

# Ayesha Fazal Lashkarwala

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## EDUCATION

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### Brandenburgische Technische Universität Cottbus

*Masters of Science in Artificial Intelligence*

**Cottbus, Brandenburg**

*Graduation Date: Sep 2026*

### Lahore University of Management Sciences (LUMS)

*Bachelors of Science in Computer Science*

**Lahore, Punjab**

*Graduation Date: Jun 2023*

## WORK EXPERIENCE

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### 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.

### Spur Solutions Pvt Ltd

**Karachi, Sindh**

*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, Punjab**

*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, Sindh**

*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

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### Lahore University of Management Sciences (LUMS)

*Thesis - Adaptive Learning Application for Maths*

Lahore, Punjab

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.

### Software Management System - Databases

Sep 2022 - Dec 2022

- Prepared a System Requirements Document (SRS) containing all the use cases that the system entailed.
- Drew Relational and ER Models to verify any conflicts of the system.
- Used React, JavaScript and MySQL to develop the management system.

### 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

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### 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/Bilingual)

- Urdu (C2 - Native)
- German (A1 - Beginner)

## CERTIFICATIONS

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- 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