

Muhammad Hasnain Akhtar

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Experience

Teaching Assistant – Software for Mobile Devices and AI

Aug 2025 – Present

FAST National University of Computer and Emerging Sciences, Islamabad

- Designed course assignments and mobile development exercises using Kotlin, XML, and Firebase
- Conducted 200+ student demos covering Android app development and API integration
- Evaluated projects and provided technical feedback to improve code quality and design patterns
- Mentored students on integrating modern tools including SQLite, PHP, OneSignal, and Agora API
- Supported the instructor in course planning and technical decision-making

AI Engineer

June 2025 – March 2026

Eighty4Digital, Burton-Upon-Trent(Remote)

- Built AI-driven automation workflows that reduced manual processing time by 40%
- Developed end-to-end marketing and sales funnels to optimize customer conversion rates
- Created a chatbot for the live website from scratch as well as SOPs for automation pipelines, enabling smooth team handoffs and scalability
- Worked with cross-functional teams to identify bottlenecks and deploy automation solutions

Education

FAST NUCES, Islamabad

Aug 2022 - Present

CGPA 3.33/4.0

Bachelor of Science in Computer Science

Projects

FinAI - AI-Powered Financial Platform

Sep 2025 - Present

Building an intelligent financial advisory platform tailored for the Pakistani market as my Final Year Project. Leading backend development while collaborating with teammates on AI/ML and frontend components. Training multiple machine learning models to assess loan eligibility, credit scoring, and financial risk prediction. Implementing secure APIs and database architecture to handle real-time financial data processing.

Enhanced DBSCAN Object Detection

September 2025

Read and worked at improving the DBSCAN algorithm for detecting the small objects such as humans/rocks. The accuracy of DBSCAN improved by nearly 17 percent. Was a first of a kind research paper study with implementation.

SMPL For Road Crossing

October 2025

Worked on improving the accuracy of predicting whether a subject would cross or not in a road on the JAAD dataset, used smpl+clip for better accuracy, fusion of four components, images(rgb)+opticalflow+clip+smpl.

Anomaly Detection in Network Traffic

November 2025

Designed an unsupervised learning system to detect anomalies in network traffic patterns using clustering and statistical methods. Implemented algorithms including Isolation Forest, Local Outlier Factor, and DBSCAN for identifying unusual behavior. Performed feature engineering on raw network logs and evaluated model performance using precision-recall metrics. Visualized anomaly patterns using dimensionality reduction techniques like PCA and t-SNE.

Torcs AI Racing Agent

Apr 2025

Developed an intelligent racing agent for TORCS simulator using reinforcement learning and supervised learning techniques. Implemented neural network architectures with Llama models for decision-making and behavior optimization. Experimented with Q-learning and policy gradient methods to optimize vehicle control and racing strategies, achieving competitive lap times through iterative training cycles.

Petro Pulse - Petroleum Management System

Dec 2024

Built a comprehensive fuel management system with C#, JavaFX, and MSSQL Server to handle inventory tracking, customer orders, and transaction processing. Designed the database schema and implemented complex stored procedures for automated reporting. Applied OOP design patterns and followed Agile methodology throughout development. Integrated role-based access control to ensure secure data management.

Technical Skills

- **Languages:** Python, C/C++, Java, C#, Kotlin, SQL, PHP, HTML/CSS
- **Machine Learning & AI:** PyTorch, TensorFlow, scikit-learn, NumPy, Pandas, Reinforcement Learning, Neural Networks, CNNs, RNNs, LSTMs, Supervised & Unsupervised Learning

- **Data Science:** Data Mining, Feature Engineering, Anomaly Detection, Clustering, Dimensionality Reduction, Statistical Analysis
- **Databases:** MSSQL Server, MySQL, MongoDB, Firebase
- **Frameworks & Tools:** Flask, Streamlit, Android SDK, OpenMP, Jupyter Notebook, Git, REST APIs
- **APIs & Services:** Groq API, OneSignal, Agora API, RESTful APIs
- **Development Practices:** Agile/SCRUM, OOP Design Patterns, CI/CD, Model Deployment, Algorithm Optimization
- **Core Competencies:** Deep Learning Model Training, Data Preprocessing, Backend Development, Automation, Problem Solving, Technical Documentation