Ayesha Fazal Lashkarwala

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EDUCATION

Brandenburgische Technische Universität Cottbus   **Cottbus, Germany**
Masters of Science in Artificial Intelligence   *Graduation Date: Sep 2026*

Lahore University of Management Sciences (LUMS)   **Lahore, Pakistan**
Bachelors of Science in Computer Science   *Graduation Date: Jun 2023*

WORK EXPERIENCE

Technische Universität Berlin   **Berlin, Germany**
Working Student - Data Integration and Preparation   *Jul 2025 - Present*
- Curated and prepared a domain-specific dataset from Hugging Face for efficient experimentation.
- Developed a visual logging tool to streamline monitoring and analysis of Large Language Model outputs.
- Researched and evaluated inference servers to identify the most suitable solution for deployment.

Brandenburgische Technische Universität Cottbus   **Cottbus, Germany**
Student Assistant - Explainable Machine Learning   *Oct 2025 - Present*
- Developed and delivered a Python programming curriculum to 100+ enrolled students.
- Taught core ML concepts, focusing on data hygiene and the implementation and interpretation of Linear and Logistic Regression models.

Spur Solutions Pvt Ltd   **Karachi, Pakistan**
Associate Software Engineer   *Dec 2023 - Sep 2024*
- Integrated SignalR into a legacy .NET Framework system, optimizing real-time communication for enhanced user experience.
- Enhanced the capabilities of an established legacy system programmed on .NET Framework by integrating functionalities for two distinct roles.
- Reduced execution time by 89% by optimizing a complex stored procedure within the legacy system which supported real-time decision-making based on user-defined rules.
- Performed in-depth data analysis to standardize and harmonize system metrics, enhancing data consistency and reliability across the software platform.

Lahore University of Management Sciences (LUMS)   **Lahore, Pakistan**
Data Science (CS 334) Teaching Assistant   *Jan 2023 - May 2023*
- Encouraged students to learn by organizing tutorials in Python and conducting office hours weekly.
- Aided the instructor by regularly preparing assignments and checking quizzes and assignments as well as leading a semester long project for 80+ students.

Bazaar Technologies Pvt Ltd   **Karachi, Pakistan**
Product Analytics Intern   *May 2022 - Jul 2022*
- Analyzed data using Mixpanel and SQL queries to find useful insights.
- Identified discrepancies in the available data and reported them to higher authorities.

PROJECT EXPERIENCE

Lahore University of Management Sciences (LUMS)   **Lahore, Pakistan**
Thesis - Adaptive Learning Application for Maths   *Feb 2022 - May 2023*
- Conducted research and created a machine learning-based system to classify and analyze common mathematical mistakes made by 220 young learners in low-resourced schools in Pakistan, identifying eight distinct mistake categories.
- Designed and implemented a machine learning pipeline using classical (Naive Bayes, Logistic Regression) and deep learning techniques, achieving up to 87% accuracy with classical models.

- Used Google Vision API for image-to-text conversion and feature extraction, creating detailed CSV files for model training and testing.
- Performed data augmentation and image processing (cropping, grayscale adjustments) to expand the dataset, improving deep learning model accuracy from 37% to 60%.
- Designed and prototyped a user-friendly web application interface (MathMate) using Figma, incorporating HCI principles, local context, and insights from extensive research on existing EdTech platforms.
- Followed a "test-first, learn-later" approach to provide personalized feedback to students, enhancing their understanding of mathematics in low-resourced environments.

Consulting Wizards - Software Engineering   *Jan 2023 - May 2023*

- Prepared a System Requirements Document (SRS) containing all the use cases that the system entailed.
- Drew class, sequence, flow, and activity diagrams to understand the basic flow of the backend of the application.
- Used Figma to design the frontend of the application and compiled all the diagrams along with the frontend design in System Design Document (SDS).
- Used React, Express, MongoDB, Material UI, and firebase authentication to develop the application.
  Tested the application manually and automatically using Jest.

Authorship Attribution Model - Machine Learning   *Nov 2022 - Dec 2022*

- Scraped tweets of 600+ Twitter/X users.
- Performed data cleaning using regex library, extracted features forming the vocabulary.
- Used Laplace Smoothing to cater to any out of vocabulary words.
- Built 2-3 various machine learning models (KNN, Gradient Boosting Trees and Multi-layer Perceptron Neural network) to see which model performed the best.

Mask Detection System - Computer Vision   *Oct 2021 - Dec 2021*

- Used darknet and yolov3 to make a mask detection system.
- Developed the model to be compatible with both live as well recorded videos.

SKILLS

Technical:
- Beginner: C, Haskell, MATLAB, Arduino, Assembly, LATEX Android Studio.
- Intermediate: C#, C++, Python, JavaScript, Git/GitHub, TFVS, Figma, SQL, Mixpanel, Node JS, React, HTML, CSS, Angular, MS Excel.
- Familiar with Tensorflow, PyTorch, Keras, Sklearn, SciPy, NumPy, Pandas, Matplotlib, OOP.

Soft:
- Communication skills, Teaching, Leadership, Team work, Management, Design thinking, Collaboration, Time Management, Analysis, Research, Academic writing and Public speaking.

Language:
- English (C2 - Native/Billingual)
- Urdu (C2 - Native)
- German (A1 - Beginner)

CERTIFICATIONS

- Placed on Deans Honor List in LUMS from 2022-2023
- Statement of Accomplishment in the courses Introduction to R and Introduction to SQL from Datacamp.
- Placed in Deans Honor List in LUMS from 2019-2020
- Winner of the Robotics Competition 2019 hosted by the Electrical Engineering Department of LUMS