MUHAMMAD MUJTABA

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EDUCATION

FAST - National University of Computer and Emerging Sciences, Islamabad　　*2022 – Present*
Bachelor of Science (Computer Science)
Major: Data Science, Deep Learning, Machine Learning

PROJECTS

ConstructionSightAI (Final Year Project)

- Built an **AI-based construction monitoring system** using object detection, tracking, and spatio-temporal activity analysis.
- Implemented real-time safety compliance checks with scalable inference workflows and curated inspection datasets.

Job Market Intelligence Platform | Python, Flask, SQLite, Groq API

- Engineered a **multi-source job intelligence pipeline** with normalization, deduplication, skill extraction, and taxonomy mapping for analysis-ready data.
- Built an admin review system with bulk workflows and **LLM-assisted quality enhancement** (chunking, retries, key rotation) plus CSV/HTML/Sheets exports.

Parallel Butterfly Counting in Bipartite Graphs (Research Based) | C++, MPI, OpenMP, METIS

- Developed a parallel graph mining implementation based on the PARBUTTERFLY research approach.
- Applied **hybrid MPI + OpenMP parallelism** and optimized ranking/partitioning to improve runtime and memory efficiency.

Echo-Persona | Python, PyTorch, AI/ML

- Built a **real-time voice cloning application** with deep learning-based text-to-speech synthesis.
- Enabled high-fidelity voice generation and style transfer for personalized speech outputs.

DarkWeb Forensic Tool | Python, MySQL

- Developed an **offline digital forensic utility** for dark-web artifact analysis.
- Implemented extraction of crypto addresses and PGP keys with automated risk scoring and PDF audit reports.

Orenix Hospital Management System | Java, JavaFX, MySQL

- Developed a desktop **hospital administration systema** with patient records, doctor portals, and billing workflows.
- Designed relational database-backed modules for appointment handling and operational reporting.

TECHNICAL SKILLS

Languages: Python, C++, Java, SQL, PL/SQL
ML/CV: PyTorch, OpenCV, YOLOv8, Detectron2, Deep Learning, Computer Vision
Backend/Data: FastAPI, Flask, ETL, REST APIs, Microservices, Data Mining
Systems/Tools: MPI, OpenMP, Docker, AWS (EC2, S3), Git, MySQL, PostgreSQL, Oracle

TRAININGS / CERTIFICATIONS

Seminars: AI and Autonomous Systems | Advanced SQL and PL/SQL Optimization | Diffusion Models | Data Warehousing and ETL Pipelines

ACTIVITIES / INTERESTS

Workshop Officer, Google Developers Group (GDG), FAST NUCES