, and cost-effective execution. My responsibilities included overseeing BHA and bit selection, casing and liner running, cementing, and BOP pressure testing. I ensured compliance with HSE standards and coordinated with rig teams and service providers to align fieldwork with head office directives.

Education

Mehran University of Engineering and Technology

Master's degree, Petroleum Engineering · (September 2016 - September 2018)

Mehran University of Engineering and Technology

Bachelor's degree, Petroleum Engineering · (January 2002 - 2005)