

# Muhammad Wasif Ijaz

## Data Scientist | Machine Learning Engineer

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### PROFESSIONAL SUMMARY

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Data Scientist with 4+ years of end-to-end experience building and deploying machine-learning solutions in production environments across hospitality tech, SaaS, and AI-driven platforms. Master's graduate (Distinction) from Middlesex University with a thesis on LSTM-based time-series forecasting for hotel booking and cancellation prediction. Hands-on expertise across the full ML lifecycle—feature engineering, model selection (LSTM, SVM, ensemble/tree-based models, clustering), backtesting, and deployment via Python and cloud infrastructure. Proven ability to translate messy, real-world datasets into reliable, decision-driving tools that move from research prototype to production workflow.

### TECHNICAL SKILLS

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**Machine Learning:** scikit-learn, TensorFlow, PyTorch, Keras • LSTM, SVM, K-Means, XGBoost, Random Forest, Gradient Boosting

**Python Ecosystem:** pandas, NumPy, SciPy, Matplotlib, Plotly, Streamlit, FastAPI/Flask • MLflow (experiment tracking)

**Time-Series & Stats:** ARIMA, LSTM forecasting, hypothesis testing, statistical validation, backtesting frameworks

**Data Engineering:** SQL Server, PostgreSQL, MongoDB, Azure Cosmos DB, Elasticsearch, API integrations, ETL pipelines

**Cloud & MLOps:** Azure (ML Studio, Data Lake, App Services) • AWS (EC2, S3, RDS, Lambda) • Docker, Git

**Analytics & BI:** Power BI (DAX, semantic models), Tableau, Excel • Revenue, pricing & demand analytics

### PROFESSIONAL EXPERIENCE

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**IOL World** – Dubai, UAE

**Data Scientist / Senior Data Analyst** | May 2024 – Present

- Built and owned forecasting and predictive models for supply–demand analysis and revenue optimisation in hospitality, contributing to platforms projected to deliver 10–30% revenue uplift.
- Designed end-to-end ML and ETL pipelines integrating structured (SQL Server, PostgreSQL) and unstructured (ElasticSearch logs, Cosmos DB) data sources to feed analytical and predictive workflows.
- Developed ARI and BML analytical models supporting dynamic pricing strategy and rate optimisation—applying regression and tree-based techniques to large, multi-source datasets.
- Built anomaly-detection and booking-behaviour analysis modules enabling real-time issue investigation for operations and product teams.
- Delivered custom ML-driven insights for major industry events (ITB Spain, WTM Dubai, WTM London), translating model outputs into actionable commercial intelligence.
- Mentored data science interns on model development, experiment tracking with MLflow, and production-readiness standards.

**Codistan Ventures** – Islamabad, Pakistan

**AI / ML Engineer – Team Lead** | Oct 2021 – Oct 2023

- Promoted to Team Lead within 6 months; led delivery of 25+ production ML projects spanning NLP, computer vision, time-series forecasting, and classification domains.
- Designed and shipped predictive analytics systems for major US sports leagues (MLB, NFL, NBA, NHL)—covering automated feature engineering, ensemble/tree-based model training, backtesting, and scheduled pipeline execution on AWS.
- Built and deployed Python ML services (FastAPI/Flask on EC2/Lambda) handling model inference, data ingestion, and automated performance monitoring for client-facing products.
- Applied NLP (sentiment analysis, text classification) and computer vision pipelines (OpenCV, PyTorch) to production projects, integrated with MongoDB and S3 data stores.

- Collaborated directly with international clients to translate business requirements into scalable ML architectures; maintained post-deployment model performance.

## **VisionX Technologies** – Islamabad, Pakistan

**Python / Data Engineering Intern** | Aug 2021 – Oct 2021

- Built Python data-scraping and processing pipelines for logistics tracking; developed REST APIs for real-time data synchronisation and reporting.

## **EDUCATION**

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### **Master's in Data Science — Distinction**

Middlesex University, Dubai, UAE • 2023–2024

*Thesis: Predictive Analytics for Hotel Bookings and Cancellations using LSTM Time-Series Analysis*

### **Bachelor's in Computer Engineering — Gold Medalist**

Bahria University, Islamabad, Pakistan • 2018–2022

*Final Year Project: Deep Learning-based Person Re-Identification using Computer Vision (OpenCV, PyTorch)*

## **CERTIFICATIONS**

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- DP-100: Azure Data Scientist Associate – Microsoft
- PL-300: Microsoft Power BI Data Analyst Associate – Microsoft
- AWS Machine Learning Foundations – Amazon Web Services
- HackerRank: SQL (Advanced), Python, Problem Solving

## **KEY ML PROJECTS**

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### **LSTM Time-Series Forecasting – Hotel Booking & Cancellation Prediction**

Built and validated an LSTM-based forecasting system on real hospitality data covering temporal feature engineering, hyperparameter tuning, backtesting against historical actuals, and model performance reporting. (Master's thesis)

### **Predictive Analytics Pipelines – MLB, NFL, NBA, NHL**

Designed automated ML pipelines (Python + AWS) for sports outcome forecasting using ensemble and tree-based models. Delivered scheduled model inference, result aggregation, and client-facing analytics outputs.

### **LLM-Powered Hospitality Analytics Chatbot (In Progress)**

Building a RAG-based chatbot using vector databases and LLMs for natural-language queries over bookings, pricing, and performance data. Focused on optimising RAG pipelines and scaling vector search. → [github.com/wasifijaz](https://github.com/wasifijaz)

### **Person Re-Identification – Deep Learning / Computer Vision**

Implemented a multi-camera person re-ID system using convolutional networks (PyTorch, OpenCV) with feature extraction and distance-metric learning. Published on GitHub.