

# Muhammad Hamza Zafar

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Passionate AI enthusiast with a strong background in web development, skilled in Computer Vision, NLP, and Machine Learning. Excited to explore cutting-edge areas like Generative AI. Dedicated to leveraging AI for innovation and shaping the future.

## Education

### FAST NUCES

BS(Artificial Intelligence) (GPA: 3.02 / 4.00)

June 2024

Karachi, Pakistan

- **Relevant Coursework:** Data Structures and Algorithms (C++), Prob & Stat in CS, Artificial Neural Networks, Computer Vision, Natural Language Processing, Generative AI, Recommendation System

## Experience

### Freelance

June 2022 – Continue

FYP Management System

- Utilized ReactJS, HTML5, CSS3,, React Router for navigation, Express.js for server-side, MySQL for data, bcrypt/JWT for authentication, and Git for version control.

CRM system

- A Django app for managing customer documents, payments etc with role-based authentication, detailed profiles, search/filter, and text extraction from scanned IDs/passports.

Ecommerce Store

- Developed an e-commerce store in Django with an add-to-cart system, cookies to maintain item count for logged-out users, and mechanisms for calculating total cost, profit, and development expenses.

## Projects

**Emotisement** | Python, TensorFlow, Django

- Used TensorFlow/Keras for facial expression analysis, integrating convolutional and pooling layers in four deep neural network architectures. Implemented a weighted ensemble method to boost emotion prediction. Generate a report based on emotions indicating where the ad can be improved. Employed django for backend.

**Chatbot** | Python, Hugging Face Embeddings, FAISS, Llama-2-7B model.

- Led the development of an advanced document retrieval and question-answering system.
- Developed a vector database with Hugging Face Embeddings and FAISS for rapid information retrieval from PDFs, and integrated the Llama-2-7B model into a question-answering bot for seamless AI-driven responses.

**Summarization** | Python,Flan-T5 model, fine-tuning with Lora (PEFT).

- Used the Flan-T5 model as the foundation, subsequently refining its performance through fine-tuning with Lora (PEFT) to excel in summarization tasks.

**Real Time Chat Application** | Node.js, Express.js, React.js).

- Developed a real-time chat application using MERN stack. Implemented JWT for authentication and utilized hooks and the virtual DOM. Additionally, used sockets for real-time communication..

## Technical Skills

**Languages:** Python, Javascript, C++, C, PHP

**Technologies:** Django, Express, Node.js, TensorFlow, Keras, OpenCV, Express.js, sklearn, NumPy, Pandas, LLama

**Concepts:** Neural Networks, Gen AI , Machine Learning, Encryption, Decryption, Artificial Intelligence, Machine Learning, Neural Networks, Agile Methodology

## Certificates

**Building ChatBots in Python - DataCamp**

**Langchain Chat with your Data - Coursera**

**Generative AI with Large Language Models - Coursera**