

## MUHAMMAD YAHYA

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### PROFESSIONAL SUMMARY

Enthusiastic Computer Science student skilled in graphics design, lab instruction, and project development. Proficient in various programming languages and frameworks with strong problem-solving abilities.

### EXPERIENCE

**FAST National University of Computer and Emerging Sciences, Islamabad**

**AI/ML Intern at UrduX AI e-lab**

**July 2024 – Present**

- 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 using ReactJS (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.

**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.

**Banking Application System in Java**

**September 2023**

- Built a comprehensive banking system using Object Oriented Programming principles.
- Secured data with encapsulation, created class hierarchies, and implemented polymorphism.

**Crystal Quest Game in C++**

**May 2023**

- Utilized proficiency in C++ programming and data structures to ensure efficiency.
- Employed shortest path algorithms, including Floyd-Warshall, Dijkstra, and Prim's to determine the most efficient path to the crystal from the player's position.

**Image Encoder Decoder Quadtree Implementation in C++**

**April 2023**

- Designed and implemented a program for encoding and decoding images using quadtree and 2D linked list.
- Conducted comprehensive testing and debugging to verify the accuracy of the decoded image.
- Utilized the OpenCV library to integrate image reading and writing functionality.

### SKILLS

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

**Frameworks and Tools:** Cisco Packet Tracer, Git, GitHub, Linux/Unix, Google Colaboratory, Jupyter Notebook, Anaconda, Visual Studio, Visual Studio Code, Eclipse IDE, Figma, SQL Server, ASP.NET, Node.js, npm

**Soft Skills:** Team Management, Public Speaking, Teamwork, Debugging, Troubleshooting, 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.