

Yassine Belhoula

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Education

National Institute of Applied Science and Technology, Instrumentation and Industrial Maintenance Engineer

Sept 2020 – Sept 2025

- **Coursework:** Low-Level Programming (C/C++), Artificial Intelligence and Intelligent Systems, Computer Architecture, Automation and Control Systems, Advanced Mathematics for Engineering, Instrumentation and Measurement Systems, Industrial Maintenance and Reliability, Electronics and Electrotechnics, Mechanical Systems and Thermodynamics, Quality and Process Control, Safety and Technological Monitoring

Experience

Software Engineer, Kaoun – Tunis, Tunisia

Dec 2021 – Today

- Self-hosted a **language model** on dedicated servers and a rented **DGX supercomputer** to enable low-latency inference and data sovereignty.
- Designed and implemented a **PII obfuscation module** leveraging the self-hosted model to anonymize sensitive data for compliance and secure processing.
- Built an **AI-powered customer support system** integrating **LangChain**, **LangGraph**, and **LLMs** within a **WebSocket**-based architecture for real-time, context-aware interactions.
- Developed the **chat interface** for the support system, enabling real-time two-way messaging with seamless UX and integrated AI responses.
- Created and maintained multiple **APIs** and **Django services** to support message routing, AI orchestration, and middleware logic across mobile and web platforms.
- Engineered a **Proof-of-Life system** leveraging **WebRTC** for live video streaming, **facial recognition**, and liveness detection for secure user verification.
- Built and maintained a **Soft POS** application supporting both wallet and card payments, ensuring PCI and store compliance.
- Worked the design and development of multiple fintech products from scratch, including **Tunicheque** and **Neobte**, delivered as cross-platform mobile and web apps.
- Worked as **Squad Lead** for the **Banking Squad**, driving organizational accountability by facilitating cross-team communication, ensuring full documentation and transparency of deliverables, and aligning outcomes with quarterly **KPIs** — while simultaneously contributing as a hands-on **Engineer** developing core banking features.
- Consolidated all mobile and web projects into a unified **monorepo** to accelerate development through shared codebases and a common design system.
- Managed end-to-end production stability—upgrading stacks, ensuring compliance and coordinating releases across multiple environments.

Software Engineer, Omnimenu – New York, United States – Remote

Oct 2021 – Dec 2021

- Led the **end-to-end design and development** of major features in a **React Native** application, ensuring high performance, scalability, and seamless responsiveness across devices.
- Managed the complete **deployment lifecycle** — from CI/CD build configuration to **App Store** submission, review, and updates — achieving fast, stable release cycles.
- Served as the **primary liaison** with the founder, aligning product vision with technical execution and coordinating cross-functional efforts between frontend, backend, and design teams.
- Directed and mentored a team of **freelance developers** to deliver the company's first **production-ready release** under tight deadlines, balancing speed and product quality.

Software Engineer Intern, Kaoun – Tunis, Tunisia

Jul 2021 – Sep 2021

- Refactored and optimized legacy React Native codebase to enhance UI responsiveness and cross-device performance across Android and iOS platforms.
- Migrated **class components** to modern **functional components** using **React Hooks**, improving maintainability

and reducing render overhead.

- Implemented and maintained **Redux reducers** and **TypeScript**-based async actions for robust API state management and predictable data flow.

Projects

Flouci Assistant

- Built an **AI-powered customer support system** integrating **LangChain**, **LangGraph**, and **LLMs** through a **self-hosted model pipeline** on a rented **DGX supercomputer**, featuring a **Django middleware** for real-time **WebSocket** messaging, a **PII obfuscation module** for compliance, and a seamless **React Native** chat interface. Creating an AI layer to be corner for future AI work, making the chat a second way the user interacts with the app
- **Tools Used:** Python, Django, React Native, LangChain, LangGraph, WebSocket, Docker, PostgreSQL, DGX, LLMs , RTKquery , React native

Soft POS

- Built a **Soft POS application** supporting both **wallet** and **card payments**, integrating secure **NFC transaction processing**, dynamic QR generation, and compliance with **PCI DSS** and store policies.
- **Tools Used:** React Native, Node.js, TypeScript, NFC APIs, REST, Firebase

Proof of Life (POL)

- Built a **Proof-of-Life verification system** leveraging **WebRTC** for live video streaming, **facial recognition**, and liveness detection, ensuring secure user authentication across fintech services. Designed and deployed the module both as an internal component within Kaoun's ecosystem and as an **external commercial product** offered to partner banks as a new revenue source.
- **Tools Used:** React Router, React Native , Python, Django, Janus, WebRTC, TensorFlow, REST APIs

Neobte & Tunicheque

- Developed and maintained **Neobte** and **Tunicheque**, two end-to-end **fintech platforms** with both **web** and **mobile** applications built within a shared **monorepo** to ensure unified architecture, code reusability, and rapid development. Implemented **Redux Toolkit Query (RTK Query)** for efficient API management, **Server-Side Rendering (SSR)** for performance, and enforced continuous maintainability in a fast-paced release cycle.
- **Tools Used:** React Native, Next.js, TypeScript, Redux Toolkit, RTK Query, SSR, Docker, Firebase, GitHub Actions

Insat.rnu.tn

- Designed and developed the new **official university website** for INSAT, replacing the outdated legacy platform. Built with **Next.js** and **Django**, featuring a dynamic **admin dashboard** that enables administrators to easily add sections, publish blog posts, and manage site content in real time. Successfully deployed and maintained the system, which remains in use as the university's primary website.
- **Tools Used:** Next.js, Django, TypeScript, PostgreSQL, REST APIs, Docker, Nginx, GitHub Actions

Technologies

Languages: Python, TypeScript, JavaScript, SQL

Frameworks & Libraries: React Native, Next.js, Django, Node.js, Redux Toolkit, RTK Query, LangChain, LangGraph, TensorFlow

Technologies: WebSocket, REST APIs, Docker, Firebase, PostgreSQL, WebRTC, VLLM, DGX, LLMs

Tools & Platforms: Git, Linux, Android Studio, Xcode, VS Code, Postman, Figma, Jira, App Store / Play Store Deployment