

ALIYA AKHTAR



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[AliyaAkhtar](#)

SKILLS

- **Languages:** Javascript, Python, C++, Typescript,
- **Frontend:** ReactJS, Javascript, HTML, CSS, Bootstrap, NextJS
- **Backend:** NodeJS
- **Databases:** MySQL, MongoDB, PostgreSQL, Supabase
- **Frameworks:** ReactJS, FastAPI,
- Experience in **Machine Learning, Docker, Data Augmentation, YOLO Models, Text-to-Speech Models**
- **Hands on Experience of various LLMs (Gemini, Llama, OpenAI), RAG, Vector Databases and Generative AI**

EDUCATION

Bachelor Of Engineering **NED University of Engineering & Technology** Karachi, Pakistan **2022-Present**

- Major In Software Engineering (CGPA: 3.894)

Intermediate **BAMM PECHS GOVT. COLLEGE FOR WOMEN** Karachi, Pakistan **2022**

- Major In Pre-Engineering (Percentage: 93.72%)

Matriculation **Karachi Public School** Karachi, Pakistan **2020**

- Major In Science Group (Percentage: 93.00%)

EXPERIENCE

AI & ML Intern

ESCV, NCL

March/2025

- Implemented **OCR techniques** to extract structured text from images and scanned documents, improving data usability for downstream NLP tasks.
- Worked with **YOLOv7 and v8 models** for accurate and real-time **object detection**, including dataset annotation and model evaluation.
- Applied advanced **data augmentation** strategies using **Albumentations** to expand training data and improve model generalization.

Artificial Intelligence Intern

Smart City, NCAI

Oct/2024-Jan/2025

- Developed code to fetch weather data and calculate indices using APIs and Google Earth Engine (GEE) with satellite imagery.
- Processed geospatial data and trained machine learning models to predict agricultural yield.
- Collaborated with teams to validate models and improve algorithm performance.
- Presented findings, showcasing AI applications in agriculture.

Machine Learning Intern

Irislabs

June/2024-June/2025

- Built an end-to-end **Text-to-Speech (TTS) pipeline** that converts raw text into natural-sounding audio; optimized inference time and audio clarity through model fine-tuning and post-processing.
- Designed and deployed a **Retrieval-Augmented-Generation (RAG) chatbot** using **Weaviate** as the vector database; implemented data-ingestion, embedding, and prompt-engineering workflows that boosted answer relevance and reduced latency.
- Trained and fine-tuned CNN architectures (**VGG16, MobileNet**) on diabetes datasets for image-classification tasks

- Collaborated with a team of developers to design, develop, and maintain C++ desktop applications, ensuring the efficient and reliable performance of software.
- Demonstrated excellent problem-solving skills and adaptability in a fast-paced development environment.

PROJECTS

Also view my portfolio website [AliyaAkhtarPortfolio](#)

● **KidzMania**

Designed and developed "Kidz Mania," an engaging and interactive platform built using React and Python, tailored exclusively for children to learn and have fun. The platform incorporates Gemini AI models to generate captivating short stories with creative titles based on user prompts, along with a voice feature that reads the stories aloud. Focused on fostering creativity and enhancing the learning experience for kids through technology and user-friendly design.

● **Velocity (Smart Traffic Management Project)**

Developed the "Velocity," a machine learning-based solution designed to predict traffic flow and visualize traffic congestion using dynamic heatmaps. The system intelligently optimizes traffic signal timings based on congestion patterns, enhancing traffic management and reducing delays. This project demonstrates a robust application of AI in urban planning, prioritizing efficiency and real-time adaptability for improved transportation systems.

● **Diabetes Prediction Application**

Developed a diabetes prediction application utilizing MobileNet and ShuffleNet V2 models. The app leverages deep learning techniques to analyze user inputs and predict the likelihood of diabetes, achieving high accuracy in classification. Focused on optimizing model performance and user experience, this project enhances early detection and awareness of diabetes.

● **Credit Card Fraud Detection**

Created a machine learning model for detecting credit card fraud. Leveraged data analysis and various algorithms to identify suspicious transactions, enhancing security and reducing financial risks. Demonstrated expertise in machine learning, data preprocessing, and fraud prevention, contributing to robust financial security measures.

● **Movie Genre Classification**

Developed a machine learning model to classify movies into genres based on features like plot summary, cast, and director. Utilized natural language processing (NLP) and image recognition techniques, demonstrating proficiency in ML, NLP, and computer vision to enhance movie recommendation systems and content categorization.

● **Spam SMS Detection**

Developed an AI model to classify SMS messages as spam or legitimate. Utilized data preprocessing, TF-IDF for feature extraction, and trained classifiers like Naive Bayes, Logistic Regression, and SVM. Achieved high accuracy in identifying spam, showcasing skills in Python, NLP, and machine learning.

● **Job Board**

Created a dynamic job board using the MERN stack. Integrated user authentication and real-time job posting. Enabled job seekers to browse and apply for positions with ease. This project exemplified expertise in full-stack web development, including React, MongoDB, Express.js, and Node.js.

● **Weather Forecast Web Application | ReactJS, Open Weather Map (Weather API)**

A weather forecast web application built using ReactJS and integrated with the OpenWeatherMap API for real-time weather data retrieval and display.

● **Todo List | ReactJS, React Hooks**

Developed a dynamic to-do list application using React hooks for efficient state management.

● **Vector Calculation And Plotting | Python, Matplotlib Library**

Created a Python application using Matplotlib for vector calculations and real-time plotting, showcasing skills in Python programming and data visualisation.

● **Smart Attendance System | Python, MySQL Database, OpenCV Library**

Developed a smart attendance system with Python and MySQL, providing benefits to educational institutions by streamlining attendance processes

● **Movie Ticket Booking System | C++, File Handling**

Designed Movie Ticket Booking System with C++ and storing data in files, simplifying reservations.