

Mohamed Ahmed Mostafa

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EDUCATION

Zagazig University

Bachelor of Science in Computer Science

Expected May 2026

Zagazig, Egypt

- **Coursework:** Data Structures & Algorithms, OS, Distributed Systems, Compiler Design, Software Engineering.

TECHNICAL SKILLS

Languages: C#, Python, C++, TypeScript, SQL, Go, HTML/CSS

Frameworks/Libraries: ASP.NET Core, FastAPI, Entity Framework, PyTorch, WebGPU

Tools/Databases: Git, Docker, CI/CD, Azure, Linux, SQL Server, PostgreSQL, Redis

Core Concepts: System Design, OOP, Design Patterns, Bit Manipulation

LEADERSHIP

Technical Instructor & Mentor

ICPC Zagazig Community

2023 – Present

Egypt

- Leading sessions on **Advanced DSA** for 100+ students; focusing on Dynamic Programming and Graph Theory.

TECHNICAL PROJECTS

WDLC (Web Deep Learning Compiler) | *Python, TypeScript, WebGPU*

2025 – Present

- Developing a high-performance runtime to execute **PyTorch models** in-browser via client-side GPUs[cite: 15, 19].
- Engineered a compiler to parse computational graphs and optimize tensor operations for **WebGPU runtime**.

BlitzMate Chess Engine | *Python, FastAPI, Bit Manipulation*

2025 – Present

- Built a Classical engine using **Alpha-Beta Pruning**, **Negamax**, and **Zobrist Hashing**.
- Optimized move generation using bitboards, achieving high-speed node evaluation for competitive gameplay.

Bosla - AI Learning Platform | *.NET 9, React, Onion Architecture*

2025 – Present

- Designed a multilingual platform using **Onion Architecture** to generate dynamic learning roadmaps via Pipeline Application.

Skyra - Weather Prediction | *Python, FastAPI, LLM, NASA API*

2025

- Developing a FastAPI backend for fetching metadata from **NASA APIs** for real-time environmental data processing.

Villa Management System | *ASP.NET Core, SQL Server, AutoMapper*

2025

- Engineered a high-concurrency **RESTful API** utilizing **Asynchronous Programming** to maximize server throughput and reduce thread starvation.
- Implemented a decoupled architecture with **DTOs** and the **Repository Pattern** to ensure clean separation of concerns and data integrity.

Enterprise E-Commerce API | *ASP.NET MVC, Identity, SQL Server*

2025

- Architected a scalable backend adhering to **SOLID principles** with **Identity-driven RBAC** for secure, enterprise-grade access control.
- Designed robust **order-processing logic** utilizing the **Unit of Work** pattern to maintain atomic transactional integrity across complex workflows.

ACHIEVEMENTS & COMMUNITY

Competitive Programming: Solved **350+ problems** on Codeforces/LeetCode (**Handle: Medo00**); Active ICPC member.

Technical Content: Creator of **"DarkCipher00"** (YouTube), teaching DSA and Algorithms to the Arabic community.

Chess: Ranked in the **top 5% (1700+ Rating)** on Chess.com; applying strategic game theory to software design.