

ADHAM ELSAYED

Computer Vision Engineer | Edge AI Developer

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SUMMARY

Computer Vision and Edge AI Engineer with hands-on experience building real-time object detection systems, Raspberry Pi deployments, and mobile-connected IoT solutions. Developed a YOLO-based smart retail basket that detects 4 product classes and synchronizes live cart data through Firebase and Flutter. Achieved 96.9% mAP@0.5 and 84.8% mAP@0.5:0.95 on a custom detection dataset, with experience in model training, edge inference, cloud database integration, and mobile dashboard delivery.

EDUCATION

Mansoura University

B.Sc. in Artificial Intelligence Engineering | GPA: 3.13/4.00 | Grade: B+

Sep 2023 – Expected Feb 2027

Dakahlia, Egypt

TECHNICAL SKILLS

AI & Machine Learning: Computer Vision, Object Detection, Face Recognition, Image Processing, Deep Learning, NLP, Transfer Learning, CNNs

Frameworks & Libraries: PyTorch, TensorFlow, Keras, OpenCV, ONNX, Scikit-learn, MLflow, Hugging Face, MindSpore

Programming Languages: Python, C++, C, Dart, Java, MATLAB

Cloud, IoT & Databases: Azure AI, Firebase Realtime Database, REST APIs, Supabase, Raspberry Pi 5, ESP32, Arduino, Microcontrollers, Smart Sensors

Tools & DevOps: MLOps, Git, GitHub, Docker, Linux, VS Code, Google Colab, Kaggle

PROJECTS

Smart Basket – Retail Automation System | YOLO, OpenCV, Raspberry Pi 5, Firebase, Flutter

GitHub

- Engineered a Raspberry Pi 5 smart shopping basket that detects 4 retail product classes in real time using YOLO and OpenCV.
- Achieved 96.9% mAP@0.5 and 84.8% mAP@0.5:0.95 on a custom product detection dataset.
- Integrated 3 system layers: edge inference, Firebase Realtime Database, and Flutter mobile dashboard.
- Delivered an automated checkout workflow covering item name, quantity, unit price, and total bill calculation.

Smart Attendance System | Python, OpenCV, Face Recognition, SQLite

GitHub

- Developed a face-recognition attendance system with 5 core modules: registration, identity matching, timestamp logging, status tracking, and database search.
- Implemented 3 main workflows for student registration, automated attendance recording, and report generation.
- Designed a SQLite database to store student profiles, attendance logs, session history, and administrative records.
- Replaced manual paper-based attendance with a digital workflow that improves record organization and reduces data entry errors.

University Student Assistant Chatbot | Python, NLP, Chatbot, Knowledge Base

GitHub

- Created an NLP-driven chatbot for Mansoura University Engineering students to answer academic and department-related questions.
- Organized 4 knowledge domains: course curriculum, academic resources, frequently asked questions, and faculty guidance paths.
- Improved chatbot maintainability by structuring reusable knowledge records for consistent response retrieval.

EXPERIENCE

Digital Egypt Pioneers Initiative (DEPI)

Sep 2025 – Jul 2026

Machine Learning Engineering Trainee – Microsoft AI & Data Science Track

Egypt – Remote

- Completed a 10-month AI & Data Science scholarship focused on predictive modeling, deep learning, and scalable data solutions.
- Designed end-to-end ML workflows across 5 stages: preprocessing, training, validation, evaluation, and performance analysis.
- Applied 7 AI and data science areas across training projects, including Python, statistics, visualization, NLP, computer vision, transfer learning, and neural networks.
- Practiced 4 AI engineering tools and platforms: Azure AI concepts, MLOps workflows, MLflow, and Hugging Face.

Robotics Software Engineering Trainee | ST Smart

Jul 2025 – Sep 2025

Robotics & AI Training

Mansoura, Egypt – Onsite

- Completed 50+ hours of robotics training covering sensors, motor control, hardware integration, and robot movement logic.
- Programmed C++ control logic for an Arduino-based robot to support movement control, navigation testing, and autonomous response.
- Tested 20+ simulation scenarios for object tracking, surface stability, turning behavior, and real-time robotic decisions.
- Configured 3 hardware components including sensors, motors, and control modules to improve robotic movement reliability.

CERTIFICATIONS

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| • Huawei HCIA-AI V3.5 Course – Artificial Intelligence | 2025 |
| • Robotics Programming (50 Hours) ST Smart | 2025 |
| • Introduction to AI & Applications (50 Hours) Zewail City of Science and Technology | 2025 |
| • Artificial Intelligence Training Program IMPACT | 2024 |