

MUHAMMAD AHMED ZIA

Data Science & Machine Learning Enthusiast

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PROFESSIONAL SUMMARY

Computer Science student at COMSATS University Islamabad, Lahore Campus, with a focus on Data Science and Machine Learning. I work across the full data pipeline — collecting and engineering real-world datasets, training and benchmarking ML/DL models, then deploying them as accessible web and mobile applications. My projects span Random Forest health risk prediction, deep learning crop disease diagnosis using EfficientNet and multilingual BERT, and cloud-deployed Flutter applications on Azure Kubernetes. Actively seeking a Data Science or ML internship to apply and deepen expertise in applied machine learning, data engineering, and intelligent system design.

EDUCATION

Bachelor of Science in Computer Science

2023 – Present

COMSATS University Islamabad, Lahore Campus — Lahore, Pakistan

- CGPA: 2.97 / 4.00
- Relevant Coursework: Artificial Intelligence, Machine Learning & Data Science, Algorithms & Data Structures, Linear Algebra, Probability & Statistics, Database Systems, DevOps for Cloud Computing, Digital Image Processing, Parallel & Distributed Computing

TECHNICAL SKILLS

Data Science & ML: scikit-learn, Random Forest, EfficientNet (CV), multilingual BERT (NLP), Model Evaluation & Benchmarking, Cross-Validation, NumPy, Pandas, ChromaDB, sentence-transformers

Languages: Python, Dart, SQL

Frameworks & Libraries: Flask, FastAPI, Flutter, Streamlit, joblib

Databases & Cloud: Firebase, Firestore, Azure Kubernetes Service, Docker, Google Gemini API

Tools & Platforms: Git, GitHub, REST APIs, Vercel, Render, Heroku, Docker, Kubernetes

Currently Learning: Digital Image Processing, DevOps for Cloud Computing, Parallel & Distributed Computing, Information Security

PROJECTS

Crop Doctor — AI Crop Disease Diagnosis System [\[GitHub\]](#)

Python EfficientNet Multilingual BERT Flask HTML / CSS / JS Data Collection & Labelling

- Built an AI-powered web system for Pakistani farmers to diagnose crop diseases from a photo or Urdu/English symptom description.
- Collected and curated disease image datasets for 5 major Pakistani crops: Wheat, Cotton, Rice, Sugarcane, and Maize; trained an EfficientNet model for visual disease classification.
- Fine-tuned a multilingual BERT model on symptom descriptions in both Urdu and English for NLP-based text diagnosis.
- Outputs actionable spray and treatment recommendations; designed a bilingual input interface to maximise accessibility for rural users.

Health Risk AI — Lifestyle-Based Risk Predictor [\[GitHub\]](#)

Python scikit-learn Random Forest Flask Docker Vercel Pandas Matplotlib

- Collected and processed a 5,000-record lifestyle dataset covering BMI, sleep quality, smoking, alcohol, exercise, and profession as predictive features.
- Trained and benchmarked Random Forest (88.3%), Decision Tree (~82%), and Naive Bayes (~78%) with 5-fold cross-validation to select the best model.
- Built a Flask REST API for real-time inference; frontend displays a dynamic gauge chart, risk factor breakdown, and personalised health advice.
- Containerized with Docker and deployed on Vercel (live demo); Procfile additionally supports Heroku and Render deployment.

E-Commerce App — Flutter + Firebase + Kubernetes [\[GitHub\]](#)

Flutter	Dart	Firebase Auth	Firestore	Docker	Kubernetes	Azure
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- Developed a full-featured cross-platform e-commerce mobile app with separate Seller and Buyer dashboards for product listing, cart, and order management.
- Implemented Firebase Authentication and Firestore real-time database for seamless state and inventory sync across devices.
- Containerized the backend with Docker and orchestrated deployment on Azure Kubernetes Service — demonstrating end-to-end DevOps and cloud deployment skills.

Vibee — Centralized Social Media Aggregator [\[GitHub\]](#)

Flutter	Dart	Firebase Auth	Firestore	YouTube API	Reddit API	NewsAPI
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- Built a cross-platform Flutter app unifying YouTube, Reddit, and News into a single interest-based personalised feed.
- Designed an interest-to-content mapping engine routing 16 user interest categories to relevant YouTube searches, subreddits, and news keywords.
- Used a custom Firestore data model for user preferences, bookmarks, and session stats; implemented skeleton loading animations for smooth UX.
- Added a timed screen session feature with background countdown and session summaries to encourage healthy screen time habits.

EXPERIENCE & ACHIEVEMENTS

Volunteer — Technical Events & Workshops

2024 – Present

COMSATS University Islamabad, Lahore Campus — Lahore, Pakistan

- Participated in technical workshops, coding competitions, and peer learning sessions organised on campus.

Academic Achievement

- Completed coursework in AI, Data Science, DevOps for Cloud Computing, and Digital Image Processing alongside practical project development.