Zulqarnain Ali

Machine Learning Engineer & AI Researcher

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Employment

Python Developer, Shipd (Remote)   Jun 2025–Present
- Develop production-grade Python solutions for AI model training on elite invite-only platform
- Engineer high-performance algorithms serving as benchmarks for coding proficiency evaluation
- Ranked among top 5% contributors for code quality and complex problem-solving capabilities
- Collaborate with global teams establishing best practices for scalable Python codebases

Machine Learning Engineer, Seath General Trading Company (Hybrid)   Jan 2025–Aug 2025
- Developed and deployed machine learning models to optimize supply chain and procurement processes, improving efficiency and decision-making
- Collaborated with cross-functional teams to transform data into actionable insights and automated solutions
- Implemented scalable ML solutions using Python, TensorFlow, and related tools while ensuring compliance with government data standards

Database Operations Manager, PRIME HONDA (Bahawalpur)   Jun–Oct 2023
- Spearheaded database restructuring initiative, improving retrieval speed by 25%
- Implemented automated validation protocols, reducing error rates by 35%

Education

Bachelor of Science in Data Science   2022–2026
The Islamia University of Bahawalpur, Pakistan
GPA: 3.60

Projects

Zeffy: Advanced AutoML Pipeline   [GitHub] May 2025
- Developed an automated ML pipeline integrating feature engineering, hyperparameter tuning, and ensembling
- Simplified high-performance model development with a modular Python-based architecture

SepsisGuard: Pediatric Early Detection System   [GitHub] Feb 2025
- Built ML system predicting pediatric sepsis 6 hours before diagnosis (AUC: 0.983)
- Designed interpretable Random Forest model for real-time PICU deployment

Aerosol Optical Depth Estimation from Satellite Data   [GitHub] Dec 2024
- Combined Sentinel-2 imagery with AERONET data achieving 0.964 Pearson correlation
- Developed CatBoost-based methodology for atmospheric aerosol monitoring

PII Data Detection   [GitHub] Aug 2024
- Developed automated ML/NLP pipeline to detect and anonymize personally identifiable information in educational datasets
- Ensured compliance with FERPA, GDPR, and CCPA while preserving analytical value of data

PUBLICATIONS

3. **Zulqarnain Ali.** (2025). Intelligence Without Consciousness the Rise of the IIT Zombies. *Preprint*. [DOI]

2. **Zulqarnain Ali.** (2025). Quantifying Consciousness in Transformer Architectures: A Comprehensive Framework Using Integrated Information Theory and ϕ^* Approximation Methods. *Preprint*. [DOI]

1. **Zulqarnain Ali.** (2024). A CatBoost-Based Approach for Aerosol Optical Depth Estimation Using Multi-Spectral Sentinel-2 Data. *Journal of Remote Sensing Applications*. [Link]

AWARDS & RECOGNITION

Competition Medals   2023–2025
- Kaggle: Jane Street (Bronze, 2025), BirdCLEF (Bronze, 2024), RSNA (Bronze, 2024), Home Credit (Bronze, 2024), LLM - Detect AI Generated Text (Bronze, 2024)
- Zindi: CGIAR Root Volume (Gold, 2023), ITU AI/ML 5G (Bronze, 2023), Lacuna Solar Survey Challenge (Bronze, 2025), Specializing Large Language Models for Telecom Networks (Bronze, 2024) [Profile]
- Solafune: GREEN Star for Aerosol Estimation (2024), Bronze Star For Field Area Segmentation (2024) [Profile]

Academic & Professional Recognition   2023–2025
- Emerging Researcher Award, Data Science Department, IUB (2025)
- Winner, TechQuest 2024 Data Science Competition, IUB BWP
- Youth Laptop Award, issued by PM Shehbaz Sharif, Government of Pakistan (2023)

TECHNICAL SKILLS

Programming Languages: Python, C++, SQL, JavaScript, HTML
Machine Learning: PyTorch, TensorFlow, Scikit-learn, Deep Learning, Transfer Learning
Specialized Domains: Computer Vision, NLP, Remote Sensing, Healthcare AI
Data Tools: Pandas, NumPy, Matplotlib, Sentinel-2, ETL Pipelines
Development: API Development, Model Deployment, Performance Optimization

PROFESSIONAL DEVELOPMENT

Certifications [Full List]
- Google Business Intelligence Specialization, Google
- IBM Data Science Specialization, IBM
- IBM AI Enterprise Workflow Specialization, IBM
- Applied Data Science Lab, WorldQuant University
- Applied AI Lab, WorldQuant University

VOLUNTEER EXPERIENCE

ML Mentor, Topmate.io (Remote)   Jul 2025–Present
- Provide guidance to students and peers in the ML/DS field
- Offer career advice, project feedback, and portfolio support

Fundraising Coordinator, Itthad Business City   Jun–Oct 2023
- Organized and led fundraising campaigns to support business initiatives
- Coordinated with teams to maximize donor engagement and contributions