Muhammad **Iftikhar**

Junior · Machine Learning Engineer

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Summary

I am an experienced AI Engineer in Pakistan with a strong background in machine learning,deep learning and Generative AI. I specialize in time series domain,Generative AI domain and have a proven track record of developing and implementing high-performance models to solve complex business problems. With over 2 years of experience in Data Science, I am adept at data preprocessing, feature engineering,model selection and model deployment. I have a passion for working in the AI field and always eager to take on new challenges. I am confident in my ability to apply my skills and experience to tackle complex AI problems and drive innovation. I am seeking a challenging role in the field of AI where I can continue to develop my skills and make a meaningful contribution to the industry.

Work Experience

RevolveAI

Islamabad, Pakistan

Machine learning Engineer — *Aug. 2023 - Present*

- As a Machine Learning Engineer, I was involved in various AI projects, with the major project being NolixAI, which encompassed multiple AI sub-projects. TrapX is an AI project for capturing mice, PipeX is a project for detecting leakage coordinates in pipes, and DripX is an AI project for detecting commodity leakages. All these AI projects were deployed on edge devices, which are connected to a user app that updates users on the leakage status in their homes. Technologies involved in this project include **deep learning models**, **TensorFlow, quantization techniques**, **Docker**, **Redis**, **CNN model**, **Python**, **Raspberry Pi**,**feature engineering**.
- Another major project is Oddson, which is an NLP and LLM-based project. It scrapes real-time documents from different crawlers and applies RAG operations. The website includes a chatbot where users can interact with documents and modify them according to their use case. At the backend, we save the embeddings in a vector database and store the text in MongoDB. Technologies involved in this project include **FastAPI**, **RAG**, **Vector Databases Pinecone**, **NLP Techniques**, **LLM**, **Redis**, **MongoDB**, **AWS (EC2, S3 bucket)**,**Docker**.
- Another project is Caroogle. This project involved scraping data from highly secure websites from different sources related to used vehicles, extracting relevant information, and saving it in a MySQL database. We created a highly scalable pipeline for fetching features from the database, performing feature engineering, and predicting car prices based on their current condition. The system sends a message to the app with recommendations on whether a car should be bought, including risk analysis. Technologies involved in this project include **Python**, **FastAPI**, **Selenium**, **WebDriver**, **ZenRows**, **machine learning and deep learning models**, **Redis Queue**, **GCP Compute Engine**, **AWS(ec2,ecr,efs,s3,lambda function)**, and **Docker**

DeepChain Solutions

Islamabad, Pakistan

Junior AI Research Engineer — *Oct. 2022 - Aug. 2023*

- As a Junior AI Research Engineer at DeepChain Solutions, I worked on developing AI solutions for various use cases in Industry 4.0.
- Specialized in time series forecasting and classification, with a focus on ensuring the robustness and optimization of models.
- Worked on supply chain projects involving process change detection, predictive maintenance, forecasting the end of the life cycle, and anomaly detection.
- Trained various machine learning models for time series forecasting and classification, including **DeepAR**, **ARIMA**, **SARIMA**, **TCN**, **XGBoost**, and transformer-based models like **Temporal Fusion Transformer**, deep learning models like **RNN** and **LSTM**, and contrastive learning using **Siamese neural networks**. Actively participated in the entire project lifecycle, from gathering requirements to data preparation, model training, optimization, and deployment.
- Conducted thorough analysis and evaluation of the models to ensure their effectiveness and efficiency in solving complex business problems.
- Continuously stayed up-to-date with the latest developments in AI and implemented best practices to improve model performance and accuracy.

Dviz Technologies

US-Based, Remote

Internship Junior Python Developer — *Feb. 2022 - Sept. 2022*

- As a Junior Python Developer at Dviz Technologies, I was responsible for creating data-driven applications to automate business functions.
- Proficient in using various tools for automation and web scraping, including Scrapy, Selenium, Playwright, Flask, and Django.
- Designed and implemented REST APIs to support data-driven applications and ensure efficient data retrieval and manipulation.
- Collaborated with cross-functional teams to gather requirements and understand business needs.
- Built and maintained automated testing frameworks to ensure that code was thoroughly tested and error-free.
- Kept up-to-date with the latest developments in the Python ecosystem and implemented best practices to improve code quality and maintainability.

