

Fatima Tu Zahra

Islamabad, Pakistan

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Portfolio: fatimatuzaahraportfolio.vercel.app

Education

FAST-NUCES, Islamabad — B.Sc. Data Science

Sep 2023 – Present | CGPA: 3.58/4.0 | Gold Medalist - Fall 2024 | Dean's List (2nd - 4th) Semesters

Experience

AI Internship– Generative AI and Embedded Systems Lab, FAST NUCES, Islamabad (*Summer 2025*)

Teaching Assistant– Probability and Statistics - *Fall 2025* | Computer Organization and Assembly Language | *Summer 2025*

Skills

AI & Machine Learning: LangChain, Hugging Face Transformers, FAISS, PyTorch

Web Development: FastAPI, WebSockets, Redis, Celery, PostgreSQL, REST APIs

Design & Game Development: Unity, Godot, Figma, Blender, GIMP, Krita

Tools & Platforms: Git, AWS SageMaker, Anaconda, Visual Studio, Trello, R Studio

Soft Skills: Team Leadership, Problem Solving, Analytical Thinking, Creativity, Communication, Time Management

Certifications

AWS Nanodegrees:

- AI Programming with Python Nanodegree
- Machine Learning Fundamentals Nanodegree

Projects

RAG-Powered Multimodal Voicebot — *FastAPI, LangChain, Redis, Celery, PyTorch* | *Summer 2025* | *Genesys Lab Internship*

- Built a real-time AI voice assistant integrating speech-to-text, retrieval-augmented generation (RAG), and text-to-speech for natural voice-to-voice conversations.
- Designed a multi-tenant FastAPI backend with JWT auth, WebSocket streaming, and Celery task queue for distributed GPU workloads.
- Implemented hybrid retrieval using FAISS and BM25, and optimized performance through Redis caching and asynchronous processing.

(prototype ver on GitHub: github.com/fatima-1206/RAG-Document-Summarizer-and-QA)

Game Development *Spring 2023*

- Created a **3D endless runner** in Unity, showcasing proficiency in applying game logic design and object interaction
- Created multiple 2D games, including a platformer and a Flappy Bird Clone in Unity, applying game

.NET Desktop Game: PixelWonders — *C#, .NET MAUI / WinForms* | *Spring 2025*

- Developed a 2D desktop game showcasing gameplay logic, animation systems, and UI management.
- Designed cross-platform compatibility and implemented object interaction and event-driven mechanics.

Hobbies & Volunteer Work

Python Instructor | *Summer 2024*

Taught Python programming basics with graphics to children ages 8-12.

AI Integration Workshops | *Spring 2025*

Conducted workshops for government school teachers on AI tools for classroom use

Digital Art / UI Design

Designed assets for personal projects and collaborations using GIMP, Figma, Blender, and IbisPaintX.

Programming Workshops | *Fall 2025*

Conducted programming workshops on C++ as a part of the FAST Data Science Society