

Houssem Sahnoun

Software Engineer / Full-Stack & AI Backend Developer

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Education

INSAT (National Institute of Applied Sciences and Technology)

Sept. 2021 – Sept. 2026

Software Engineering Degree

Tunis, Tunisia

- **Relevant coursework:** Algorithms, System Design, Distributed Systems, Big Data, Machine Learning, Deep Learning, Databases.

Professional Experience

Reality Sports (Tunisia)

Sept. 2025 – Present

Junior Software Engineer (Full-Time)

Aug. 2026 – Present

- Continued development and integration of the AI matchmaking application with Spring Boot platform services.
- Delivered backend feature enhancements supporting match workflows and the sports booking platform.

Software Engineering Intern – Final-Year Project

Feb. 2026 – July 2026

- Designed an AI-powered matchmaking system that converts multilingual community conversations into structured match creation and participation workflows.
- Built a multilingual dataset and benchmarked 20 language models for intent classification and entity extraction, improving classification accuracy by approximately 24 percentage points with conversational context.
- Developed Spring Boot matchmaking services for match lifecycle, concurrency and transactional booking conversion; integrated a standalone Python/Gemini AI app over AWS SNS/SQS and REST APIs, with JUnit and Testcontainers testing.

Part-Time Software Developer

Sept. 2025 – Jan. 2026

- Enhanced match creation, participation, invitations, team assignments, capacity rules and online/cash payment workflows, including refunds, verification and recovery from delayed payments.
- Contributed to tournament registration, draws, scheduling and score tracking; **built Americano tournaments from scratch** with player rotation, automated rounds, multi-court scheduling and dynamic rankings.
- **Architected an event-driven notification system from scratch** using AWS SNS/SQS and Firebase Cloud Messaging, supporting asynchronous push delivery, persistent history and user notification management.
- Improved booking reliability through automated cancellation, payment recovery, API improvements and database optimizations.

MAZ-DEV (Remote / Tunisia)

Oct. 2024 – Aug. 2025

AI & Backend Developer Intern (Full-Time)

June 2025 – Aug. 2025

- Designed an AI agent orchestration system for *Suits You*, a LegalTech platform, separating LLM-powered planning from deterministic execution across backend microservices.
- Implemented SSE progress tracking, user clarification flows and automated tests using Python, FastAPI, PostgreSQL, SQLAlchemy and OpenAI GPT-4.

Part-Time Full-Stack Developer

Oct. 2024 – May 2025

- Built the HR platform's Action Board with Kanban workflows, task/status management, filters, notifications and feedback conversion using React/Next.js, TypeScript and NestJS.
- Developed Complaints with anonymous submissions, voting, HR decisions/responses, ratings and KPI dashboards; built Moments with social feeds, events, reactions, leaderboards and onboarding.
- Contributed to survey analytics, marketplace features and feedback integrations in an agile, cross-functional team.

CED Tunisia

July 2024 – Aug. 2024

Web Development Intern

Tunisia

- Engineered a questionnaire versioning system to preserve history, optimize storage and maintain data integrity.
- Developed a web-based PDF signing, previewing and annotation solution using .NET, Angular and SQL Server.

Projects

Bloggy | AI-Based News Blog Generator from Multimedia Streams

Hadoop | Kafka | Spark | Llama

- Built a batch/stream multimedia news pipeline using FFmpeg, Whisper and Delta Lake; fine-tuned LLMs for blog generation and semantic retrieval.

TuniConnect | Real-Time Carpooling App

Symfony | React | WebSocket

- Created a carpooling marketplace with social interactions, authenticated users and real-time chat using WebSocket and Ratchet.

TeamFlow.io | Task Management Application

NestJS | React | GraphQL | SSE

- Developed a collaborative workspace and task platform with real-time chat, SSE notifications, GraphQL and Nx Monorepo.

Technical Skills

Languages: Java, Python, TypeScript, JavaScript, SQL

Backend & APIs: Spring Boot, NestJS, FastAPI, Symfony, .NET, GraphQL, REST APIs, SQLAlchemy

Frontend: React, Next.js, Angular, React Query, Tailwind CSS, Material UI, HTML, CSS

AI & Data: Gemini, GPT-4, TensorFlow, Scikit-learn, Pandas, NumPy, PostgreSQL, MongoDB, SQL Server

Cloud & Tools: AWS SNS/SQS, Firebase Cloud Messaging, Docker, Kubernetes, Git, GitHub Actions, CI/CD, JUnit, Testcontainers, SSE, WebSocket