

Ahmad Hassan

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PROFESSIONAL SUMMARY

AI Engineer and Full-Stack Developer building agentic AI, retrieval-augmented generation (RAG), computer vision, and production web systems. AWS Certified Cloud Practitioner and 5x national hackathon winner with 10+ applications shipped using Python, PyTorch, FastAPI, Next.js, PostgreSQL, Docker, and AWS.

EDUCATION

University of Management and Technology

Bachelor of Science in Computer Science; CGPA: 3.20/4.00

Lahore, Pakistan

Oct 2023 – Feb 2027

Forman Christian College University

FSc Pre-Engineering; Score: 913/1100; Gold Medalist, FORMAN SCICON 1.0

Lahore, Pakistan

Sep 2021 – May 2023

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL, C++, C

AI/ML: PyTorch, Scikit-learn, LightGBM, OpenCV, NumPy, Pandas, CNNs, Vision Transformers, Grad-CAM++

Generative AI: RAG, LangChain, LangGraph, LlamaIndex, CrewAI, OpenAI SDK, OpenRouter, tool/function calling, prompt engineering

Agent Infrastructure: Model Context Protocol (MCP), multi-agent systems, embeddings, semantic search, vector databases

Web & Data: FastAPI, Node.js, Hono, React, Next.js, WebSockets, PostgreSQL, MongoDB, Redis, Prisma, Upstash Vector

Cloud & DevOps: AWS, Docker, Nginx, Git, GitHub, Vercel, Railway

EXPERIENCE

Freelance Full-Stack Developer

Independent Contractor

Remote

Jul 2024 – Present

- Architected and deployed 10+ full-stack applications serving 1,000+ users across e-commerce, education, and community platforms.
- Engineered Node.js, Hono, and FastAPI services; reduced API response times by 40% through query optimization and caching.
- Delivered React and Next.js interfaces with 95+ Lighthouse scores and integrated OAuth, Stripe, and real-time communication, increasing engagement by 35%.

Data Research Analyst Intern

Coders Crew

Lahore, Pakistan

Aug 2024 – Sep 2024

- Preprocessed and validated 10,000+ music records for AI chatbot training, achieving a 92% quality score and reducing query errors by 28%.
- Automated data-cleaning workflows with Python and Pandas, improving processing efficiency by 60%.

PROJECTS

Argus Vision - Multi-Agent Vision Research

PyTorch, EfficientNet-B4, ViT-B/16, LightGBM, FastAPI

Research Project

[GitHub Repository](#)

- Researched and developed an uncertainty-aware dermoscopic classifier using EfficientNet-B4 and ViT-B/16 agents trained on 25,331 ISIC 2019 images across eight diagnostic categories.
- Designed a debate trigger using Jensen-Shannon divergence and entropy, invoking Grad-CAM++ and attention rollout to localize model disagreement.
- Built a calibrated 23-feature LightGBM consensus head with 5-fold cross-validation and deployed the Dockerized prototype using FastAPI, Redis, Nginx, Next.js, and WebSockets.

Echo - Agentic AI E-Commerce

Next.js, TypeScript, RAG, Upstash Vector, Three.js

1st Place, GCU Softronix 2026

[Live Demo](#)

- Built an AI-first commerce platform with a conversational 3D clerk that retrieves inventory, controls storefront UI, negotiates discounts, and guides product discovery through natural language.
- Implemented RAG and tool-calling workflows with Upstash Vector and OpenRouter for semantic search, filtering, navigation, and cart actions.
- Integrated Whisper voice input, TTS-driven avatar lip synchronization, Pusher-based human handoff, BetterAuth, Stripe, Prisma, and Neon PostgreSQL.

Web Ascend Student Portal

Next.js, TypeScript, PostgreSQL, GSAP

[Live Demo](#)

- Developed a role-based learning portal used by 300+ MERN-stack learners for assignments, progress tracking, project reviews, and structured skill development.

CERTIFICATIONS, LEADERSHIP & AWARDS

- Certification:** AWS Certified Cloud Practitioner, Amazon Web Services (Jun 2026).
- Leadership:** Head of Events, AWS Cloud Club UMT; Web Team Member, GDG UMT; former Director Research, UMT Inter AI Club; mentored 300+ Web Ascend learners.
- Awards:** 5x National Hackathon Winner; 2x UMT Recognition Award; Gold Medalist, FORMAN SCICON 1.0; 3rd Position, BISE Lahore Matriculation.