

MUHAMMAD YAHYA

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EXPERIENCE

FAST National University of Computer and Emerging Sciences, Islamabad

AI/ML Intern at UrduX AI e-lab

July 2024 – August 2024

- Learning about basic machine learning models, and data gathering techniques under supervision.
- Developing a **chatbot** tailored to domestic violence support using a **RAG** approach.
- Utilized OpenAI's **text-embeddings-ada-002** model for vector embeddings and powered the bot with **gpt-4o mini**.

FAST National University of Computer and Emerging Sciences, Islamabad

Lab Demonstrator (Data Structures)

August 2023 – January 2024

- Delivered expert technical guidance to students in resolution of compile-time, run-time, and semantic errors.
- Advised students on the selection of appropriate data structures in their lab assignments.
- Assisted students in navigating and overcoming coding challenges and technical obstacles.

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Lab Demonstrator (Programming Fundamentals)

January 2023 – May 2023

- Provided technical assistance to students in resolving compile-time, run-time, and semantic errors.
- Assisted with debugging and troubleshooting technical issues during lab sessions.
- Facilitated small group discussions to enhance students' programming concepts and best practices.

PROJECTS

Personal Portfolio Website in HTML, CSS & JavaScript (Under Development)

May 2024 – Present

- Currently developing already hosted responsive portfolio on GitHub pages.
- Implementing responsive design principles to ensure optimal viewing on various devices.
- Can be viewed at muhammadyahya.com

Domestic Violence Chatbot in Python

July 2024

- Developed a chatbot using the RAG approach, starting with the ingestion of data by loading PDFs as documents and splitting them into chunks.
- Created vector embeddings using the `text-embedding-ada-002` model and stored them in the Pinecone vector database.
- Integrated gpt-4o mini LLM for response augmentation and used LangChain for data processing. UI built using Streamlit.

Text Summarizer with AI using Hugging Face Inference API

June 2024

- Created a text summarizer application leveraging Facebook's BART CNN model for summarization.
- Integrated the Hugging Face Inference API and implemented the backend using Node.js, Axios, and FetchAPI.
- Designed the frontend with HTML, CSS, and JavaScript, and tested the API integration using Postman.

AI Timetable Scheduler using Genetic Algorithm in Python

May 2024

- Developed a scheduler incorporating genetic algorithm principles such as mutation, crossover, and selection.
- Coded a fitness function to enforce hard and soft constraints, ensuring no clashes for each batch and section.
- Achieved optimal scheduling outcomes, validating the system through multiple iterations.

Weather Application in HTML, CSS & JavaScript

April 2024

- Built a responsive weather app using the 7Timer API for real-time weather updates.
- Ensured a user-friendly design with Bootstrap and used Postman to test and integrate the API.

SKILLS

Programming/Structuring Languages: C++, C, Python, Bash, HTML, CSS, JavaScript

Frameworks and Tools: Git, GitHub, Jupyter Notebook, Anaconda, Visual Studio, Visual Studio Code, SQL Server, ASP.NET, Node.js, RESTful APIs, Streamlit, LangChain, Transformers

Soft Skills: Team Management, Communication, Team Leadership, Debugging, Project Management

EDUCATION

FAST National University of Computer and Emerging Sciences, Islamabad

August 2021 – June 2025

BSc, Computer Science

Relevant Coursework: Programming Fundamentals, Object Oriented Programming, Data Structures, Design and Analysis of Algorithms, Operating Systems, Database Systems, Computer Organisation and Assembly Language, Discrete Structures, Calculus I & II, Linear Algebra, Software Engineering, Statistical Modeling, Artificial Intelligence.