

Abd Elrahman Hossam

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SUMMARY

Flutter & Kotlin Multiplatform developer with hands-on experience shipping production-grade mobile apps integrating IoT sensors, real-time data streams, and REST APIs. Skilled in Clean Architecture, Cubit/Bloc state management, and cross-platform development. Completing a BSc in Computer and Data Science at Alexandria University (Jul 2026), with a graduation project combining embedded systems (ESP32, MQTT) with a Flutter mobile app and a deployed ML inference backend for real-time infant health monitoring.

EDUCATION

BSc in Computer and Data Science

Expected: July 2026

Alexandria University | Alexandria, Egypt | CGPA: 3.41 / 4.0

EXPERIENCE

Flutter Developer

Nov 2025 – Jan 2026

Wego Station | Alexandria, Egypt

- Developed and maintained scalable Flutter features within a production codebase, participating in full sprint cycles from planning to release.
- Collaborated with cross-functional teams (design, backend) to implement new screens and resolve live bugs, reducing reported crash rate during tenure.
- Conducted code reviews and enforced clean architecture standards, improving team code consistency and test coverage.

PROJECTS

Carely – Smart Infant Monitoring System

Sep 2025 – Present

Graduation Project · Flutter · Dart · FastAPI · Python · Keras · Docker · ESP32 · MQTT · Clean Architecture · Cubit

Full-stack mobile-IoT ecosystem combining a Flutter app with an ESP32 wearable and a cloud-deployed ML backend to monitor infant health in real time.

- Built a real-time Flutter dashboard streaming live heart rate (MAX30102), SpO2, and motion (MPU6050) sensor data via MQTT over Wi-Fi with sub-second latency.
- Designed, trained, and deployed a FastAPI + Keras cry detection model as a Dockerized REST API ([GitHub: cry-detection-model-api](#)), integrated with the mobile app via HTTP.
- Implemented Clean Architecture with Cubit state management, keeping UI responsive while processing continuous IoT sensor payloads alongside ML alert events.
- Designed Material 3 UI with animated health indicators for pediatric clinical review context.

ClassFlow – KMP Task Management App

2025

Kotlin Multiplatform · Compose Multiplatform · Ktor · WebSockets · Role-based Auth

Cross-platform task and homework management app for educational institutions, supporting three distinct user roles.

- Engineered a role-based permission system (Admin, Teacher, Student) with scoped data access and custom navigation flows per role.
- Implemented real-time admin-teacher chat using WebSockets (Ktor) and file attachment support for homework submissions.
- Built a rich-text editor for content creation and a deadline-aware notification system with local reminders.

HireTrack – Job Search App [GitHub](#)

2024

Native Android · Kotlin · Room · WorkManager · Notifications

Native Android app helping job seekers track applications, set follow-up reminders, and bookmark opportunities.

- Implemented advanced job search with filters (contract type, salary range) and offline bookmark persistence via Room database.
- Built an application status tracker (Applied → Interviewed → Offered) with WorkManager-powered deadline reminders and local notifications.

EyeFocus – Smart Attention Tracker

2026

Flutter · Dart · Firebase · Python · Eye-tracking · Client Project

Flutter-based desktop application built for a client on Mostaqel, enabling researchers to track and analyze children's visual attention patterns for academic study.

- Built a multi-screen Flutter dashboard displaying session data, age distribution charts, and attention issue statistics derived from eye-tracking input.
- Integrated Firebase as the backend, structuring children profiles and session records with real-time sync across researcher devices.
- Implemented CSV data export for research reporting and an age-range dropdown for filtering participant cohorts.

Briefly – News App [GitHub](#)

2025

Flutter · Dart · REST API · Responsive UI

- Developed a responsive news reader with multi-category browsing, instant keyword search, and a dedicated article reading view consuming a third-party news API.

TRAINING

Digital Egypt Pioneers Initiative (DEPI) — Mobile App Development Track

Oct 2024 – May 2025

IoT Development Training — ESP32 & MQTT Systems

Jul 2024 – Sep 2024

Designed and implemented IoT systems using ESP32 and MQTT. Built real-time data visualization with Flutter.

SKILLS

Languages & Frameworks: Flutter, Dart, Kotlin, Python, Java, C/C++, HTML, CSS, JavaScript

Mobile & Cross-platform: Android (Native), Kotlin Multiplatform (KMP/CMP), Flutter

Architecture & Patterns: Clean Architecture, Cubit / Bloc, MVVM, Repository Pattern

Backend & APIs: REST APIs, FastAPI, WebSockets (Ktor), MQTT, Firebase, Supabase

Data & Storage: Room, SQLite, SQLDelight, SharedPreferences

DevOps & Tools: Docker, Git, GitHub, GitHub Actions, Android Studio, VS Code, Agile/Scrum

IoT & Embedded: ESP32, MQTT protocol, MAX30102, MPU6050 sensor integration

EXTRACURRICULAR & VOLUNTEER

Java Instructor — Semicolon Project

Aug 2024 – Mar 2025

Taught Java and OOP fundamentals to junior students through an offline course, culminating in a guided GUI project.

Technical Member (Robotics) — IEEE AlexSC

Feb 2025 – Jul 2025

Contributed to multiple robotics projects as part of the technical team during the competition season.

HR Member — Enactus Alex

Oct 2024 – Jun 2025

M&M member — Safwa FCDS, Alexandria

Feb 2024 – Jul 2024