MUHAMMAD UMAIR FAROOQ

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PROFILES

LinkedIn:
https://www.linkedin.com/in/umairfaroq/

GitHub:
https://github.com/Umair-Farooque

Education

Bachelor of Science: Artificial Intelligence, 2025
Air University – Islamabad**,** Pakistan

KEY SKILLS

- **Programming Languages:** Python, C++, C.
- **Deep Learning Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, XGBoost
- **MLOps & Deployment:** Docker, FastAPI, Flask, Streamlit, Gradio, MLflow
- **LLM Tools**: OpenAI API, RAG systems, LangChain Agents
- **Programming Libraries:** NumPy, Pandas, OpenCV, Transformers (Hugging Face), LangChain, NLTK, spaCy, Langchain
- **Databases:** MYSQL, SQL-lite
- **Vector Databases:** ChromaDB, FAISS, Pinecone
- **Web Frameworks and UI Tools:** Gradio, Streamlit
- **Cloud & DevOps Platforms:** AWS (Lambda, SageMaker), CPanel, GitHub
- **Configuration Management**: Git, Github
- **Data Visualization**: Matplotlib, Seaborn, Plotly
- **Other Relevant Tools:** Jupyter, VSCode, Google Colab, Airflow (for ML pipelines)

Work History

Machine Learning Intern June 2024 - August 2024 **ZAA Soft Islamabad**

- Gained a foundational understanding of Generative AI concepts and applications.
- Developed AI applications using Large Language Models (LLMs) using OpenAI models, Transformers, and Hugging Face models.

- Worked with vector databases including ChromaDB, FAISS, and Pinecone to implement efficient data retrieval systems.
- Built user interfaces (UI) for AI applications using Gradio and Streamlit.
- Created various AI-driven applications, including:
- Story generation tools.
- Image captioning models.
- Text-to-image generation systems.
- Retrieval-Augmented Generation (RAG) systems.

Machine Learning Engineer May 2025 - Current **Fiverr/Upwork**

- Developed end-to-end AI systems using OCR, Python automation, and document parsing for credit enrichment and quiz checking.
- Built and deployed a GPT-based educational chatbot using LangChain, Transformers, and Pinecone for dynamic course interaction.
- Implemented quiz generation, course outline creation, and multi-level learning logic with user progress tracking.
- Designed full-stack AI applications with FastAPI and Streamlit, integrating front-end widgets and backend model inference.
- Gained hands-on experience with vector databases, RAG pipelines, prompt engineering, and API integrations in real-world projects.

Projects

Neuro-Flex: Neural Flexibility for Limb Control via EMG Signals

Final Year Project | Air University |

- Developed a deep learning-based system to classify **24 hand and wrist movements** from EMG signals using the **NinaPro DB1 & DB5 datasets**.
- Built and deployed a real-time **FastAPI inference server** to predict movement labels from incoming EMG data.
- Created a **3D prosthetic hand simulation in Blender**, animating predicted motions using Python scripting.
- Achieved ~80% test accuracy and integrated the system into a real-time visualization pipeline via ngrok.
- Tech Stack: **Python**, **PyTorch**, **FastAPI**, **Blender**, **ngrok**, **LSTM**, **JSON**

Credit Enrich System – AI-Powered Creditworthiness Automation

Machine Learning Engineer | Python, OCR, Numpy, Pandas, gspread, PyAutoGUI, Regex

- Developed an end-to-end automated system for enriching creditor financial profiles using AI and document parsing.

- Integrated **OCR pipelines** and regex logic to extract financial fields from scanned documents.
- Automated data entry into **Google Sheets** using **gspread** and UI automation (PyAutoGUI).
- Cleaned, validated, and structured data for downstream creditworthiness prediction models.
- Improved processing time by over 60% compared to manual workflows.

AI Learning Assistant – Educational Chatbot Platform

Machine Learning Engineer | LangChain, Transformers, OCR, FastAPI, Streamlit, Pinecone

- Built a **GPT-based AI chatbot** trained on course material using **LangChain + embedding retrieval**.
- Designed a **quiz generation engine** using NER and summarization techniques from Hugging Face Transformers.
- Implemented **quiz checking tool** with and without OCR support for scanned answer sheets.
- Created dynamic **course outline generation** using LLMs and custom prompt templates.
- Enabled **learning-by-levels** and **progress tracking** via persistent user session states.
- Integrated the AI assistant into a **web widget frontend** using **Streamlit** and **FastAPI** backend.
- Deployed embeddings in **Pinecone** for efficient retrieval across different learning modules.

Generative AI Applications Suite

Crafted an extensive suite for Generative AI Applications utilizing state-of-the-art technologies. This includes:

- **Story Generation Tool:** Developed a system that generates creative stories using Large Language Models (LLMs) like OpenAI models, providing users with engaging and dynamic narratives.
- **Image Captioning Model:** Implemented an advanced image captioning model to generate descriptive captions for images, leveraging Hugging Face Transformers and diffusion models for enhanced accuracy.
- **Text-to-Image Generation System:** Created a powerful tool that converts textual descriptions into images, harnessing the potential of diffusion models and CLIP for detailed and realistic image generation.
- **RAG System:** Engineered a system that combines traditional information retrieval with generative models, utilizing vector databases like ChromaDB, FAISS, and Pinecone to enhance the relevance and accuracy of generated content.