

# Muhammad Ahmad

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## EDUCATION

Carnegie Mellon University

Graduation: 2030

B.S. Computer Science — School of Computer Science

## EXPERIENCE

Qatar Computing Research Institute

June 2026 - July 2026

Research Intern

- Contributed to Fanar, Qatar's first Arabic-native **generative AI platform** and **LLM**, sponsored by the **Ministry of Communications and Information Technology**, focusing on the **embeddings** and **retrieval pipeline**
- Co-authored a **research paper** introducing a novel Arabic retrieval benchmark, submitted to ArabicNLP 2026
- Designing and implementing a **learned sparse retrieval** method based on the **MILCO architecture**, integrating it across multiple **RAG systems** within the platform

Qatar Airways

Feb 2026 - June 2026

Digital Systems & Technology Intern - HR

- Served as **technical liaison** between HR (Talent Management) and IT, translating business requirements into implementation specs for **enterprise HR technology initiatives**
- Designed an **IT proposal** for a skills taxonomy system for the **SVP of IT** — including solution architecture, a PDF extraction pipeline for machine-readable ingestion, and **automated skill-gap comparison** — then evaluated outputs, **identified matching limitations**, and recommended **semantic matching** techniques to align ESCO, SFIA, O\*NET, and SkillsFuture Singapore into a hybrid taxonomy
- Engineered a **semi-automated Power BI** reporting pipeline generating **110+** dynamic executive talent cards for the **CPO** and **HR SVPs** — replacing a manual PowerPoint workflows — with **live enterprise database** connectivity, drill-through logic, and multi-source data transformation
- Presented **proposals, prototypes, and implementation updates** to HR/IT leadership (**VPs, SVPs**) throughout project delivery

## PROJECTS

Alumni Intelligence Platform

November 2025

- Built and deployed an alumni networking platform (**70+ users, 230+ connections**) featuring a **hybrid recommendation engine** (graph-based heuristics + Personalized PageRank + 87%-F1 NLP classifier) that cut match runtime from **30–90s** to under **a few seconds**

Distributed P2P Messaging System

August 2025

- Built a serverless P2P messaging network (**partial mesh topology**) for disaster-relief scenarios, featuring **automatic peer discovery**, **BFS** multi-hop routing, offline SQLite message queuing with 30-second retry delivery, async non-blocking I/O, hop-limit loop prevention, and **dynamic routing graph reconstruction**

## LEADERSHIP AND ACTIVITIES

TEDx Speaker — “Behind the Reel”

- Delivered a keynote talk on authenticity and personal growth

Head Boy & Student Council Head

Oryx International School

- Directed **10+ prefects** and coordinated **7+ major stakeholder events** (Ministry of Education, Qatar Airways)
- Mentored **600+ students** weekly via assemblies; founded the school's **first successful debate club**
- Selected as student body representative to **interview** candidates for **Executive Principal**

Lead Academic Mentor

Oryx International School

- Served as the solo peer instructor for **75+** students, providing guidance in **6** advanced subjects

## Honors and Awards

- British Chemistry Olympiad (UKChO)** – Gold | **World Scholar's Cup** – Gold (Debate & Writing)
- National Academic Excellence Award** – Ministry of Education | **Highest in Qatar** – IT A-level (Pearson Edexcel)

## SKILLS

Python, JavaScript, HTML/CSS, SQL, XGBoost, SHAP, scikit-learn, BERT, TF-IDF, SVM, Random Forest, cosine similarity, PageRank, OpenCV, HuggingFace, Pandas, NumPy, Plotly, Power BI, PostgreSQL, SQLite, Microsoft Access, openpyxl, Django, Flask, WebSockets, Django Channels, REST APIs, Git, Streamlit, Jupyter, Render, Supabase, SendGrid, joblib