AHMED HASSAN

AI/ML ENGINEER

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SUMMARY

Motivated and analytical individual with a strong academic foundation in Physics (BSc) and a specialized Master's degree in Artificial Intelligence (AI). Skilled in applying mathematical modeling, statistical analysis, and programming to solve complex real-world problems. Experienced in machine learning, deep learning, and data analysis, with hands-on projects involving Python, TensorFlow, and scikit-learn. Strong research and problem-solving mindset developed through scientific training, now transitioned into AI-driven innovation. Seeking opportunities in AI research, data science, or ML engineering to contribute to impactful, data-driven solutions.

EXPERIENCE

NED University, Karachi

Jan 2025-Present

AI/ML Project(Academic)

Completed multiple academic AI/ML projects during my Master's in Artificial Intelligence, applying machine learning, deep learning, and computer vision techniques to solve real-world problems.
Proficient in tools like Python, TensorFlow, scikit-learn, XGBoost, pandas, NumPy, and FastAPI for model development, optimization, and deployment.
Key projects include Urdu Sentiment Analysis using BERT and Gradio, Spam Detection with XGBoost and Gradio, Customer Churn Prediction using SMOTE and and Gradio, Image Classification (Cats vs. Dogs), Demand Forecasting with XGBoost and Gradio, and Defect Detection on metal surfaces using TensorFlow and Gradio.

NED University, Karachi

Oct 2023- July 2024

Research Assistant (Final Year Project)

As part of my undergraduate final year project, I developed a Voice over IP (VoIP) system that enabled real-time voice communication over computer networks. The project focused on digital signal processing, voice compression, and data transmission using packet-switching techniques. It provided hands-on experience with socket programming, audio processing, and optimizing bandwidth for smooth voice communication over LAN/WAN networks.

Self-employed

May 2022-2025

Academic Tutor (Part-Time)

I provide personalized academic support by breaking down complex topics and creating tailored lesson plans to keep students engaged and improve their performance.

PIAIC, Karachi

Nov 2023- Aug 2025

Web Development

Developed a fully responsive travel blog website using Next.js, focusing on SEO optimization, dynamic routing, and modern UI/UX design. Additionally, built a scalable e-commerce platform using the MERN stack with a microservices architecture, integrating features like product management, user authentication, order handling, and secure payment processing for a real-world commerce experience.

EDUCATION

NED University, Karachi

2025-2026

Masters of Science (BS) in Artificial Intelligence(AI)

Pursuing a Master's in Artificial Intelligence with a strong focus on Machine Learning, Deep Learning, Computer Vision, Natural Language Processing (NLP), and Coursework includes hands-on projects involving model development, evaluation, and deployment using Python, TensorFlow, scikit-learn, and advanced algorithms. Gaining a deep understanding of AI theory and practical applications through both academic and real-world problem-solving.

NED University, Karachi

2020-2024

Bachelors of Science (BS) in Applied Physics

Completed a Bachelor's degree in Physics with core coursework in Classical Mechanics, Electromagnetism, Quantum Physics, Thermodynamics, Solid State Physics, Nuclear Physics, and Atomic Physics. Developed strong analytical and mathematical modeling skills through theoretical study and practical lab work. Gained experience in scientific computing and data analysis, providing a solid foundation for advanced studies in Artificial Intelligence.

SKILLS

Programming Languages: Python, JavaScript, Node.js
Frameworks & Libraries: TensorFlow, scikit-learn, XGBoost, Keras, NumPy, pandas, Matplotlib
Web Development: Next.js, React.js, Express.js, MongoDB, FastAPI, REST APIs
Machine Learning: Supervised & Unsupervised Learning, Model Evaluation, Hyperparameter Tuning, Feature Engineering
Deep Learning: BERT, CNNs, RNNs, Transfer Learning, Computer Vision, NLP
Data Handling: Data Preprocessing, SMOTE, Data Visualization, Exploratory Data Analysis (EDA)
Dev Tools & Deployment: Git, GitHub, Gradio, Docker (basic), Vercel, Postman
Soft Skills: Problem-Solving, Research-Oriented Thinking, Collaboration, Communication

PROJECTS

<u>**Portfolio Link:**</u>

Urdu Sentiment Analysis using BERT
- Fine-tuned a BERT model on Urdu text data using TensorFlow; deployed using FastAPI and Gradio for real-time sentiment classification.

Spam Detection with XGBoost
- Built a machine learning pipeline using XGBoost and scikit-learn to classify spam messages, achieving high precision and recall.

Customer Churn Prediction
- Applied SMOTE for class imbalance and developed a churn prediction model using logistic regression and decision trees in scikit-learn.

Image Classification (Cats vs. Dogs)
- Implemented a deep learning model using CNNs for image classification with TensorFlow/Keras, achieving over 90% accuracy.

Demand Forecasting Model
- Created a time-series demand forecasting model using XGBoost, improving forecast accuracy for sales data.

Defect Detection in Metal Surfaces
- Developed a computer vision system using TensorFlow to detect surface defects in metals; deployed using Gradio.

Travel Blog Website (Next.js)
- Built a dynamic and responsive travel blog platform using Next.js with SEO optimization and modern UI/UX design.

E-commerce Website using MERN Stack with Microservices
- Developed a scalable microservice-based e-commerce website using MongoDB, Express.js, React.js, and Node.js, including user auth, product management, and payment integration.