

FAISAL HAKIMI

AI & Machine Learning Researcher · Graph Neural Networks · Applied AI Systems

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RESEARCH INTERESTS

Graph Neural Networks · Spatiotemporal Modelling · Transport Network Resilience · Deep Reinforcement Learning · LLM Evaluation & Reliability · Retrieval-Augmented Generation · Agentic AI Systems · Cascading Failure Analysis

PUBLICATIONS & RESEARCH

Climate-Driven Disease Surveillance via Spatiotemporal GNN with Causal Discovery *Accepted & Presented · ICHR-26*

Interpretable spatiotemporal Graph Neural Network with causal discovery modelling relationships between climate variables and regional disease outbreak patterns across Pakistan. Awarded 1st Place with Cash Prize and Certificate of Excellence, 6th International Public Health Conference, KMU 2026.

Closed-Loop AI Therapeutics: Deep Reinforcement Learning for Autonomous Insulin Dosing *Accepted & Presented · ICHR-26 · Manuscript in Preparation*

Soft Actor-Critic agent within a digital twin simulation for autonomous insulin delivery, optimized for Ramadan fasting and high-glycemic South Asian diets. Reduced post-Iftar hyperglycemic excursions by 35 mg/dL; zero severe hypoglycemia versus 4.5% failure rate in standard protocols; outperformed clinical sliding-scale protocols in 92% of simulated scenarios.

LLM Hallucination Benchmarking Framework *Ongoing · Manuscript in Preparation*

Statistical evaluation framework for assessing large language model factuality and reliability across multiple dimensions. Research Assistantship, Institute of Management Sciences. Co-author.

Bayesian Optimization for Basket Trading *Manuscript in Preparation*

Quantitative asset allocation algorithm using Bayesian optimization to maximise risk-adjusted returns. Robust out-of-sample performance with reduced overfitting versus baseline strategies.

PROFESSIONAL EXPERIENCE

Lead Researcher *Jan 2026 - Present*

Digging Deeper Insight UK Ltd

Remote · United Kingdom

- Conducting applied policy-relevant research for a UK-based professional research organisation, delivering analytical outputs to client standards.
- Applying AI and data science methodologies to real-world research questions across policy, social, and economic domains.
- Producing structured research deliverables -reports, evidence frameworks, and analytical briefs -independently within professional project timelines.

AI Lead *Dec 2025 - Present*

Vertexons *Peshawar, Pakistan*

- Leading backend development and deployment of production ML systems across cloud environments using Python, Node.js, and AWS.
- Designed scalable APIs integrating LLM-based natural language processing services; implemented MLOps pipelines and CI/CD standards for continuous deployment.

Algorithmic Trading / Quantitative Developer *Jan 2026 - Present*

Self-Employed -MT5 Expert Advisor *Remote*

- Developed production-grade MetaTrader 5 Expert Advisor in MQL5 with statistical feature engineering, regime-aware signal integration, and Bayesian strategy validation via MT5 Strategy Tester.

Developer -UniSchedule AI-Powered Timetable System *Oct 2025 - Feb 2026*

Institute of Management Sciences (IM|Sciences) *Peshawar, Pakistan*

- Built full-stack AI timetable platform serving 1,200+ students using FastAPI, LLM routing, serverless proxy architecture, and admin analytics dashboard.

Research Assistant Feb 2025 - Apr 2025

Institute of Management Sciences (IM|Sciences) Peshawar, Pakistan

- Developed statistical benchmarking framework for LLM hallucination and reliability analysis; co-authored research methodology (manuscript in preparation for journal submission).

Technology Intern Jun 2025 - Aug 2025

PTCL Group

Islamabad, Pakistan

- Optimised data processing workflows for technical reporting systems; worked with large-scale operational datasets across telecom infrastructure.

Machine Learning Intern Jun 2025 - Aug 2025

withML Remote

- Applied ML tasks including data preprocessing, model experimentation, evaluation workflows, and collaborative deployment strategy discussion.

Product Development Manager (Intern) Jun 2024 - Jul 2024

Bright Network -IEUK Remote · United Kingdom

- Built product roadmap and feature prioritisation framework using behavioural insights from 3,900+ users; proposed gamification and personalisation features projected to improve user retention.

SELECTED PROJECTS

Closed-Loop AI Therapeutics -Insulin Dosing | PyTorch · Soft Actor-Critic · Digital Twin Simulation

Deep RL system for autonomous insulin delivery optimised for Ramadan fasting and high-glycaemic South Asian diets. SAC agent achieved zero severe hypoglycaemia versus 4.5% failure in standard protocols and outperformed clinical sliding-scale protocols in 92% of simulations. Accepted and presented at ICHR-26.

Climate-Driven Disease Surveillance | ST-GNN · Causal Discovery · Python · PyTorch

Interpretable spatiotemporal GNN with causal discovery for modelling climate-disease outbreak relationships. Awarded 1st Place, KMU 2026. Accepted and presented at ICHR-26.

Algorithmic Trading Bot | Python · MetaTrader 5 · AWS · Docker · CI/CD

Production-grade MT5 trading system with real-time time-series market data pipelines, regime-aware signal integration, and Dockerised CI/CD deployment on AWS.

LLM Hallucination Benchmarking Framework | NLP · Statistical Analysis · LLM Evaluation

Statistical framework for benchmarking LLM factuality and reliability across multiple dimensions. Research Assistantship, IM|Sciences. Manuscript in preparation.

Real-Time Waste Classification System | YOLOv5 · Streamlit · Object Detection

Object detection backend achieving 0.801 mAP50 at 10ms inference latency. Designed for integration into smart bin infrastructure for automated recycling optimisation.

Deepfake Detection System | Computer Vision · Audio Analysis · Multimodal AI

Multimodal deepfake detection combining audio and visual artifact analysis. Recognised at UNESCO Hackathon for technical innovation.

EDUCATION

BS, Computer Science 2022 - 2026 (Expected)

Institute of Management Sciences (IM|Sciences) Peshawar, Pakistan

GPA: 3.76 / 4.00 · Medium of instruction: English

Relevant coursework: Machine Learning, Deep Learning, Algorithms & Data Structures, Software Engineering, Database Systems, Probability & Statistics.

AI & Data Science -Professional Certification Jan 2024 - Jul 2024

AtomCamp Islamabad, Pakistan

AWARDS & RECOGNITION

2026 1st Place Abstract Competition · 6th International Public Health Conference, KMUCash Prize & Certificate of Excellence

2026 1st Place -Climate-Disease Surveillance · ICHR-26 International Conference on Health ResearchCash Award

2024 Project Showcase Recognition -Deepfake Detection System · UNESCO HackathonTechnical Innovation

TECHNICAL SKILLS

ML & AI: Graph Neural Networks (GAT, GCN, ST-GNN), Deep Reinforcement Learning (SAC), PyTorch, TensorFlow, Scikit-learn, LSTM, CNNs, NLP, RAG, LLM APIs, LangChain, HuggingFace, Feature Engineering, Model Evaluation, Time-series Analysis

Languages: Python, SQL, TypeScript, Node.js, MQL5, R

Backend & APIs: FastAPI, Django, REST, Serverless Architecture, MLOps, Microservices

Cloud & DevOps: AWS, Azure, Docker, CI/CD, Cloud ML Infrastructure, Git

Data & Visualisation: Pandas, PySpark, Streamlit, Plotly, Power BI, PostgreSQL, MongoDB, Redis