

# Mohamed Adel

## SOFTWARE ENGINEER

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<https://github.com/Mo-3adel>

### Objective

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To leverage my expertise in software engineering, machine learning, and full-stack development to build scalable and intelligent solutions. Passionate about developing AI-driven applications, designing efficient backend systems, and creating interactive front-end interfaces. Seeking an opportunity to contribute to innovative software and AI projects while continuously expanding my technical expertise.

### Experience

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#### Engineering Instructor

Mind Valley | 10/2023 – Present

- Designed and delivered technical courses on Arduino programming and robotics, focusing on hardware-software integration for IoT systems.
- Taught mobile application development, guiding students in creating functional and user-friendly apps to interface with embedded systems.
- Simplified complex AI and machine learning concepts for diverse audiences, tailoring instruction to varying skill levels.
- Mentored students on developing AI-based projects using machine learning frameworks like PyTorch and TensorFlow.
- Guided learners in front-end web development, introducing them to HTML, CSS, and JavaScript basics.

### Personal Projects

#### Expenses Tracker App

- Developed a **full-stack expense tracking application using .NET Core** for backend logic and a responsive front-end interface.
- Applied **Object-Oriented Programming (OOP) principles** to build modular, reusable components
- Integrated **API functionalities** for structured data communication and implemented **MySQL database management** for efficient storage.
- Designed the UI using **Bootstrap and JavaScript**, ensuring a smooth user experience.

#### Vertical Rotary Parking System (Graduation Project)

- Designed and implemented a **smart parking system** utilizing **AI and embedded systems** to optimize space usage.
- Utilized a **microcontroller-based system** for hardware control and Python for algorithm development.

- Applied **computer vision** to detect and track vehicles, improving efficiency and automation.
- Incorporated **sensors and motors** to ensure precise operation and safety.

## Education

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### B.Sc. in Mechatronics Systems Engineering

MSA University, Giza, Egypt (2018 – 2024)

## Skills & abilities

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### Programming Languages

- Python, C, C++, C#, JavaScript (OOP)

### Machine Learning & AI

- **Machine Learning:** Scikit-learn, TensorFlow, PyTorch
- **Data Analysis:** NumPy, Pandas, Matplotlib, Seaborn
- **Computer Vision:** OpenCV, YOLO (You Only Look Once), Image Processing

### Back-End Development

- .NET Core, Flask, Django, RESTful APIs

### Front-End Development

- HTML5, CSS3, Bootstrap, JavaScript, React, Angular

### Database Management

- MySQL, PostgreSQL, SQLite, MSSQL , MongoDB

### Software Tools & Frameworks

- Git, Docker, AWS (EC2, S3, Lambda), Google Cloud

### Embedded Systems & IoT

- Microcontrollers: Arduino, Raspberry Pi, ESP32
- Communication Protocols: UART, I2C, SPI

### Soft Skills

- Problem-solving & critical thinking
- Collaboration & Teamwork
- Time Management & Productivity

## Courses & certifications

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Embedded Systems Diploma

AMIT, Giza, Egypt (08/2021 – 11/2021)

## Languages

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- **Arabic:** Native
- **English:** Fluent