

Omar El-Khashab

Embedded Software Engineer

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Embedded and IoT engineer with an electronics background, bridging firmware and the services it talks to. Built telemetry systems end to end, from sensor node to dashboard.

WORK EXPERIENCE

Freelance Software Engineer — Self-employed | 2022 — Present

- Delivered projects across web, mobile, embedded, and automation, owning scope from architecture through deployment.
- Took on unfamiliar domains deliberately, treating system design as the transferable skill rather than any single framework.

PROJECTS

IoT Telemetry Platform — Sole engineer | 2025

End-to-end pipeline carrying sensor readings from ESP32 nodes to a live dashboard.

- Technologies: ESP32, MQTT, NestJS, PostgreSQL, Next.js

Offline-First Mobile App — Mobile and API | 2024 — 2025

Flutter application that stays usable with no connection and reconciles on reconnect.

- Technologies: Flutter, Dart, SQLite, NestJS

Data Extraction Pipeline — Sole engineer | 2024

Scraping and normalisation system for sources that actively resist automation.

- Technologies: Python, Playwright, PostgreSQL

Desktop Inventory Tool — Sole engineer | 2023

Cross-platform desktop client for stock control on machines with no internet access.

- Technologies: Electron, TypeScript, SQLite

SKILLS

Languages	TypeScript, Dart, C/C++, Python, SQL
Backend	NestJS, Node.js, REST, WebSockets, Queues
Frontend	Next.js, React, Vue, Tailwind CSS
Mobile	Flutter
Desktop	Electron
Embedded	ESP32, Arduino, Sensors, Electronics
Protocols	MQTT, HTTP, Serial, BLE
Databases	PostgreSQL, Redis, SQLite
Infrastructure	Docker, CI/CD, Linux
Tools	Git, Playwright, Figma

EDUCATION

B.Sc. Software Engineering — New Cairo Technological University | Graduated 2025

New Cairo, Egypt

CERTIFICATIONS

Google Data Analytics Professional Certificate — Google | Aug 2024

Back-End Developer Professional Certificate — Meta | Feb 2024

LANGUAGES

Arabic	Native
English	Professional working proficiency

LEADERSHIP AND VOLUNTEERING

Lead, Google Developer Groups on Campus — New Cairo Technological University | 2024 — 2025

- Ran the campus chapter: organised technical sessions, coordinated a volunteer team, and grew participation.

AWARDS AND HONORS

National Scientific Research Award

Ideal Student Award — New Cairo Technological University