MUSTAPHA EL HACHMI MAHTI

AI ENGINEER & AGENTIC SYSTEMS ARCHITECT

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PRESENTATION

AI Engineer specialized in developing agentic systems and advanced RAG architectures. Expert in LangChain, LangGraph, and Graph RAG, I design autonomous agents capable of reasoning, planning, and interacting with complex knowledge bases. I transform LLMs into scalable production systems with knowledge graphs (Neo4j), vector databases (Pinecone, pgvector), and multi-agent orchestration to create high-impact AI solutions.

PROFESSIONAL EXPERIENCE

Full Stack Developer, Groupe Actual, Toulouse   **September 2022 — September 2025**

- **Web Development** : Design and development of complex React/TypeScript applications (50,000+ users) with optimized user interfaces and sophisticated state management
- **Mobile Applications** : Cross-platform iOS/Android development with React Native/Expo (250,000+ downloads)
- **Backend Architecture** : Design of NestJS microservices with RESTful APIs, PostgreSQL/MongoDB databases
- **Performance & Scalability** : Optimization of web and mobile performance (+30% speed improvement), implementation of caching solutions and real-time monitoring
- **Data Engineering** : BigQuery development for business analytics and development of high-availability data pipelines

Stack: React, TypeScript, React Native, NestJS (NodeJS), MySQL, Redis, GCP

Full Stack Developer, Groupe Bizness, Toulouse   **January 2022 — August 2022**

- **Microservices Architecture** : Development of event-driven architecture with multi-source aggregation APIs
- **RAG System for FAQ** : RAG implementation with Pinecone vector database for intelligent FAQ feature with embeddings and semantic search
- **Real-Time Applications** : Implementation of WebSockets and Server-Sent Events for collaborative interfaces
- **Database and API** : Development of APIs with SAP HANA database

Full Stack Developer, Société JUMP, Toulouse   **May 2021 — July 2021**

- **Test Automation** : E2E with Cypress, WebDriver, Cucumber JS and Gherkin syntax
- **Custom Slack Commands Development** : with Bolt JS and NestJS
- **Web Tools Creation** : automated to improve team productivity

Archeon - AI Knowledge Management Platform (Founder & Lead Developer)   **June 2024 — Present**

Full-stack document management platform powered by Graph RAG and agentic systems.

- **Graph RAG & Knowledge Graphs** : Graph RAG architecture with Neo4j and Graphiti for entity extraction, relationship mapping, and knowledge graph generation from documents
- **AI Agents & LLM Orchestration** : Implementation of autonomous agents with LangChain/LangGraph for intelligent Q&A, automatic classification, and multi-modal semantic search
- **AI Microservices Architecture** : Distributed NestJS + FastAPI stack with Celery workers for asynchronous processing (OCR, embeddings, graph building), PostgreSQL+pgvector for vector search
- **Multi-Platform Applications** : NextJS (React) interface and React Native/Expo mobile app with JWT authentication, Redis rate limiting, and Cloudflare R2 storage

Stack: LangChain, LangGraph, Neo4j, FastAPI, NestJS, PostgreSQL+pgvector, Celery, Redis, React (NextJS), React Native

SKILLS

• **AI & Agentic Systems :** LangChain, LangGraph, RAG, Graph RAG, LLM (GPT-4, Claude), Autonomous Agents, Prompt Engineering, Transformers

• **Vector & Knowledge Databases :** Neo4j, Graphiti, Pinecone, pgvector, Elasticsearch, Embeddings, Semantic Search

• **Backend & Microservices :** FastAPI, NestJS, NodeJS, PostgreSQL, MongoDB, Redis, Celery, RabbitMQ, RESTful APIs

• **Full-Stack Development :** TypeScript, Python, React, NextJS, React Native, Docker, Kubernetes, CI/CD

EDUCATION

• **Master Software Architect** | EPITECH Computer Science School, Toulouse (2023 — 2025)
• **Bachelor DevOps Application Developer & Designer** | EPSI, Toulouse (2022 — 2023) *With distinction from the jury*
• **Associate Web and Mobile Web Developer** | SIMPLON, Toulouse (2021 — 2022)
• **High School Diploma Science and Technology** | IES Salvador Espriu, Girona, Spain (2018 — 2019)

LANGUAGES

Languages: **Italian** (conversational), **English** (fluent), **French** (native), **Arabic** (native), **Catalan** (native), **Spanish** (native)