

Contact

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(LinkedIn)

Top Skills

LangChain
LLaMA
FastAPI

Certifications

Graph Search, Shortest Paths, and
Data Structures
React NanoDegree
Lumen Microservices

Talha Turab

Sr. Machine Learning Engineer | AI | Data Science | NLP/ NLU |
Generative AI | LLMs | Prompt Engineering | Machine Learning |
Python
Lahore, Punjab, Pakistan

Summary

Experienced Senior Data Scientist with a proven track record of developing advanced models and solutions to drive business growth. Skilled in machine learning, natural language processing, and computer vision. Successfully developed and implemented credit scoring models, content moderation systems, and influencer marketing tools. Strong business acumen with a passion for leveraging data to solve complex problems. Enjoys collaborating with teams to achieve common goals.

Skills: Python | Pandas | SQL | Numpy | Matplotlib | Seaborn | scikit-learn

Experience

NETSOL Technologies Inc.

Lead Machine Learning Engineer

September 2023 - Present (2 years 4 months)

Lahore, Punjab, Pakistan

- Fine-tuned open-source models (DeepSeek, Mistral, and Llama) using LoRA, PEFT, Adapters, and bfloat16 methodologies, enhancing model personas and aligning brand identity; implemented real-time knowledge updates via RAG on fine-tuned models to ensure accurate and brand-consistent interactions.
- Built automated LLM fine-tuning pipeline, achieving a 23% improvement in GPT-3 responses compared to GPT-4.
- Built interactive agentic workflows using pydantic, Langgraph, llama index and developed backend services in FastAPI, creating RESTful APIs and robust database integrations.
- Developed, deployed, and optimized robust ML models primarily on AWS infrastructure including SageMaker, EC2, and S3.
- Developed and deployed machine learning pipelines leveraging Azure Machine Learning for predictive analytics and automated model deployment.
- Integrated data processing pipelines using Azure Databricks and Synapse Analytics, improving data ingestion speed and accuracy.

- Integrated RAG and Neo4j knowledge graphs, n8n workflows improving financial risk assessment accuracy.
- Architected AI Voice System, reducing conversational latency from 7s to <2s with Twilio WebSockets, custom VAD, and NER models; achieved a 95% cost optimization.
- Developed a credit score model for BMW to optimize decision-making and predict delinquency with 85% accuracy.
- Developed chatbot and recommendation engine for BMW, delivering seamless customer interactions and increasing engagement by 40%.
- Improved LLM response quality by 85% through advanced prompt engineering and RLHF.
- Built intelligent OCR-driven LLM workflows for automated resume screening, reducing shortlisting time by 85%.
- LangChain and LangGraph to orchestrate multiple agents, tools, and functional calling operations, effectively handling complex resume evaluation processes.
- Integrated fine-tuned open-source and API-based autoregressive LLMs (GPT-4 Turbo, LLaMA 2, Falcon-7B) to perform nuanced candidate evaluations.

WALEE

Sr. Data Scientist

August 2020 - September 2023 (3 years 2 months)

Islamabad, Islāmābād, Pakistan

- Credit Scoring Model for Hakeem Finance Bank: Developed an AI-driven credit scoring system for Hakeem Finance Bank, a subsidiary of Walee Financial Services, achieving a 95% accuracy rate in predicting customer defaults. This model incorporated advanced feature engineering, behavioral risk analysis, and model interpretability layers, significantly reducing default rates and enhancing loan approval processes.
- Utilized XGBoost, CatBoost, and ensemble methods to build predictive models that classified applicants based on their likelihood of timely repayment.
- Incorporated demographic, behavioral, and transactional data to improve model precision and reduce false positives.
- Delivered comprehensive model documentation, explainability reports, and performance dashboards to ensure transparency and ease of integration with internal systems.
- Engineered predictive time-series models (Prophet, LSTM) and RLHF pipelines, reducing underwriting processes from weeks to minutes.

- Improved document retrieval accuracy by implementing advanced hybrid search methodologies and integrating specialized tools such as Docling, LlamaParser, and Mistral OCR, resulting in faster and more precise document indexing and extraction.
- Developed customized RAG solutions tailored for specific use cases, including Naive RAG, Retrieve-and-Rerank, Multimodal RAG, Graph RAG (structured knowledge graphs for deeper contextual understanding), Hybrid RAG, and Agentic RAG (Router & Multi-Agent systems)
- Engineered an automated content moderation system for a short-form video platform , which reduced negative content by over 85%. Implemented Transformer vision and YOLO models capable of detecting and filtering inappropriate content
- Built a short video recommendation model increasing user engagement time by up to 50%. Leveraged collaborative filtering and content-based filtering techniques to suggest relevant videos to users.

OnRegle / Heuristics

Machine Learning Engineer

November 2018 - August 2020 (1 year 10 months)

Data Gathering Through Network Calls and Web Scraping:

Applied advanced techniques in manipulating network calls and executing web scraping to gather valuable data. This initiative significantly enriched the data ecosystem, providing comprehensive insights crucial for strategic decision-making.

OCR Technology Implementation for PDF Data Extraction:

Successfully implemented OCR (Optical Character Recognition) technology to extract tables and data from PDF files. This initiative streamlined data retrieval processes, improving efficiency in handling diverse document formats and contributing to more accurate and accessible data for analysis within the influencer marketing domain.

ETL Process Implementation:

Implemented a robust ETL (Extract, Transform, Load) process, optimizing the flow of data within the influencer marketing ecosystem. This initiative enhanced data integration, quality, and accessibility, ensuring that the organization had a well-structured and updated repository for informed decision-making and analysis.

British Airways

Data Scientist

April 2018 - May 2018 (2 months)

- Web scraped customer reviews and Developed a TF-IDF based word cloud to identify and address the pain points of customers
- Developed a Model having 97% Precision to identify if a customer will buy a ticket or not

KPMG

Audit Associate

February 2016 - March 2018 (2 years 2 months)

- Generated financial statements including cash flow charts and balance sheets.
- Supervised and developed associates and oversaw auditing activities across operational, personnel utilization, and excessive billing areas.
- Saved costs up to 50% by getting complied with all federal and state legal requirements.

Education

Thomas Edison State University

Bachelor of Science - BS, Computer Science · (June 2015 - September 2019)

Lahore University of Management Sciences

Master of Science in Artificial Intelligence · (October 2023 - December 2026)

Dataquest.io

Data Scientist in Python,

DataCamp

Data Scientist With Python

Udacity

Data Analyst