Amr Mahmoud Back-End Engineer

✉ amr.mahmoud.dev05@gmail.com ✆ +20 103 305 0549 ⬡ Amr-Ma7moud </> LeetCode
in Amr-Mahmoud ⚲ Alexandria, Egypt

Summary

Back-End Engineer and Computer Science student with experience building RESTful APIs, authentication systems, and database-driven backends using Node.js, Express.js, Laravel, and Flask. Strong foundation in data structures, system design, and Linux-based development environments.

Experience

Android Development Trainee: *Digital Egypt Pioneers Initiative (DEPI)* July 2025 – November 2025

- Developed native Android applications using **Kotlin** and **Jetpack Compose**, adhering to Modern Android Development (MAD) standards.
- Worked within MVVM-based Android architecture, integrating backend APIs and applying security and testing best practices.
- Implemented best practices for **Android Security** and utilized **Git/GitHub** for version control and collaboration.
- Created functional documentation and wrote **Unit Tests** to ensure code reliability and maintainability.

IT Field Intern: *Egypt Japan University of Science and Technology (E-JUST)* July 2025 – September 2025

- Developed backend solutions using PHP Laravel framework for university website
- Implemented backend features for the university course catalogue using Laravel
- Developed Student Affairs portal website using Laravel & React and Integration with Paymob Payment gateway.
- Gained practical understanding of networking fundamentals (TCP/IP, routing, basic security concepts) relevant to backend and distributed systems.

Education

Bachelor of Science in Computer Science and Information Technology

*Egypt Japan University of Science and Technology (**E-JUST**)* 2023 – 2027 (Expected)

- GPA: 3.58/4.0
- Current Level: 3rd Year
- Full Scholarship Recipient through Innovators Support Fund (**ISF**)

Projects

Campus Connect: GitHub

- Developed a cross-platform university engagement portal for E-JUST students featuring event management, club discovery, room booking, facility reservations, and social feed with posts and interactions.
- Architected modular system using Git submodules enabling independent team collaboration across Back-end, Front-end, and Android repositories.
- Designed relational database schema and implemented secure authentication and authorization flows used by web and mobile clients.
- Built RESTful API with Express.js implementing JWT authentication, role-based access control, and layered architecture (Controllers, Services, Repositories) connected to MariaDB.
- **Technologies:** Node.js, Express.js, MariaDB, JWT, Kotlin, Jetpack Compose, Room, Hilt, Retrofit, React

Course Catalogue - E-JUST: GitHub

- Developed a comprehensive course catalogue system for E-JUST university enabling students to browse, search, and filter courses by faculty, program, and academic level.
- Implemented advanced search functionality with multiple filters (credit hours, course code, course name) and faculty-program hierarchical navigation.
- Built responsive frontend with Blade templates featuring pagination and dynamic content loading.
- **Technologies:** PHP (Laravel 12), MySQL, Blade, JavaScript, CSS

Taxi MDP Reinforcement Learning Simulator: GitHub

- Built an interactive RL simulator that trains an AI agent to solve the classic Taxi problem using Q-learning with configurable hyperparameters (α, γ, ϵ).
- Streamed real-time Q-values and episode statistics via Flask-SocketIO to a React + TypeScript frontend with live learning curve visualization.
- Delivered interactive features including grid configuration (3×3/4×4), obstacle placement, and manual control mode.
- **Technologies:** Python (Flask, Flask-SocketIO), Q-learning, React, TypeScript, Tailwind, Socket.IO

Task Manager with GUI: GitHub
- Built real-time system monitoring application using Electron and Flask
- Implemented interactive GUI for CPU, memory, and process monitoring
- **Technologies:** JavaScript (Electron, Node.js), Python (Flask), HTML, CSS

Project U - University Recommendation System: GitHub
- Developed university recommendation platform for student academic path selection
- Team project following software engineering best practices
- **Technologies:** Python (Flask), HTML, CSS, JavaScript

Skills

Programming Languages: Python, C++, Java, PHP, MATLAB, Kotlin, JavaScript
Web Technologies: Flask, Laravel, Node.js, Express.js, HTML, CSS, React, NextJS
Tools & Platforms: Git, GitHub, Linux, VS Code, IntelliJ IDEs, Docker
Core Concepts: Object-Oriented Programming, Data Structures, Algorithms, Problem Solving,
API, Software Development Lifecycle, System Design
Languages: Arabic (Native), English (Upper Intermediate)