Fast University

Pakistan

Teacher Assitant & Theory of Automata — *Jan. 2020 - Aug. 2021*

- As a Teacher Assistant for Theory of Automata, responsible for delivering lectures and facilitating discussions on topics related to web scraping, regular expressions, and automation tools.
- Taught students how to use Beautiful Soup and Selenium for web scraping and data extraction, and provided hands-on examples and exercises to reinforce their learning.
- Designed and delivered lectures on regular expressions, covering topics such as pattern matching, character classes, and repetition operators, and checked assignments related to these topics.

Education

Fast University(FAST NUCES) *Pakistan*

B.S. in Computer Science, **Bronze Medalist** *Jan. 2018 - Jan. 2022*

- I am proud to have achieved a **CGPA of 3.12** during my time at university. Additionally, I was honoured to receive two bronze medals for my outstanding academic achievements.

Punjab Collage (PCIT) *Islamabad*

Faculty of Science (FSC) *Jan. 2016 - Jan. 2018*

- I achieved the 3rd position in my college for my academic performance. I obtained a total of 908 out of 1100 marks

Project

Law chatbot using LLM *Project link*

Python, NLP, Generative AI

- Law ChatBot is an on-demand project designed to assist civilians or individuals planning to visit other countries who may not be familiar with the local laws. The project utilizes a large Language Model (LLM), which has been re-trained on a comprehensive dataset containing the legal data of each country. The project is implemented as a web-based application, providing users with a user-friendly interface to enter their queries. The backend of the application is powered by a langchain ,FastAPI-based application, which handles the processing of user queries and generates responses based on the input provided

Face Swapping for images and Videos *Github link*

Generative AI Technologies

- This project was initiated from idea to deployment. Essentially, it was developed as a Video Chat Application allowing users to change faces during calls and select desired faces of the opponent callers. Face detection and swapping were achieved using generative AI Deep Fake models, enabling seamless transitions.

Sarcastic Detection using NLP *Github link*

Python, Deep Learning,NLP

- The Sarcastic Detection project essentially detects sarcastic voice, tone, or text from user input. The project is implemented using the Python language and applied RNN-LSTM's deep learning model for the classification of sarcastic text. The dataset is publicly available and scraped from Twitter tweets and other social media platforms

Text to Speech for regional Language *Github link*

Python, Natural language Processing

- This is the final year project of Bachelor's degree.The domain of Text to speech system for Regional language project is Natural language project. Text-to-speech (TTS) is an assistive technology that reads digital text aloud. It's sometimes called "read-aloud" technology. With a click of a button or the touch of a finger, TTS can take words on a computer or other digital device and convert them into audio.

Skills

- **Artificial Intelligence**: Generative AI Models,Machine learning Models, Deep learning Models, Time series Forecasting Sequence Models, Computer Vision , Large language Models(LLM), Diffusion Models,Encoder-Decoder Architecture.
- **Programming languages**: Python, C++, Julia, Java
- **Web languages**: HTML, CSS, JavaScript, Nodejs, Bootstrap, Flask, Django, MySQL,FastAPI
- **Databases**: skilled in designing and implementing databases in MySQL, MongoDB,Redis and SQL Server.
- **Libraries/Framework**: Pandas, Numpy, Scikit-learn, Tensorflow, torch, pytorch, Darts, Matplotlib, Seaborn ,Chrome Driver, Selenium, Scrapy, Playwright, FastAPI, Flask, Pydantic Models, Plotly, Redis.
- **Cloud Services**: AWZ service,EC2,S3,Lambda,DocumentDB, google cloud service, and Azure Cloud Service.
- **Tools/Platforms**: Git, Docker, Jenkins, Docker-compose, Kubernetes, AWS Lambda function, Redis Queue,API microservices, serverless AWS Lambda functions, CloudWatch.

References

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