Mousa Gaballah
IoT Application Developer

⚲ Cairo, Egypt — 🪪 Military Status: Postponed

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in Mousa Gaballah — ⦿ Mousa Gaballah — 🌐 Portfolio

Summary

Motivated Telecommunications and IoT Engineer with expertise in communication networks, wireless systems, and IoT architectures. Experienced in designing and implementing complex networks of heterogeneous devices, including ESP32 and Arduino nodes, with cloud and fog integration. Skilled in network protocols (MQTT, HTTP, BLE, Wi-Fi), data communication, and applying AI for network optimization. Developed interactive frontend dashboards to unify data visualization across IoT projects, combining embedded systems, network design, and intelligent data processing for scalable and efficient solutions.

Education

B.Sc. in Electronics and Electrical Communications Engineering   Expected July 2026
Faculty of Electronic Engineering, Menoufia University
Current Year: Fourth Year   **GPA: 3.11**

Achievements

Smart Plug Monitor   Aug 2025

- Developed an ESP32 smart plug with MQTT for real-time energy monitoring and remote control.
- Created a web dashboard for live data visualization and relay control.

Smart Agricultural Monitoring System   May 2025

- Built a WSN with ESP32–LoRa nodes to monitor soil moisture, temperature, humidity, and light.
- Developed an MQTT–Node-RED dashboard for real-time monitoring and irrigation alerts.

Short-Range Radar System   Dec 2024

- Developed an Arduino-based radar system to detect object distance and angle.
- Visualized tracking data in real time using Processing.

Web-Based Student Management System   Mar 2024

- Built a full-stack PHP/MySQL web app for managing student records.
- Implemented secure CRUD operations with a responsive interface.

AI Modal Classification Project – MATLAB   Feb 2024

- Built a MATLAB machine-learning model for feature extraction and classification.
- Evaluated model performance with accuracy and cross-validation.

Experiences

Software Development Trainee – React Frontend Web Developer – DEPI   Nov 2025

- Undergoing a full-stack web development training with focus on React and NodeJS, including a capstone project.
- Developed a real-world web application integrating frontend and backend components as part of the training.

IoT Application Development Trainee – SpimeSenseLabs & ITI   Aug 2025

- Completed a 30-hour IoT training covering value chain concepts and practical application development.
- Built IoT solutions on the MasterOfThings platform using Wi-Fi, BLE, and SigFox devices.

IoT Applications Trainee – NTI   Jul 2025

- Trained on end-to-end IoT systems including sensors, microcontrollers, cloud connectivity, and Python programming.

- Completed 120-hour hands-on labs covering fog computing, business use-cases, and full IoT solution development.

Data Analytics Trainee – DEPI Oct 2024 – Feb 2025

- Executed the full data analytics pipeline: extraction, cleaning, modeling, and visualization using Microsoft Power BI and DAX.
- Developed interactive dashboards with automated refresh, integrating Azure services and external data sources.

Summer Intern – Systel Telecom Cairo, Sep 2024

- Gained practical knowledge of telecommunications, microwave communication, and CCTV systems.
- Participated in hands-on workshops on fiber optics and broadband communication.

Skills

- **Embedded Systems:** ESP32, Arduino, PIC16F877A, Servo Motor Control, LCD Interfacing, Sensor-based Systems

- **Protocols:** MQTT, HTTP, BLE, Wi-Fi, LoRa, SigFox

- **Programming Languages:** Embedded C, MikroC, Python, C++, PHP, C#, Java, JavaScript, TypeScript, HTML5, CSS, SQL, NodeJS, Docker, Kubernetes

- **Tools and Platforms:** MATLAB, Simulink, Node-RED, Blynk, ThingsBoard, Processing, Proteus, EasyEDA, Jupyter Notebook, Google Data Studio

- **Data Analytics:** Power BI (DAX, Dashboards), Tableau, Data Cleaning, Statistical Analysis, Data Modeling, Machine Learning Basics

- **PCB Design and Simulation:** EasyEDA, Proteus

- **IoT System Design:** Sensor & Actuator Integration, Microcontroller Interfacing, End-to-End IoT Solutions, Remote & Simulated Labs, Application Development using MasterOfThings Platform

- **Networking & Cloud:** Fog Computing, Cloud Integration, IoT over IP Networks

- **General Skills:** Data Governance, Problem Solving, Teamwork & Leadership, Time Management

Courses & Certifications

- **Internet of Things (IoT) Applications**
  NTI — 2025
- **IoT Value Chain Components**
  Mahara Tech — 2025
- **IoT Application Development using MasterOfThings Platform**
  Mahara Tech — 2025
- **Mobile IoT Applications (Indoor & Outdoor Positioning)**
  Mahara Tech — 2025
- **Developing Custom Events & Plugins on MOT Platform**
  Mahara Tech — 2025
- **Hands-On Training on IoT Devices**
  Mahara Tech — 2025
- **IoT Application Development Summer Training**
  SpimeSenseLabs & ITI — Aug 2025
- **Data Analytics Training**
  DEPI — Feb 2025
- **Digital Design Course**
  ODC — 2025
- **Startup Project Development**
  ITIDA — 2024
- **Computer Network Fundamentals**
  Mahara Tech — 2024
- **Introduction to Network Security**
  Mahara Tech — 2024
- **Telecommunications & Public Safety**
  Mahara Tech — 2024
- **Python Programming Basics**
  Mahara Tech — 2024
- **Summer Internship – Systel Telecom**
  Cairo — Sep 2024

Languages

Arabic: Native **English:** Fluent