

OMAR SAMEH MAHMOUD

Senior AI & IoT Engineer

✉ syamomarsameh@gmail.com ☎ +20 110 307 3129 📍 El-Zetioun Street, Cairo, Egypt 🛡 Completed

🌐 linkedin.com/in/omarsamehmahmoudsyam 🐙 github.com/OmarSamehMahmoud

🔗 omarsameh-portfolio-yitvc.kinsta.page

PROFESSIONAL SUMMARY

Senior AI & IoT Engineer experienced in AI, computer vision, embedded systems, and IoT solutions, with a focus on system development, optimization, and technical leadership.

PROFESSIONAL EXPERIENCE

Senior AI & IoT Engineer

PhotonX

01/2025 – Present

Cairo, Egypt

- Built AI agents using Agentic RAG and LLMs for R&D automation.
- Architected ESP32-S2 IoT solutions with Azure IoT Hub and MQTT.
- Developed embedded AI voice recognition for smart home devices.
- Developed AI-powered IoT and embedded systems.

AI & IoT Engineer

El-Araby Group

05/2022 – 01/2025

Cairo, Egypt

- Developed secure ESP32-S2 IoT connectivity using Azure IoT Hub and MQTT for smart home applications.
- Optimized embedded firmware, boot processes, and hardware integrations for improved system performance.
- Developed AI-powered computer vision solutions for real-time edge inference and embedded systems.

Embedded Software Developer - Intern

IMT School - CoreTech Innovations

08/2019 – 04/2020

Cairo, Egypt

- Developed an ATM machine project focusing on embedded systems and hardware-software integration.
- Developed smart home appliance solutions with IoT connectivity using Firebase for monitoring and control.

EDUCATION

M.Sc. Electrical Engineering – Computer Systems Engineering

Ain Shams University

09/2025 – Present

GCI Program - AI & Data Science

University of Tokyo, Matsuo-Iwasawa Lab U-Tokyo

09/2026 – Present

DEY Scholarship Program – AI & IoT Track

National Telecommunication Institute (NTI)

08/2021 – 09/2021

- Grade: Excellent
- Capstone: Driver Awareness System – Deep learning-based drowsiness detection with real-time alerting.

B.Sc. Communication and Electronics Engineering

Modern Academy for Engineering & Technology

09/2014 – 07/2019

- Overall Grade: Excellent
- Graduation Project: "Implementing Smart Factory with IoT System" (Excellent)

PROJECTS

Multi-agent Agentic RAG workflow

- Developed an agentic RAG workflow using LLMs to support autonomous R&D and knowledge-based workflows.

AI Voice Recognition

- Developed an embedded AI voice recognition solution for smart home applications.

Edge AI Vision Systems

- Developed real-time computer vision solutions for embedded edge inference.

IoT Gateway

- Developed IoT gateway solutions connecting embedded devices with cloud platforms and IoT services.

TECHNICAL SKILLS

Embedded Systems & MCUs

ESP32-S2/S3, STM32, ATmega32, ARM Cortex-M3/M4, FreeRTOS, Embedded Firmware, Boot Processes, Hardware-Software Integration

IoT & Cloud Platforms

MQTT, Azure IoT Hub, Firebase

Programming Languages

C, C++, Python

Protocols & Standards

UART, I2C, SPI, MQTT, HTTP, Model Context Protocol (MCP)

AI & Machine Learning

Edge AI, Embedded AI, AI Agents, Agentic RAG, LLMs, LLM Fine-tuning, LoRA, Quantization, Computer Vision, YOLOv8, CNN, TinyML, TensorFlow Lite, Vector Databases

Linux & BSP (Supporting)

Dev Tools & Practices

Git, CI/CD, Jira, Confluence, Agile, Technical Documentation, Code Review, n8n Workflow Automation

CERTIFICATIONS

Microsoft Azure AI Essentials – Professional Certificate

2025-10

Cisco IoT Certification – Cisco Networking Academy

2024

Embedded Linux Diploma – IMT School

2020-02

TECHNICAL LEADERSHIP

Founder & Technical Lead — EmAIoT Academy

09/2025 – Present

- Founded and lead an applied technical academy focused on AI, IoT, Embedded Systems, and software engineering.
- Personally teach and mentor learners across AI/ML, IoT, embedded development, and Git/GitHub workflows.

AWARDS AND PROFESSIONAL ACTIVITIES

Judge — VICTORIS 5.0 | IoTPreneur Quest

IEEE Mansoura Student Branch

Attendee, 5G Opportunities and Challenges Workshop 2019

NTI

Attendee, Agentic AI Conference 2026

Data Science Dojo

Innovation Activity Certification

El-Araby Group

Cisco IoT Certification

Cisco Networking Academy

Attendee, IEEE Global Conference on IoT (GCIoT)

Egypt IoT & AI Challenge

LANGUAGE

English

Professional Proficiency (Reading/Listening: Excellent | Speaking: Very Good)

Arabic

Native