Mohamed Adel

Software Engineer | AI & Full-Stack Developer
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https://github.com/Mo-3adel
Portfolio: https://portfolio-chi-vert-41.vercel.app/

Objective

Results-driven Software Engineer with a B.Sc. in Mechatronics Engineering and hands-on experience in AI-powered SaaS development, backend API design, and full-stack web development. Proficient in Python, Django, React, and cloud platforms. Adept at designing scalable backend systems, deploying ML models, and delivering impactful software solutions. Seeking to contribute to innovative projects at a top-tier tech company.

Skills & abilities

Technical Skills

Languages: Python, JavaScript (OOP/ES6+), C#, C++, C

Backend: Django, Flask, .NET Core React, Bootstrap

Fronted : HTML5, CSS3, Bootstrap, JavaScript, React

ML/AI: TensorFlow, PyTorch, Scikit-learn, OpenCV, YOLO

Databases: MySQL, PostgreSQL, SQLite, MongoDB

Tools/Platforms: Git, Docker, Vercel, AWS (EC2, S3), Google Cloud, Postman

Embedded/IoT: Arduino, Raspberry Pi, ESP32, (UART, I2C, SPI)

Other: REST APIs, JWT Authentication, Google Gemini API, python-pptx

Soft Skills

- problem-solving & critical thinking
- Time Management & Team leading

Projects

AI-Powered Document-to-Presentation SaaS Backend
Built a Django REST API to allow users to upload documents (PDF/DOCX/TXT/Images), process content via Google Gemini AI, and generate downloadable PowerPoint presentations.

- Integrated PyMuPDF, Pillow, PyPDF2 for document parsing
- AI slide structure generation and `.pptx` output via `python-pptx`
- REST endpoints secured with user auth and media storage handling

Face Mask Detection Using CNN
Developed a real-time mask detection system using OpenCV and Keras.

- Trained CNN to detect “With Mask” vs. “Without Mask” with high accuracy
- Deployed as an interactive Jupyter notebook via Google Colab

Steel Surface Defect Detection with CNN
Trained a convolutional neural network to detect defects in grayscale steel images.

- Used TensorFlow/Keras for model design, OpenCV for preprocessing
- Managed data via Google Drive; achieved strong binary classification performance

React Portfolio Website
Deployed a modern React-based portfolio using Vercel and GitHub CI/CD.

- Showcases personal and AI-based projects
- Mobile responsive and performance optimized

Expenses Tracker App
Developed a full-stack expense tracking app with .NET Core backend and Bootstrap/JS frontend.

- Implemented modular OOP structure and MySQL database integration
- Created a clean, user-friendly UI for personal finance management

Experience

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.

Education

B.Sc. in Mechatronics Systems Engineering

MSA University, Giza, Egypt (2018 – 2024)

Courses & certifications

Embedded Systems Diploma

AMIT, Giza, Egypt (08/2021 – 11/2021)

Languages

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