

AAFIA AZHAR

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PROFILE

Computer Systems Engineering graduate with hands-on experience in machine learning, NLP, computer vision, and predictive analytics. Skilled in building full-stack AI-powered applications, fine-tuning LLMs, training vision models, and transforming research into deployable solutions. Strong foundation in software engineering, systems design, and practical AI implementation.

EDUCATION AND TRAINING

Bachelor of Engineering (B.E.), Computer Systems Engineering — *Sept 2022 – Jun 2026*
Sukkur IBA University

- Cumulative GPA: 3.21 / 4.00
- PEC Accredited, Level II, Washington Accord Substantial Equivalence

Intermediate – Pre-Engineering — Larkana, Sindh, Pakistan *Aug 2019 – Jul 2021*

- Percentage: 96.36%, Grade A1

WORK EXPERIENCE

Generative AI & Prompt Engineering Intern — Neurofive Solutions, *Jul – Aug 2026*
Punjab, Pakistan (Remote)

- Practiced zero-shot vs. few-shot, chain-of-thought, and persona prompting; built a reusable prompt library, a custom AI chatbot, and a RAG mini-project for document-grounded Q&A with structured JSON output.
- Explored multi-agent AI systems and built a no-code automation workflow connecting an LLM to a real-world task pipeline.

Machine Learning Intern — Ezitech Institute, Rawalpindi, Pakistan *Jun – Aug 2025*
(On-site)

- Built an AI Content Marketing Automation System (GPT + Unsplash API + Google Apps Script) that cut blog/caption creation time from hours to seconds.
- Developed a multilingual AI voice cloning studio with noise-reduction filtering, and a 6-class emotion detection model combining TF-IDF, VADER sentiment, and XGBoost.

Machine Learning Intern — Elevvo Pathways, Cairo, Egypt *Jul – Aug 2025*
(Remote)

- Built regression models for student score prediction and time-series sales forecasting (XGBoost), evaluated with MAE, RMSE, and R^2 .
- Built a K-Means customer-segmentation model, a collaborative-filtering movie recommender (SVD, Precision@K), and a loan-approval classifier handling imbalance with SMOTE.

AI/ML Engineering Intern — DevelopersHub Corporation, *Jul – Aug 2025*
Islamabad, Pakistan (Remote)

- Built regression models for house-price (MAE improved from ~\$121K to ~\$83K via XGBoost) and stock-price prediction, and reached ~85% accuracy on heart-disease risk classification.
- Fine-tuned BERT for 4-category news classification and built a multimodal CNN + tabular housing-price model alongside a production-style Scikit-learn churn pipeline.

UNDERGRADUATE THESIS

AutoGrade: An AI-Based Self-Assessment System Using Image-to-Text Conversion and LLM-Based Grading

2025 – 2026

Handwritten Text Recognition — Multimodal LLMs — Semantic Grading — LoRA Fine-Tuning — Feedback Generation

- Co-developed an end-to-end AI assessment platform that extracts handwritten exam answers using a multimodal LLM (Llama 4 Scout) and grades them semantically against rubric criteria rather than relying on keyword matching.
- Fine-tuned a Llama 3.2-3B Instruct model with LoRA and 4-bit quantization for the grading engine, and integrated a full-stack pipeline (React, Express.js, PostgreSQL) that reached over 93% text-extraction accuracy and strong agreement with expert human grading.

RESEARCH INTERESTS

Machine Learning & Deep Learning for Real-World Applications | Computer Vision & Generative AI | Natural Language Processing & LLM Fine-Tuning | Physics-Informed Machine Learning | Explainable AI (XAI)

RESEARCH PROJECTS

Face Mask Detection System

2026

- Built a real-time face mask detection system using CNN (MobileNetV2) and OpenCV, with a Flask web dashboard for live classification.

Satellite Flood Detection from Imagery

2026

- Built a satellite imagery pipeline comparing a from-scratch U-Net against a pre-trained EfficientNetB4 model for flood segmentation using TensorFlow.

Breast Cancer Classification System

2026

- Built an XGBoost classifier on the Breast Cancer Wisconsin (Diagnostic) dataset, served through a Flask web app with a JSON API and live accuracy/precision/recall/ROC-AUC reporting.

AI-Powered Resume Analyzer & Interview Preparation System

2026

- Built a full-stack ASP.NET Core 8 MVC web app with resume parsing, ATS scoring, skill-gap analysis, and an interview-prep module with an analytics dashboard.

Lexicon & Transformer-Based Emotion Detection

2025

- Designed a multiclass emotion classifier combining lexicon methods and Transformer models to analyze written text with high accuracy.

SafeRoute – Smart Safety App for Women

2025

- Developed a one-tap safety app in Kotlin with instant SOS alerts, live location sharing, and offline SMS for emergencies.

AI Content Marketing Platform

2025

- Built an automated content generation and analytics tracking platform using Node.js, Express, and LLM API integrations.
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Smart Traffic Controller with Emergency Priority

2024

- Designed a digital controller in Verilog HDL with FSM-based real-time emergency-vehicle override routing.

Latest Research (In Progress):

- A Robust Framework for AI-Based Deepfake Video Detection System Using Deep Learning Techniques.
- Predicting the Stability of Perovskite Solar Cells Using Machine Learning.

TECHNICAL SKILLS

- **Programming & Databases:** Python, Java, C/C++, C#, SQL, MATLAB, Verilog, PostgreSQL, MySQL, SQL Server
- **Machine Learning:** scikit-learn, XGBoost, Random Forest, Support Vector Regression (SVR)
- **Deep Learning & Generative AI:** PyTorch, TensorFlow, Keras, CNNs (MobileNetV2, EfficientNet, U-Net), BERT, Transformers, LLMs, LLM Fine-Tuning (LoRA), Prompt Engineering
- **Computer Vision:** OpenCV, YOLO, Semantic Segmentation, Image Processing
- **Explainable AI (XAI):** SHAP, Grad-CAM, LIME
- **Web & Full-Stack:** React, Express.js, Node.js, ASP.NET Core, Flask, Streamlit, REST APIs
- **Tools:** Git & GitHub, Docker (Basics), Jupyter Notebook, n8n

ACHIEVEMENTS & SCHOLARSHIPS

- **Sindh Educational Endowment Fund (SEEF) Scholarship, 2022–2026** – Fully merit-based undergraduate scholarship
- Alumna, Aspire Leaders Program, Aspire Institute
- Delegate; Model United Nations (MUN) (2024), Participant; HULT Prize (2024)
- Conference Volunteer; SCONEST – (IEEE) Student Conference on Engineering Sciences and Technology (2022), iCoMET – International Conference on Computing, Mathematics and Engineering Technologies (2026)
- Project Exhibition Participant, Sukkur IBA University

CERTIFICATIONS

- Google Data Analytics Professional Certificate (9-course series) — *Coursera*
- Supervised Machine Learning: Regression and Classification — *Coursera*
- Neural Networks and Deep Learning — *IBM SkillsBuild*
- The Success Map Bootcamp on Personal & Professional Development — *The Success Map (TSM)*
- Cybersecurity in Healthcare — *Simplilearn*

REFERENCES

Dr. Abdul Sattar Chan — HoD & Associate Professor, Sukkur IBA University
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Dr.-Ing. Kashif Hussain — Assistant Professor, Sukkur IBA University
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Dr. Junaid Ahmed Bhatti — Assistant Professor, Sukkur IBA University
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