

Chaima Attafi



chayma.attafi@esprit.tn



+216-55-24-58-64



LinkedIn



Website



GitHub

PROFILE

AI Engineer specializing in Agentic AI and innovative technologies, with hands-on experience in **LLMs**, **NLP pipelines**, and **AI agent architectures**. Passionate about applying responsible AI practices to foster ethical, collaborative and research and driven solutions.

PROFESSIONAL EXPERIENCE

TALAN, Junior AI Consulting

Implementation of an intelligent code modernization framework automating the migration of legacy COBOL systems, with integrated code understanding, visualization, and knowledge graph reasoning and reducing manual migration.

October 2025
– Present

- **Business logic extraction and Knowledge Graph Visualization:** parser to decompose COBOL code into logical sections and designed an interactive system specification and dependency knowledge graph. Enabled engineers to explore code relationships, inter-module dependencies, and business logic flow.
- **GraphRAG Chat Assistant:** Integrated a **GraphRAG-based conversational agent** allowing users to query the knowledge graph in natural language and retrieve insights about the COBOL system's structure and migration status.
- **Multi-Agent Migration Pipeline:** Migrate CBP, CPY, JCL and BMS to a modern full-stack system using Spring Boot and Angular. Built an AI multi-agent pipeline to analyze dependencies, convert business logic and scaffold projects.
- **Technologies:** Semantic Kernel, Neo4j, React, FastAPI, JSON Schema, GraphRAG, Python, Java, Atomic Agent

TALAN, End of study internship

AI-Powered Educational Assistant for Enhancing Academic Collaboration

February 2025
Talan Tunisie

- **Science Watch Agent:** Monitors new scientific articles, delivering trustworthy academic content in real-time.
- **Chat with AI Agent (RAG-based):** Supports article summarization, Q&A, and fact- checking with DOI verification for ethically sourced answers.
- **AI Writer Agent:** Assists in developing research articles. Offers custom bibliographies, citation, fact-checking, and LaTeX export for publication.
- **Presentation Generator Agent:** Will create slide presentations from academic articles to facilitate knowledge sharing.
- **Technologies :** AgenticRAG, Crawl4ai, CrewAI, Langchain, LangGraph, React, FastAPI, MuRAG

TALAN, AI Internship

MIRROR OF LIFE - Recipient of the Audience Award

July 2024
Talan Tunisie

- Boosted **CRISPR off-target prediction** accuracy to 88% using AI models, reducing unintended alterations.
- Reduced off-target rates by 30% via ML Algorithms, **Decision Trees**, and **Random Forests**.
- Improved data collection efficiency by 40% with **BLAST automation and web scraping**.
- **Technologies used : Multimodal RAG Technology:** The deployment of Multimodal RAG techniques allows better analysis of complex datasets.

PROJECTS

CO&CO-ESPRIT

May 2024

Development of a carpooling and roommate application for students, featuring key functionalities:

- Implemented an **NLP-based chatbot** using **Transfer Learning** to enhance user interaction and improve response accuracy.
- Ensured **secure image uploads** by detecting inappropriate content through text extraction with **easyOCR**.
- Developed **real-time messaging** functionality using **WebSockets** to enable instant user communication.

CO2 emission calculator

March 2024

- Developed a **machine learning-based tool** to estimate **CO2 emissions** of cars using real-world vehicle data from Canada.
- Implemented predictive models to help users **assess environmental impact** and make **eco-friendly transportation choices**.
- **Tools and technologies:** Streamlit, Pandas, Scikit-learn, and Matplotlib.

SKILLS

Technical skills (Backend : Python, C, FastAPI, Flask, Java, Spring Boot | Frontend: React.js, Angular, Symfony, TypeScript | Tools: Docker, Git, MySQL, NoSQL | Core Concepts: NLP, GenAI, AgenticRAG, LLM, AI Agent Architectures, Crewai, Selenium, crawl4Ai, MCP, RAG)

May 2024

Soft skills (Good debugger | Problem solving | Ethical Engineering | Prompt engineering Communication | Teamwork | Leadership)

EDUCATION

Private School of Engineering and Technologies, BSc. in Engineering in Computer Science

2022 – 2025

Research Thesis: AI-Powered Educational Assistant for Enhancing Academic Collaboration by Imen Ayari

Higher Institute of Environmental Technologies, Urban Planning, and Building, BSc. Urban Planning and Development

2019 – 2022

Research Thesis: Application on the new approach of the ARRU in terms of social housing supervised by Wadie Othmani

LANGUAGES

Arabic — Native | French — Full professional proficiency | English — Full professional proficiency

CERTIFICATES

- Applications of AI for Predictive Maintenance program with Nvidia
- Fundamentals of Deep Learning program with Nvidia
- Natural Language Processing (NLP) certification program with Nvidia

LEADERSHIP & ACTIVITIES

Contributed a case study to the UNIMED Occasional Paper, on Responsible AI (2025) titled “Responsible AI for Enhancing Digital Cooperation in the Mediterranean Higher Education”, published on Zenodo

2025

AI for Predictive Maintenance Training, First Place in AI for Predictive Maintenance Training program with NVIDIA & ESPRIT

August 2024