

Hassan Diab

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Software Engineer

Experience

Software Engineering Intern

July 2025 - August 2025

CME offshore – Beirut, Lebanon

- Built a full-stack **Pet Shelter Management System** (Java Spring Boot, React + TypeScript) serving end-to-end adoption workflows, reducing manual processing steps by automating approval pipelines using **Camunda BPMN**
- Designed and managed hybrid database architecture using **PostgreSQL** for relational data and **MongoDB** for document storage, optimizing query performance across both layers
- Secured the application using **Keycloak** for identity and access management with **JWT-based authentication**.
- Integrated **Stripe** payment workflows for donation and adoption fee processing
- Designed **REST APIs** with clean DTO mapping patterns; built responsive UI with **MUI**

Software Engineering Intern

November 2025 - January 2026

Markaba – Saudi Arabia (Remote)

- Built and optimized scalable **data scraping pipelines** extracting structured and unstructured web data across multiple sources, improving pipeline reliability through error handling and retry logic to support backend services and product feature development.

Web/Odoo Development Intern

June 2024 - August 2024

Tomorrow Services – Beirut, Lebanon

- Implemented and customized **Odoo ERP** modules to digitize and automate internal business processes including inventory, invoicing, and workflow management, reducing reliance on manual operations

Education

BS in Computer Science & Minor in Data Analytics

Lebanese American University (LAU)

- MEPI Tomorrow's Leaders Gender Scholar 2023/2024.
- Dean's Honor List of the School of Arts and Sciences in all completed semesters.

Major Projects

- **Government Internal Directory System (Ongoing Project):** Collaborating with **Lebanon's Ministry of Interior and Municipalities** to build a secure internal directory platform. Stack: React, React Native, Django REST. Features include RBAC, **Camunda**-based BPMN workflows, **OCR**-driven document digitization (**Redis**, **Celery**), and full-text search via **Elasticsearch** — deployed for government-scale internal use.
- **A Benchmarking Framework for Accuracy-Energy Trade-offs in ML (Published – IMCET 2026)** Benchmarked accuracy vs. energy efficiency across multiple classifiers and datasets, reporting carbon-equivalent emissions alongside performance metrics — contributing to the Green AI research space.
- **Civil Defense App (React + Django):** Built an **incident reporting tool** (React + Django) for Lebanon's Civil Defense enabling real-time field reporting with geotagged submissions, reducing reliance on manual coordination.

Skills & Languages

- **Languages & Frameworks:** Java (Spring Boot), Python, JavaScript/TypeScript, React, React Native, Django
- **Infrastructure & Tools:** PostgreSQL, MongoDB, Elasticsearch, Redis, Celery, Git, Linux, Camunda/BPMN, Keycloak, Stripe, Odoo, REST APIs, RBAC, OCR, Data Scraping, ERP Systems
- **Languages:** Arabic (Native), English (Fluent), French (Basic).