

# Muhammad Dawood Khan

MLOps Engineer | Machine Learning Engineer | Data Scientist

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## PROFESSIONAL SUMMARY

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MLOps-focused Data Science student building production-grade ML systems end-to-end. Hands-on experience with experiment tracking (MLflow), data versioning (DVC), containerization (Docker), and REST API deployment (FastAPI, Railway). Proven track record delivering real projects: a deployed property valuation API with uncertainty-aware predictions, a medical imaging segmentation pipeline achieving 0.92 Dice score, and active PhD thesis collaboration in NLP. Seeking MLOps, ML Engineering, or Data Science roles where I can ship models to production, not just notebooks.

## TECHNICAL SKILLS

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**MLOps & Deployment:** MLflow, DVC, Docker, FastAPI, Railway, CI/CD, REST APIs, Git, uv (Astral)

**ML / DL Frameworks:** PyTorch, TensorFlow, Scikit-learn, LightGBM, XGBoost, CatBoost, Optuna, TabNet

**Languages:** Python, Bash

**Data Engineering:** Pandas, NumPy, Feature Engineering, EDA, Bayesian Target Encoding, Quantile Regression

**Infrastructure:** Ubuntu Linux, PostgreSQL, Docker Compose, Railway, GitHub Actions

## PROJECTS

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**propval-pk — Pakistan Property Valuation API** | *LightGBM · MLflow · DVC · FastAPI · Docker · Railway* 2024 – Present

- End-to-end MLOps pipeline for real estate price prediction on Zameen.com dataset; Dockerized and live-deployed to Railway
- Bayesian target encoding for high-cardinality location features; LightGBM with quantile regression for uncertainty-aware predictions
- MLflow experiment tracking with DVC data versioning; FastAPI REST endpoint for real-time inference

**Brain Tumor Segmentation — Medical Imaging** | *PyTorch · ResNet-34 · Semantic Segmentation* 2024

- 2D semantic segmentation pipeline using ResNet-34 encoder backbone in PyTorch for MRI brain tumor delineation
- Achieved 0.92 Dice score on held-out test set; custom training loop with mixed-precision, augmentation pipeline, and checkpoint management

**textile-scheduler — Production Web App** | *FastAPI · React · Vite · Docker · Railway* 2025

- FastAPI + React/Vite monorepo deployed end-to-end on Railway; resolved CORS, Docker layer caching, and build pipeline issues

**SOFTEC 2026 ML Competition** | *LightGBM · XGBoost · CatBoost · TabNet · PyTorch · Optuna* 2025

- Built full ensemble pipeline: LightGBM, XGBoost, CatBoost, HistGradientBoosting, TabNet, and PyTorch MLP with Optuna hyperparameter tuning

**PhD Thesis Collaboration — NLP Research** | *PyTorch · Scikit-learn · NLP* 2025 – Present

- Executing four ML and NLP research objectives; responsible for model development, experiment design, results analysis, and academic writing contributions

**Image Classification — Client Project** | *PyTorch · Transfer Learning · ResNet* 2024

- Fine-tuned ResNet via transfer learning on STL-10; delivered reproducible training pipeline with evaluation metrics and configuration management

## EDUCATION

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### Bachelor of Science in Data Science

Sep 2024 – Sep 2028 (Expected)

Riphah International University, Lahore, Pakistan — 4th Semester

- Relevant coursework: Linear Algebra, Probability & Statistics, Data Structures & Algorithms, Databases, Analysis of Algorithms

## CERTIFICATIONS

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PyTorch for Deep Learning — Zero To Mastery Academy	2025
TensorFlow for Deep Learning — Zero To Mastery Academy	2025
AI Agents — Zero To Mastery Academy	2025
Machine Learning — Zero To Mastery Academy	2024–2025
IoT Fundamentals — Cisco Networking Academy	2024