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.

FAST National University of Computer and Emerging Sciences, Islamabad
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, ingested data by loading PDFs as documents, split into chunks.
- Created vector embeddings using `text-embedding-ada-002` and stored them in the Pinecone vector database.
- Integrated gpt-4o mini LLM for response augmentation and used LangChain for data processing.
- Utilized Streamlit for user interface to display a chat-like app.

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.