

# Faisal Hakimi | AI Engineer & Quantitative Researcher

Peshawar, Pakistan

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## Profile

AI engineer and quantitative researcher working at the intersection of probabilistic modeling, optimization, and reliable generative systems. Experienced in designing low-latency vision pipelines, evaluating LLM hallucination behaviour, and developing secure backend architectures. Skilled in translating stochastic models—Bayesian optimization, evolutionary algorithms, and regime-aware methods—into deployable, production-grade systems.

## Technical Skills

**Programming:** Python, JavaScript, SQL

**ML & Research:** PyTorch, TensorFlow, Hugging Face, Scikit-learn, Bayesian optimization

**Mathematics:** Probability, Statistics, Optimization, Stochastic Modeling

**Computer Vision:** YOLO, real-time inference, evaluation using *mAP*

**Backend:** Django, FastAPI, PostgreSQL, Docker, REST APIs

**DevOps:** Git, CI/CD, Docker Compose

**Data:** NumPy, Pandas, SciPy

**Other:** Rasa, Streamlit, GitHub

## Experience

### PTCL Group

Islamabad

2025

*Technology Intern*

- Automated ETL tasks and improved ingestion workflows.
- Added monitoring metrics to strengthen analytics pipelines.

### IMSciences

Peshawar

2025

*Research Assistant*

- Built statistical pipelines to evaluate hallucination behaviour in LLMs.
- Performed distributional tests on error frequencies and output variance.
- Developed reproducible research artifacts for academic submission.

### Bright Network / IEUK

Remote (UK)

2024

*Product Intern*

- Contributed to a 6-month roadmap redesign informed by 3,900+ datasets.
- Improved platform engagement by ~ 20% through system optimization.

### NIC

Peshawar

2024–Present

*Founder*

- Built a secure crowdsourced security platform using Django + PostgreSQL.
- Designed workflows for vulnerability intake, triage, and structured reporting.

## Education

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IMSciences

Peshawar

B.Sc. Computer Science

○ CGPA: 3.61/4.00

○ Coursework: Algorithms, Probability, Optimization, Machine Learning

## Research & Advanced Projects

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### Regime-Aware Cointegration Trading: Enhancing Cointegration-Based Basket Trading with Multi-Asset Bayesian and Swarm Optimization

Designed a regime-aware portfolio allocation algorithm using Bayesian optimization and swarm-intelligence heuristics. Addressed structural overfitting in classical cointegration tests, incorporating cross-regime stability checks for improved out-of-sample performance.

### LLM Hallucination Analysis: Empirical Evaluation of Hallucination Behaviour in Large Language Models

Built statistical evaluation pipelines to measure hallucination frequencies across datasets. Performed distributional comparisons, prompt-sensitivity analysis, and reliability scoring for upcoming academic publication.

### AI Governance: Algorithmic Policy & Responsible AI Frameworks

Studied policy constraints and governance structures for safe deployment of generative AI. Connected model-level reliability metrics to system-level ethical guidelines and lifecycle management.

### Genetic Algorithm Scheduler: University Scheduling System using Evolutionary Search

Developed a genetic algorithm engine using assignment variables  $x_{i,t}$  to generate conflict-free timetables. Integrated a full-stack interface for real-time schedule generation under hard and soft constraints.

### Real-Time Vision System: YOLO-Based Waste Classification Pipeline

Engineered a computer-vision system achieving  $\sim 10\text{ms}$  inference. Evaluated using  $mAP$ , class precision, and latency profiling. Deployed via Streamlit for interactive demonstrations.

## Certifications

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Data Science: AtomCamp — EDA, visualization, statistical modeling

Advance AI: AtomCamp — deep learning, CV, NLP, LLMs

## Research

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In Preparation: *Quantifying Hallucination Behaviour in Large Language Models* — analysis of hallucination distributions, model reliability metrics, and prompt-driven variability.

## Additional Information

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Languages: English (fluent), Urdu (native)

Links: [github.com/Faisalhakimi22](https://github.com/Faisalhakimi22) | [linkedin.com/in/faisal-hakimi55](https://linkedin.com/in/faisal-hakimi55)

References available on request.