BOUAROUR Ayoub

Software Engineer | AI Agent Engineer



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codeonym
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portfolio

Profile

AI Agent Engineer focused on designing and shipping production-grade multi-agent systems — from LLM-driven workflows to autonomous agents grounded in enterprise data via MCP, and delivered to end users through CopilotKit/AG-UI.
What draws me to this field is that it's still frontier work: there's no well-trodden path to follow, so every experiment — and every failure — genuinely moves the discipline forward. Traditional software engineering optimizes for reliability and predictability along known paths; agent engineering is exciting precisely because it asks you to build the paradigm, not just implement it.
I don't treat agents as static CRUD software — I build them as systems meant to evolve: gaining capability, sharpening reasoning, and getting measurably better with every iteration, closer to leveling up a character than shipping a fixed feature. That mindset shapes how I approach context engineering, evaluation, and observability in everything I build.

Professional Experience

09/2025 – Present
Oujda, Morocco

Software Engineer
OpenSNZ-Technology

- Lead AiCA, the multi-agent pharmaceutical catalog platform I started as an intern, now in production.
- Design, build, and maintain production agentic AI systems end-to-end — from rapid prototyping to deployment — covering complex multi-agent architectures, LLM-driven workflows, and agent-to-enterprise integrations.
- Architect agent systems around Domain-Driven Design, CQRS, and Event-Driven Architecture, using RabbitMQ and Celery as the async messaging/task backbone, containerized with Docker/Docker Compose and fronted by Traefik and Authentik.
- Ground agents in document-heavy enterprise data using LandingAI and Amazon Textract for extraction, then expose them to end users through CopilotKit / AG-UI for seamless human-in-the-loop interaction.
- Apply context engineering and prompt engineering practices to improve agent reasoning, reliability, and output quality across use cases.
- Use LangChain / LangGraph for orchestration and LangSmith for tracing, evaluation, and observability of agent behavior in production.
- Mentor and supervise interns on the agent engineering stack — architecture decisions, LangGraph/MCP patterns, and evaluation practices.

02/2025 – 08/2025
Oujda, Morocco

PFE Internship | AI Agent Developer
OpenSNZ-Technology

- Started AiCA, a multi-agent system for intelligent pharmaceutical catalog analysis, automating extraction of structured data from unstructured raw files at scale.
- Designed and coordinated specialized agents for querying, cost aggregation, reporting, and decision support, backed by a knowledge graph for grounded retrieval.
- Architected the system to be modular, scalable, and maintainable, applying agent-based design patterns rather than a monolithic pipeline.

Stack: LangChain / LangGraph, LangSmith, Python, FastAPI, Next.js, MCP, CopilotKit (AG-UI), RAG, prompt & context engineering.

Technical Skills

AI Agent Stack
LangChain, LangGraph, LangSmith (observability & eval), Model Context Protocol (MCP), CopilotKit, AG-UI, RAG pipelines

Software Architecture
Domain-Driven Design (DDD), CQRS, Event-Driven Architecture (EDA)

Web / Backend
FastAPI, Next.js, React, Redux Toolkit, Zustand, Context API, Zod, tRPC

Document AI
LandingAI, Amazon Textract

DevOps & Observability
Git/GitHub/GitLab, GitHub Actions, CI/CD, Jira, Prometheus, Grafana, Jaeger, OpenTelemetry

AI Architecture & Principles
Multi-Agent Systems (MAS), Context Engineering, Prompt Engineering, Agentic Workflows, SKILLS.md

Languages
Python, TypeScript, JavaScript, Java

Backend & Infra
RabbitMQ, Celery, Docker / Docker Compose, Traefik, Authentik

Data
Neo4j, PostgreSQL, MySQL, Redis, MongoDB

OS
Linux / Unix

Education

2023 – 2025 | Oujda, Morocco
Specialized Master in Computer Science Engineering
Faculty of Science (*FSO*)

2019 – 2023 | Oujda, Morocco
Bachelor's Degree in Mathematics and Computer Sciences
Faculty of Sciences (*FSO*)

2019 – 2019 | El Aioun Sidi Mellouk, Morocco
Scientific Baccalaureate (Physical Sciences)
Essaadiyine Qualifying High School

Personal Projects

09/2026 – Present
gsm-agent-kit
A modular GSM agent toolkit with capability-based modem integrations

10/2026 – Present
i18n-ai
Generate a website's locales from its source locale tree, with LLM agents that keep every placeholder intact — any LangChain provider, installed on demand.

08/2026 – Present
Mediary
Typed, decorator-driven mediator + CQRS for Python — handlers, pipelines and notifications discovered by package scan

09/2026 – Present
acli-py
A friendly Jira Cloud command line: a Python port of Atlassian's acli

07/2026 – Present
GroundWork
Plan work before building it: grill an idea into epics, stories and tickets, keep every decision, and build each ticket with your approval at every step. A Claude Code plugin

11/2026 – Present
flow-reel
Turns an E2E script into a narrated, captioned demo video: deterministic, in a container, with a local voice. Published on npm

Academic Projects

ARAPT
Arabic Part-of-Speech tagging system using a BiLSTM deep neural network (Keras/Python), served via FastAPI with a Next.js front end

Mandoc-OCR
CNN-based OCR system (Keras/Python) for recognizing Arabic handwriting

Brikool
Full-stack marketplace connecting local freelancers with customers. Next.js, TypeScript, Spring Boot, PostgreSQL, Docker, CI/CD

UNI-Lab
Centralized platform for managing faculty labs, equipment, and resource allocation. Next.js, Spring Boot, MySQL

Soft Skills

- Future-Focused Vision
- Team Collaboration
- Adaptability
- Analytical Thinking
- Active Listening

Languages

- English
- French
- Arabic

Interests

- contributing to open source
- CTF Challenges
- Podcasts
- Continuous Learning
- Webinars
- Video Gaming