

Omar Mahmoud Elghaiaty

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Education

Bachelor of Computer Science, German University in Cairo, 2020 – Present

Projects

- **Virtual Clinic and Pharmacy System (MERN Stack)**

- Technologies Used: MongoDB, Express.js, React, Node.js, Git, GitHub
- Spearheaded an 8-member team to develop a system focusing on database functionality, system optimization, and user feedback.
- GitHub: <https://github.com/advanced-computer-lab-2023/khaleha-ala-alah-Clinic.git>

- **Sports Application (SQL)**

- Technologies Used: SQL, .NET Core
- Designed a relational database for real-time data connections between match events and fan engagement.
- GitHub: <https://github.com/OmarElghaiaty/DatabaseProject.git>

- **Tomasulo Algorithm Simulator (Java)**

- Technologies Used: Java
- Created a simulator for the Tomasulo algorithm to visualize CPU pipeline optimization.
- GitHub: <https://github.com/OmarElghaiaty/TomasuloSimulator.git>

- **Marvel Game (Object-Oriented Programming in Java)**

- Technologies Used: Java
- Led a 4-member team to develop a game using object-oriented programming principles.
- GitHub: <https://github.com/OmarElghaiaty/GameProject.git>

Bachelor Thesis Project

Frequency Masking for Domain Generalization in Fan Anomalous Sound Detection

Technologies Used: Python, PyTorch

Developed a system to detect anomalous sounds in industrial fans using frequency masking for domain generalization. Implemented using Python and PyTorch, the system effectively identifies abnormal sound patterns, enhancing predictive maintenance capabilities in industrial settings.

Courses

- Data Structures and Algorithms
- Database and Database Management Systems
- Computer Architecture
- Object-Oriented Programming
- Operating Systems
- Embedded Systems
- Software Engineering