Ameer Uqba Goraya

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Education

Forman Christian College (A Chartered University) Lahore, Pakistan
BS (Hons) Computer Science; GPA 3.48 *Oct 2021 – July 2025*

- **Relevant Courses**: *Introduction to Artificial Intelligence, Machine Learning, Data Structures and Algorithms, Design and Analysis of Algorithms, Object-Oriented Programming, Numerical Computing, Probability and Statistics, Discrete Mathematics*

Experience

CureMD Lahore, Pakistan
Web Design & Architecture Intern *July 2025 – Sept 2025*

- **Engineered a full-stack patient management system using C# ASP.NET, Angular, Docker, and SQL Server,** and successfully deployed it on Microsoft IIS, achieving 30% faster response times and supporting concurrent usage by 100+ users with smooth scalability.
- **Enhanced performance and system reliability** by applying modern architectural practices, query optimization, and containerized deployment, resulting in **reduced page load times by 25%** and improved overall system stability.

Forman Christian College University Lahore, Pakistan
Teaching Assistant (Data Structures and Algorithm, Machine Learning) *Sep 2024 – July 2025*

- **Designed and evaluated machine learning and data structures assignments,** assessed student submissions, and provided detailed feedback to ensure alignment with academic objectives and reinforce conceptual understanding.
- **Mentored 100+ students through labs, project work, and lectures,** offering personalized guidance, troubleshooting support, and conceptual clarifications to enhance engagement and applied learning.

Projects

Crash AnalytiX (Final Year Project)

- **Developed a real-time traffic accident detection system** using PyTorch, OpenCV, YOLOv12, DeepSORT, achieving **47 FPS throughput and 0.019s latency**.
- **Integrated multiple modules** including accident detection, severity assessment, license plate recognition, and object identification, attaining an **average mAP50 of 92.8 across all modules**.
- **Implemented a feedback loop** that reduced false positives by **23%**, enhancing model robustness and reliability over time.
- **Deployed the system as a full-stack web application** with a React frontend and Flask backend, supporting real-time inference, automated metadata storage, report generation, and instant emergency notifications.

Jewelry Store (Web and Blockchain-Powered E-commerce App)

- Designed user-friendly, responsive jewelry store using React and Django with product browsing, checkout, and intuitive navigation.
- Integrated Solidity smart contracts on the Sepolia testnet for transparency and decentralized payments, achieving <5s confirmation times and successfully processing 25+ fast, test transactions.

Local RAG Assistant (React + TypeScript, Flask/Python, Ollama GPU)

- Built a **Local RAG Assistant** with **React (TypeScript), Flask, ChromaDB/FAISS, and Ollama LLMs on RTX 4070**, enabling **offline multi-format ingestion** (PDF, DOCX, PPTX, XLSX, TXT) with full data privacy
- Optimized pipeline to deliver **<1.2s avg query time (-60%)**, **1,000+ docs processed in <2 min**, and **>89% retrieval accuracy** via FAISS indexing, GPU-accelerated embeddings, and intelligent chunking.

ResearchHub - AI Research Assistant (Next.js, Flask, LangChain, Gemini API, and FAISS)

- **An AI-driven academic research assistant**, solving the problem of slow and irrelevant paper discovery by implementing a multi-factor ranking pipeline (semantic similarity, citations, recency, venue), cutting search-to-result time to **<2 seconds**.
- **Optimized backend with async scraping, embedding-based retrieval, and caching, and frontend with code splitting and lazy loading**, achieving **300–700ms warm API responses, <2s Largest Contentful Paint (LCP), and 50+ req/sec throughput**.

Programming Skills

- **Programming Languages:** Python, C/C++, C#, Solidity(Blockchain)
- **Web Development:** Angular, Next.JS, React.JS, Express, Node.JS, Django, Flask, BeautifulSoup4, MongoDB, JavaScript, ASP.NET
- **AI & Machine Learning:** PyTorch, TensorFlow, scikit-learn, CuPy, NumPy, OpenCV, Ultralytics, YOLO, Matplotlib, OpenAI, LangChain, LlamaIndex, LangGraph, Hugging Face, vLLM, llama.cpp
- **Other Tools:** AWS, WSL, Docker, Git, Cursor, Google Colab, Kaggle, VirtualBox, Kali Linux, Metasploitable, Figma