

# Mahmoud Mohamed Abdalaziz

## Software Engineer

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### PROFILE

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Full-stack .NET Developer with solid hands-on experience building scalable web applications using ASP.NET Core, Entity Framework, and modern front-end tools. Proficient in layered architecture, RESTful API design, and object-oriented programming. Passionate about clean code, problem-solving, and delivering maintainable software solutions. Actively developing real-world projects and continuously expanding knowledge through technical reading and experimentation.

### EXPERIENCE

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- Programming Instructor, Self-employed**01/2023 – 01/2024  
Zagazig, Egypt
  - Taught students how to solve problems using C++, Object-Oriented Programming (OOP), and Data Structures.
  - Provided practical guidance and hands-on learning experiences to help students develop problem-solving skills and improve their programming abilities.
  - Assisted students with their graduation projects
- IT Technical Support Specialist, Al-Qadisya for Computer Maintenance**01/2019 – 01/2024  
Zagazig, Egypt
  - Diagnosed and repaired hardware issues in desktops and laptops.
  - Installed and configured operating systems (Windows/Linux), essential drivers, and software suites.
  - Performed system formatting, data backup, and recovery, and network setup.
  - Built custom PCs for clients based on performance needs and budget, providing hardware recommendations and guidance.

### Education

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- Higher Postgraduate Diploma in Computer Science,**09/2023 – 07/2025  
*Faculty of Graduate Studies for Statistical Research*  
Cairo University
  - A two-year academic program providing solid theoretical and practical knowledge in core computer science fields. The diploma is equivalent to a CS bachelor's and qualifies for a Master's degree.
  - GPA: 3.3/4.0 - Very Good (B+)
  - Graduation Project:* Full-Stack Clinic Management System – Grade: Excellent (4.0)  
GitHub Repo [🔗](#)
- Bachelor's degree in commerce, Faculty of commerce**09/2017 – 07/2021  
Zagazig university

### CERTIFICATION & TRAINING

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- Foundational C# with Microsoft – FreeCodeCamp**  
Certificate Link [🔗](#)
- CS50x: Introduction to Computer Science – Harvard University**  
Certificate Link [🔗](#)
- Additional Certificates (Git, SQL, Web, OOP, etc.)**  
Certificate Link [🔗](#)

## PROJECTS

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### **LitraLand**, *Full-Stack Web Application*

A web-based system for managing physical libraries and enabling user-driven book sharing, exchanging, and selling.

- Designed and implemented a multi-role system: Admins (library staff) and Users (readers).
- Developed full-stack features for book uploads, transactions, user profiles, and admin-level control.
- Integrated third-party services: Google/Facebook login, WhatsApp API notifications, SMTP email, Cloudinary for image hosting.
- Used background processing via Hangfire for scheduling reminders and updates.
- Built using .NET Core MVC, SQL Server, EF Core, AutoMapper, Bootstrap, jQuery, Cloudinary, Hangfire, OAuth, and a layered architecture.
- Project Demo [🔗](#) • ERD [🔗](#) • Schema [🔗](#) • GitHub Repo [🔗](#)

### **Survey Basket**, *Survey Management System*

A RESTful Web API for managing surveys, questions, answers, participants, and results, designed with scalable architecture and secure authentication.

- Developed full-featured endpoints for surveys, questions, answers, participation, and result analysis.
- Implemented JWT-based authentication and role-based authorization using Microsoft Identity.
- Designed and built the database schema using Entity Framework Core with Fluent API.
- Used FluentValidation and Mapster for validation and object mapping.
- Integrated background jobs via Hangfire for scheduled email notifications.
- Configured structured logging with Serilog and daily rolling JSON outputs.
- Enabled API versioning, health checks, rate limiting, and CORS configuration for production readiness.
- Built with ASP.NET Core Web API (.NET 9), EF Core, FluentValidation, Mapster, JWT, Hangfire, and Serilog
- GitHub Repo [🔗](#)

### **STR**, *Custom String Handling Class in C++*

A handcrafted C++ string manipulation library that replicates and extends std::string functionality from scratch.

- Built a custom STR class with support for append, insert, erase, replace, substr, and find operations.
- Implemented operator overloading (+, +=, =, [], <<, >>) for intuitive string manipulation.
- Handled memory allocation manually, including deep copies and exception-safe operations.
- Added advanced utility methods like reverseWords, trim, split, and capitalizeFirstLetters.
- Designed with encapsulation, modular functions, and private member variables.
- GitHub Repo [🔗](#)

### **Mini Frontend Projects**, *(UI & Practice Projects)*

- Personal Portfolio Website – Responsive personal site built with HTML, CSS, and JavaScript.  
Live Demo [🔗](#)
- To-Do List App – Interactive JS-based to-do list with local storage and task management.  
Live Demo [🔗](#)
- Admin Dashboard UI – Modern responsive admin interface using Flexbox and CSS Grid.  
Live Demo [🔗](#)

## SKILLS

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**Programming Languages:** C# | C++ | Python | JavaScript | SQL

**Databases:** 5QL Server | SQLite

**Web Development:** ASP.NET Core MVC & Web API | Razor Pages | HTML5 | CSS3 | Bootstrap | jQuery | RESTful API Design | CORS | Rate Limiting

**Core Concepts:** | OOP | SOLID Principles | Clean Architecture | Dependency Injection | Data Structures & Algorithms | Problem-Solving | Design Patterns

**Tools & Technologies:** Visual Studio | VS Code | Git & GitHub | Postman & Swagger | ADO.NET | Dapper | Entity Framework Core | FluentValidation | Mapster | AutoMapper | Microsoft Identity | JWT Authentication | Hangfire | Serilog | MailKit

## ACHIEVEMENTS

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- **Solved over 400+ coding problems across multiple platforms, including HackerRank, CodeWars, and personal projects.**
- **Maintained a dedicated Problem Solving GitHub repository documenting solutions, structured explanations, and learning strategies.**
- **Wrote a detailed programming guide within the repository to help beginners approach programming with the right mindset and problem-solving methodology.**
- Hackerrank profile [🔗](#)
- codewars profile [🔗](#)
- Problem Solving GitHub Repository [🔗](#)