MOHAMMAD ASHAD KHAN

MSc AI for Science & Technology | Computer Vision & Deep Learning | Explainable AI | Full-Stack Developer
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EDUCATION

MSc Artificial Intelligence for Science & Technology — *Sep 2024 – Sep 2026 (Expected)*
Università degli Studi di Milano-Bicocca, Milan, Italy

B.Tech Computer Science Engineering — *Jul 2019 – Jul 2023*
Lovely Professional University, India

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, SQL, HTML, CSS
Frameworks: React, Next.js, Node.js, Express.js, Tailwind CSS, Streamlit
AI / ML: Deep Learning, Computer Vision, NLP, PyTorch, CNNs, Vision Transformers (ViT), Transfer Learning, Gradient Boosting, SBERT, 1D CNN, Scikit-learn, MediaPipe, OpenCV
Explainable AI: Grad-CAM, LIME, SHAP, Saliency Maps, t-SNE, Knowledge Graphs (TransE)
Databases: PostgreSQL, MongoDB, Supabase, Neo4j
Tools & Focus: Git, Docker | Depth Estimation, Embeddings, Knowledge Graphs, HCI, Gesture Control

EXPERIENCE

Frontend Web Developer @ Securedsoft (Remote) — *May 2022 – Jun 2025*

- Built responsive web interfaces using React, Tailwind CSS, and Supabase APIs; improved performance and cross-browser compatibility.

Computer Science Instructor @ Lumbini World School, Nepal — *Apr 2024 – Feb 2025*

- Taught programming fundamentals and mentored K-12 students; delivered Coding ToT curriculum (Nepal STEM Alliance certified).

Management Team Member @ Google Developer Student Club, LPU — *Jan 2020 – May 2023*

- Organized hackathons and workshops; mentored peers in software development.

SELECTED PROJECTS

Lagani — Explainable AI for NEPSE Stock-Risk Analysis | PyTorch, Gradient Boosting, LIME, Neo4j, Streamlit — *2026*

- Built a leak-free, symbol-disjoint stock-risk model (gradient boosting + MLP) across 120 NEPSE stocks — **80.9% test accuracy, 0.81 macro-F1** (5-fold CV validated).
- Engineered a multi-model stack: CNN trend predictor, volatility-regime classifier, and a TransE knowledge-graph recommender over a Neo4j market graph.
- Delivered transparent risk scoring with LIME & saliency explanations in an interactive Streamlit dashboard.

FreshGuard — Explainable Fruit-Quality Inspection | Vision Transformer, PyTorch, LIME, t-SNE

- Fine-tuned a Vision Transformer (transfer learning) on the FruitNet dataset for fresh-vs-defective classification; validated reasoning with LIME super-pixels and t-SNE embeddings.

Bloom XAI — Explainable Flower Classification | ViT, PyTorch, LIME, t-SNE

- Transfer-learned a pretrained ViT for multi-class flower recognition with LIME local explanations and t-SNE class-separation analysis.

CIFAR-10 Custom CNN + Explainable AI | PyTorch, Grad-CAM, Saliency, LIME

- Designed and trained a custom CNN from scratch on CIFAR-10; compared Grad-CAM, Saliency, and LIME to interpret model attention.

CardioNet — Deep-Learning ECG Arrhythmia Detection | PyTorch, Streamlit, Scikit-learn — *Apr – May 2026*

- Custom 1D CNN on the MIT-BIH dataset; interactive Streamlit dashboard for ECG visualization & real-time prediction. Evaluated with Accuracy, Precision, Recall, F1 & confusion matrix. (github.com/xashad/CardioNet)

GestureRun — AI Gesture-Controlled Endless Runner | Python, OpenCV, MediaPipe, Pygame — *May 2026*

- Real-time webcam hand-gesture recognition for lane switching, jumping, and sliding; built for the HCI & Intelligent Consumer Technologies course. (github.com/xashad/GestureRun)

Resume & Job Match Scorer | SBERT, LIME, Neo4j

- Semantic job-matching with explainable AI (LIME) and a Neo4j skills knowledge graph.

CERTIFICATIONS

ICCS-2023 "KILBY100" Conference Publication (May 2023) • Neo4j Certified Professional (Jun 2025) • AI Engineer for Developers Associate — DataCamp (Mar 2026) • AI Fundamentals — DataCamp (Mar 2026) • NASA ARSET Fundamentals of Remote Sensing (Nov 2025) • HP LIFE Design Thinking (Nov 2024)

LANGUAGES

English (Fluent) • Nepali (Native) • Hindi (Fluent) • Urdu (Fluent) • Italian (Basic A1)