

# Omar Afifi

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## Summary

Computer & Systems Engineering student passionate about developing innovative real-world solutions, including smart systems with Arduino, Java-based desktop tools, and full-stack web and mobile applications. Quick to learn new technologies, collaborative in team environments, and dedicated to delivering reliable and scalable results.

## Skills

- Java | JavaFX | C | C++ | Dart | Flutter | Python | HTML | CSS | JavaScript | Node.js | SQL | NoSQL | OOP | DSA | Git
- Arduino | ESP32 | PCB Design | Proteus | Fritzing | Microsoft Office
- Web Development | Mobile Development | Embedded Systems & IoT | English (Fluent), Arabic (Native)
- Problem Solving | Project Management & Organization | Effective Communication & Teamwork | Adaptability

## Experience

### Software Engineer Intern

[ZAGSYSTEMS](#)

06/2024 - 09/2024

- Assisted in design, prototyping, and testing of Arduino & ESP32-based IoT devices.
- Implemented new features on the ZagSystems website.

## Projects

### Portfolio Website

[Omar-Afifi](#)

- Building a portfolio website to highlight projects, skills, and accomplishments using HTML, CSS, JavaScript, and Node.js.
- Focuses on delivering a modern, clean design with animations, responsive elements, and an optimized user experience.

### IoT-based Smart Irrigation System

[Z-Garden](#)

- Monitors air temperature, humidity, soil moisture, liquid temperature, water TDS, and pH.
- Activates irrigation based on adjustable soil moisture thresholds and prevents pump damage if the tank is empty.
- Powered by 18V solar cell, battery (up to 20 hours), or adapter; includes dual USB ports.
- Real-time data access via iOS, Android, web, and local LCD display.
- Features automated pump control, extended battery capacity, modular design, and extendable Wi-Fi range.

### Interactive Game

[Digging Jim](#)

- An interactive game using Java and JavaFX, featuring engaging gameplay mechanics and user interfaces.
- Implemented real-time game updates, animations, and game logic to enhance player experience.
- Focused on optimizing game performance and integrating user-friendly controls.

### Grade Management System

[Student Grade Analyzer](#)

- Simplifies student data management with a user-friendly interface for adding, viewing, and sorting records.
- Implements efficient sorting algorithms (QuickSort, MergeSort, RadixSort) with execution time tracking.
- Features seamless import/export functionality for Excel (.xlsx) files to manage large datasets.
- Provides statistical analysis (mean, median, mode, range, etc.) for comprehensive performance insights.
- Visualizes grade distribution with interactive bar charts for clear evaluation.
- Ensures data persistence across sessions using a JSON-based storage system.

## Education

### Bachelor of Engineering

[Zagazig University](#)

*Zagazig, Egypt*

09/2022 - 06/2027

- Major: Computer and Systems Engineering.