Ahmed Mohsen

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ahmedmohsen-eng • Codeforces: Profile | Portfolio

Summary

Performance-driven Computer Engineering student at UFE with a focus on **system-level problem solving** and **low-level mathematical modeling**. Expert in approaching complex technical challenges from first principles to ensure logical soundness and efficiency. Skilled in **C++** and **Python**, with a dedicated interest in RAG architectures and algorithmic optimization.

Technical Skills

Programming: **C++ (Advanced Logic & STL)**, Python (Data Structures & Automation).

AI & Engineering: RAG Architectures, Transformer Basics, Sentiment Analysis, System-Level Thinking.

Core Foundations: Algorithms, Data Structures, Discrete Mathematics, Recursion, Signal Processing.

Tools: Git/GitHub, VS Code, Google Colab, Tinkercad.

Technical Experience & Projects

Customer Support AI Implementation — **Cairo**
AI Developer (Discovery Phase) — *Feb 2026–Present*

- Investigated **Retrieval-Augmented Generation (RAG)** to bridge the gap between static LLMs and dynamic data.
- Built a prototype pipeline for ticket classification using Python-based sentiment analysis, focusing on logical data flow.
- Explored vector storage mechanisms to implement context-aware retrieval for automated support agents.

Integrated Sensor & Response System
Hardware Developer — *Nov 2023*

- Developed C++ firmware to process data from **7+ concurrent sensors** for real-time diagnostic reporting.
- Achieved a code accuracy rate exceeding **80%** by implementing rigorous error-handling in the data pipeline.
- Designed and verified a custom IR command protocol for hardware communication via Tinkercad simulations.

Competitive Programming & Logic

ICPC UFE Community — **Codeforces**
Active Member — *2025–Present*

- Solved **200+ problems** on Codeforces, mastering Level 0 and progressing through Level 1 challenges.
- Participated in the **Beaver Competition (MCIT Egypt)**, utilizing computational thinking to solve complex informatics challenges.
- Focused on optimizing execution time and memory footprints through efficient use of the C++ Standard Template Library (STL).

Education

Université Française d'Égypte (UFE) — **Cairo**
B.Sc. in Computer Engineering — *2025–Present*

- **Scholarship:** Recipient of the **Schneider Electric & UFE Excellence Scholarship** for academic merit.
- **Relevant Coursework:** Advanced Calculus, Linear Algebra, Discrete Math, Physics, Computer Science I.

Obour STEM School — **Obour**
High School Diploma (STEM Track), GPA: 3.83/4.00 — *2022–2025*

- Developed an engineering mindset through Capstone projects requiring cross-disciplinary scientific research.

Honours & Certifications

2024: **AI Training Certification:** Egyptian Academy for Engineering (Neural Networks & ML).

2023: **Arduino Level 1 & Programming:** EGY STEM & EL-Forsa Academy (Hardware Interfacing).

2022: **American Math Olympiad (AMO):** Southern Illinois University (Competitive Math Participation).

2021: **Beaver Competition Participation:** Ministry of Communications and IT (MCIT), Egypt.

Languages

Arabic: Native — *Bilingual proficiency*

English: B2 — *Professional Working Proficiency*

French: A1 — *Elementary / Basic Communication*