

# Omar Farooq

**Location:** DHA Lahore

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## PROFESSIONAL EXPERIENCE

### Freelancer

April 2024-Present

- Algorithmic options trading using Charles Schwab API.
- Speech-based chatbots and agentic workflows.
- Requirement analysis and development of a platform for innovating technology education.

### Educative.io, Lahore, Pakistan

#### Technical Engineer, Data Science Projects

September 2022-April 2024

- Developed 14 projects and collaborated with third-party contributors for a further five.
- Performed and incorporated code reviews.
- Maintained detailed documentation and explanation of written code.
- Helped iteratively develop the team's policy for AI/ML projects.

#### Notable Projects:

- Abstractive & extractive summarizations: Performed research paper summarization using BART, T5, GPT-3.5, and a modified version of the TextRank algorithm that uses Transformer embeddings.
- Image Compression: Created an image compression algorithm that uses a variant of the KMeans algorithm and bitwise manipulation. The module was shipped as a web application created using Holoviz Panel.
- Interactive PDF Reader: Created a small web application PDF reader using Streamlit. A chatbot created using LangChain enables the learner to discuss the document's content via chat.

### FAST National University, Lahore, Pakistan

#### Research Assistant

March 2022- July 2022

- Performed a series of POCs to create a complete pipeline for call center automation. The final product featured a RAG based chatbot developed with LangChain that answers queries based on conversation histories at the actual call center.

### MAN Energy Solutions, Lahore, Pakistan

#### Engineer

April 2018 – September 2019

- Commercial vehicle service, workshop compliance, warranty management, and leading from the front.
- **Project:** Tools Issuance Website: Developed in ASP.NET with Bootstrap for front-end design and MS SQL server for storage. It included functionality for multiple user logins, user management, multiple departments, a tools catalog, and a dashboard.

## EDUCATION

### FAST National University, Lahore

2019-2023

#### Master's of Science in Data Science

**Thesis:** Speech Recognition for Urdu: Collaborated with an AgriTech company for call center automation. Procured an audio dataset consisting of 1000 hours of speech, transcribed and prepared it for model training. Trained multiple Urdu speech recognition models, achieving a best Word-Error-Rate of 17%.

**Relevant Coursework:** Deep Learning, Machine Learning, Applied Image Processing, Natural Language Processing, Cloud Computing, Applied Programming, Statistical and Mathematical Methods for Data Science, Object-oriented Programming, Design and Analysis of Algorithms, Data Structures, Database Systems.

### GIK Institute, KPK, Pakistan

2011-2016

#### Bachelor's of Science in Materials Science

**Final-year project:** Silver Nanowires for Flexible Solar Panel Electrode Synthesis.

**Relevant coursework:** Calculus, Differential Equations and Linear Algebra, Numerical Analysis, Engineering Economy, Engineering Statistics, Circuit Analysis, Materials Thermodynamics, Nanomaterials, Nanomaterials for Energy, Electronic & Magnetic Materials, Operations Management, Technology Management.

## ADDITIONAL INFORMATION

**Data Skills:** Extensive expertise in Python (Pandas, NumPy, Scikit-learn, PyTorch, Tensorflow), and SQL, as well as experience with big data tools such as PySpark. Skilled in data visualization (Plotly, Matplotlib, Seaborn) and dashboarding (Streamlit, Gradio, Panel, Django, ASP.NET). Familiarity with RESTful API development with FastAPI, and containerization with Docker. Extensive experience creating LLM workflows with LangChain.