

# AHMED MOHAMED SOBHY

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## ABOUT

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An innovative and enthusiastic computer engineering student. I am constantly seeking new challenges and opportunities to improve my skills and knowledge. Adept at creating functional, user-friendly, practical, and professional applications. Dealt with computers since childhood and have always been obsessed with technology. Leverage analytical and technical skills to deliver results that meet clients' expectations while paying attention to every detail. Able to effectively self-manage during independent projects and collaborate as a part of a productive team. Worked as a freelance full-stack web developer, specializing in both frontend and backend development.

## EDUCATION

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### Cairo University

October 2022 – July 2027

Bachelor of Computer Engineering, Faculty of Engineering

**Grade:** Excellent (first on class)

## WORK EXPERIENCE

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### Freelance Full-Stack Web Developer

July 2023 – Present

Self-Employed (via Mostaq) (<https://mostaq.com/u/a7medsob7y>)

- Specialized in both frontend and backend development, delivering high-quality web applications tailored to client needs.
- Developed multiple web application projects, including: a multi-tenant hotel reservation management system, a fully custom exam platform, a lost/found website for a new startup business in Egypt (IFoundIt), and an on-site course reservation system.

## PROJECTS

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### Brick Breaker Game in 8086 Assembly

December 2024

8086 Assembly – DOSBox-X (<https://github.com/AhmedSobhy01/brick-breaker-assembly>)

- A classic Brick Breaker game built using 8086 Assembly Language, featuring gameplay enhancements like power-ups and a unique chat mode for communication. Designed as part of the Microprocessors Course during the second year of a Computer Engineering program.

### Jobesta

December 2024

React – Node.js – Express – PostgreSQL – WebSocket (<https://jobesta.ahmedsobhy.net>)

- Jobesta is a platform connecting freelancers and clients, offering job posting, bidding, real-time messaging, secure payments, project tracking, and feedback. It provides an intuitive experience with features like real-time updates, an admin dashboard for managing users and content, and a responsive design for seamless experience across devices.

### WebRTC Video & Audio Chat

September 2024

WebRTC – WebSocket – Node.js – React – MongoDB (<https://webrtc-video-chat.ahmedsobhy.net>)

- A WebRTC-based video and audio chat app that allows users to create and join private rooms with unique codes and passwords for real-time communication. It uses WebRTC to enable real-time video and audio calls between two peers. Users can create a room with a unique code and password, then share the room details or link with a friend to initiate secure peer-to-peer video and audio calls. The backend is powered by a Node.js server utilizing Socket.IO.

## Digit Classifier

August 2024

Python – TensorFlow – React (<https://digit-classifier.ahmedsobhy.net>)

- A "Hello World" ML neural network project features a Fast API docker image for digit predictions and a React frontend where users can draw digits to see instant predictions powered by a TensorFlow Neural Network, trained on the MNIST dataset.

## Watch Party Website

June 2024

Node.js – WebSocket – VueJS (<https://party-streaming.ahmedsobhy.net>)

- A platform for synchronized movie watching with friends and family, offering offline and online streaming, real-time chat, emoji reactions, and support for multiple subtitles.

## AES Encryption using Verilog on FPGA

May 2024

FPGA – Verilog (<https://github.com/AhmedSobhy01/AES-Verilog>)

- An implementation of the Advanced Encryption Standard (AES) encryption algorithm using Verilog supporting AES-128, AES-192, and AES-256 encryption/decryption.

## Apartments Management System

October 2023

Laravel – VueJS – Tailwind (<https://arms.ahmedsobhy.net>)

- As a freelance project for a client, the apartment management platform supports multiple languages and users. It facilitates apartment management, including adding, editing, and deleting units with state specifications (empty, reserved, inhabited, cleaning). Detailed records track state changes and occupancy history. The user-friendly website offers statistical insights like occupancy rates, state distribution, incomes, and expenses monthly. Diverse user roles with permission settings enable tailored access and operations within the system.

## Rental Payment Management System

October 2022

Laravel – VueJS – Tailwind (<https://rpms.ahmedsobhy.net>)

- A management system for landlords to track and set payments for tenants and the ability for tenants to view all their dues and payments.

## Finance Tracker

January 2021

Laravel – VueJS – Bootstrap (<https://finance-tracker.ahmedsobhy.net>)

- It is simply a finance tracker that tracks your income, expenses, debts, and cash money.

## Vistagram

December 2020

Laravel – VueJS – Bootstrap (<https://vistagram.ahmedsobhy.net>)

- A simple replication of the official Instagram website with the ability to post images for the web application.

## RESEARCH EXPERIENCE

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### Query Optimization and Indexing Strategies

December 2023

2nd Place, TCCD Research Day (<https://github.com/AhmedSobhy01/query-optimization-research>)

- Conducted research on SQL query optimization, focusing on the impact of indexing strategies and PostgreSQL configurations on query performance. Analyzed various indexing methods (e.g., single-column, composite) and PostgreSQL settings (e.g., cache size, buffer pool) to evaluate their effects on query execution times. The study provided recommendations for improving query performance based on dataset size and query type. The project secured second place at TCCD Research Day, offering valuable insights for optimizing relational database queries.

## CERTIFICATIONS

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### Fundamentals of Backend Engineering

September 2024

Udemy (<https://www.udemy.com/certificate/UC-61416fc9-95ce-4710-837e-a91148dc4e2d>)

- Learned the fundamentals of backend engineering, including communication design patterns and protocols.
- Gained understanding of operating system fundamentals, including threads, processes, and asynchronous I/O in Linux.
- Explored key backend technologies such as HTTP/1.1, HTTP/2, HTTP/3, gRPC, WebRTC, WebSockets, and TLS 1.2/1.3.

### Machine Learning Specialization

July 2024

DeepLearning.AI, Coursera (<https://www.coursera.org/account/accomplishments/specialization/VNJ48TDGR2N2>)

- Gained expertise in building machine learning models using NumPy, scikit-learn, and TensorFlow.
- Covered key techniques in supervised learning (linear regression, logistic regression, decision trees), unsupervised learning (clustering, anomaly detection), and neural networks for multi-class classification.
- Learned best practices for ML development and applied methods like decision trees, random forests, boosted trees, recommender systems, and deep reinforcement learning.

## SOFTWARE SKILLS

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C++	Laravel	REST APIs	Docker
Python	React.js	Linux	Tailwind
JavaScript	VueJS	Git	Bootstrap
Node.js	MongoDB	Verilog	
PHP	MySQL	WebSocket	

## SOFT SKILLS

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Time Management	Communication Skills	Conflict Resolution	Teamwork
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## LANGUAGES

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English - Fluent	Arabic – Native Language
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