

Hassan Bazzoun

Software Engineer

📍 Lebanon

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🌐 github.com/xcodeBn

Education

Master of Science in Computer Science

Mar. 2022 – Jul. 2025

Lebanese International University, Beirut, Lebanon

Thesis: Environmentally Aware Dynamic Clustering Algorithm (EADC)

GPA: 3.5/4.0

Bachelor of Science in Computer Science

Sep. 2017 – May. 2021

Lebanese International University, Tyre, Lebanon

Professional Experience

Android Engineer Intern — FOO.mobi

Jun. 2025 – Sep. 2025, Beirut, Lebanon

- Contributed to an existing Android production codebase by debugging and modernizing legacy modules, resolving compatibility issues, and improving code structure to align with modern Android and Kotlin best practices.
- Implemented user-facing screens and reusable UI components by translating Figma designs into Jetpack Compose, including animations and interaction flows based on product requirements.
- Designed and built an internal Kotlin Multiplatform library that served as a shared abstraction layer over company backend APIs, enabling consistent and reusable data access across mobile platforms.
- Mentored fellow interns by assisting with Kotlin and Android concepts, reviewing code, and unblocking development issues, contributing to smoother collaboration and overall team velocity.

Freelance Software Engineer

2023 – current, Lebanon

- Developed full-stack applications for clients, delivering backend services with Spring Boot and modern frontend solutions.
- Designed and implemented RESTful APIs, database schemas, and authentication flows for production-ready systems.
- Built native Android applications tailored to client requirements, focusing on performance and maintainability.
- Refactored and modernized existing codebases using clean architecture and modern design patterns.

Selected Projects

Human Line – HR Management System

Feb. 2026 – Mar. 2026

- Architected and developed a multi-tenant HR SaaS platform enabling organizations to manage employee lifecycle, internal operations, and company policies with strict data isolation and fine-grained role-based access control (RBAC).
- Designed and implemented scalable backend services using **NestJS**, including authentication, authorization guards, audit logging, payment integration, and notification/email services.
- Built a flexible multi-tenant data model using **PostgreSQL** and **Prisma ORM**, supporting organization-level and employee-level data segregation with efficient querying and transactional integrity.
- Developed a custom **RAG-based system** to retrieve organization-specific documents and policies, enabling contextual access to internal knowledge.
- Delivered end-to-end HR features including employee management, onboarding workflows, attendance tracking, scheduling, leave management, and recruitment pipelines.
- Built a responsive and type-safe frontend using **Next.js**, structured within a **Turborepo monorepo**, leveraging shared **Zod contracts** for end-to-end validation.
- Containerized and deployed services using **Docker**, integrating **MinIO** for secure document and media storage.
- Collaborated on UI/UX design using **Figma** to translate product requirements into intuitive user experiences.
- github: https://github.com/xcodeBn/HumanLine_HR-Management-System

Environmentally Aware Dynamic Clustering Algorithm (EADC) — Thesis WSN Research

Feb. 2025 – Jul. 2025

- Designed a novel clustering algorithm for wireless sensor networks that incorporates real-time environmental conditions into cluster head selection.
- Developed a multi-criteria fitness function combining environmental stability, residual energy, and distance to the base station.
- Simulated localized environmental events to evaluate system behavior under adverse conditions.
- Benchmarked the algorithm against the LEACH protocol, achieving extended network lifetime, delayed first node death, improved node survival in critical zones, and higher data throughput.

Patient Management System — Java/Spring Boot Microservices

Sep. 2025 – Dec. 2025

- Built distributed microservices handling patient records, billing, analytics, and notifications.
- Implemented inter-service communication using both REST and gRPC.
- Used Kafka for asynchronous event streaming and Redis for caching and performance optimization.
- Containerized services with Docker and simulated cloud infrastructure using LocalStack.
- Designed APIs with OpenAPI/Swagger and wrote automated tests using JUnit.
- Check it on GitHub: github.com/xcodeBn/patient-management-system

Technical Skills

Languages: Java, Kotlin, TypeScript, JavaScript, Python, C++, PHP, C#

Mobile & Frontend: Native Android Development with java/kotlin/jetpack compose, Kotlin/Compose Multiplatform, ReactJs, Next.js, TailwindCss

Backend: Spring Boot, Spring MVC, Spring Data JPA, Hibernate, Node.js, NestJS, REST apis, gRPC, WebSockets, Event-Driven Architecture

Infra/Data: Docker, Git, GitLab CI/CD, Kafka, Redis, PostgreSQL, MongoDB, Firebase, GCP

Testing & Security: JUnit, Mockito, MockK, OWASP Top 10, Burp Suite, OWASP ZAP

Continuous Learning

OnRamp Academy by ForwardMena – Modern Full Stack Development with AI Tools

Dec. 2025 – Mar. 2026

- Took part in an intensive full-stack program focused on modern software development best practices across backend, frontend, databases, security, DevOps, and Agile delivery.
- Designed scalable backend systems using **NestJS**, applying modular architecture, dependency injection, and secure authentication/authorization patterns.
- Strengthened database design skills including schema modeling, SQL optimization, transactions, data integrity, and security practices.
- Built performant web applications using **Next.js (React)**, focusing on rendering strategies, state management, caching, and performance optimization.
- Applied secure development principles, collaborative Git workflows, peer reviews, and Agile Scrum methodologies.
- **Capstone Project: Human Line – Multi-tenant HR SaaS Application**

Certifications

• Certified Ethical Hacker (CEH)	LinkedIn Learning
• CCNA R&S: Scaling Networks	Cisco Networking Academy
• CCNA R&S: Routing and Switching Essentials	Cisco Networking Academy
• CCNA R&S: Introduction to Networks	Cisco Networking Academy
• Cloud Security Concepts: Services and Compliance	LinkedIn Learning
• Cloud Storage Concepts: Services, Cost Control, and Security	LinkedIn Learning
• Google Cloud Foundations	LinkedIn Learning
• Azure: Understanding the Big Picture	LinkedIn Learning
• Vector Databases in Practice: Deep Dive	LinkedIn Learning
• OnRamp Modern Full Stack Development with AI Tools	Forward Mena

Languages

Arabic: Native

English: Fluent