

CHERGUELAINÉ Ayoub

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AI Engineer

Highly motivated AI and NLP engineer with a strong background in software development. Skilled in various technologies and dedicated to creating innovative solutions. Passionate about artificial intelligence and NLP, with a particular interest in Generative Language Models.

Work Experience

Paseetah - AI Engineer - 10/ 2024 - PRESENT

I had the opportunity to contribute to the following projects:

1. **Paseet, Riyadh** - 4 months - Part Time AI Engineer

- Implemented support for **geospatial interactions**, including adding and processing **polygon geometry** directly within the chat interface (property boundaries, zones, land selection, etc.)
- Fine-tuned open-source LLMs to build a **custom classification agent**, improving intent detection and property-related query categorization.

2. **Paseetah Platform – Data Quality, GeoAI, and Automation Project , Riyadh**- 12 months – AI & Data Engineer

- Improved the quality of legacy datasets (parcels, transactions, road) by cleaning, correcting missing information, and harmonizing inconsistent attributes.
- Designed multi-step pipelines to **detect outliers in real-estate transactions** and align each transaction with its correct parcel using spatial matching and rule-based validation
- Developed an LLM agent to **extract legal rules from building codes** and convert them into structured, machine-readable formats for compliance checks.
- Performed large-scale scraping from open data sources to enrich the internal knowledge base and support downstream AI model

JURAI - Part Time LLM Engineer & Full-Stack Developer - 1/ 2025 - 12/2025

I had the opportunity to contribute to the following projects

1. **Jurai Assistant , Denmark**- 6 months - LLM Engineer & Full Stack Developer

- **Designed and implemented the full agentic AI architecture**, including retrieval agents, classifier agents, and reasoning agents using LangChain and CrewAI.
- **Built and automated large-scale scraping pipelines** to collect, clean, and structure Danish legal cases and laws from official sources.
- **Developed the complete backend ecosystem** using FastAPI (Python), covering:
 - AI orchestration and RAG pipelines
 - User authentication and account management
 - Chat session handling with long-term contextual memory
 - Embedding generation and integration with Pinecone vector DB
- **Deployed and maintained the platform on AWS EC2**, using Docker for containerization, environment isolation, and scalable production deployments.

2. **Predict AI, Denmark**- 7 months - LLM Engineer & Full Stack Developer

- Designed the **end-to-end AI pipeline** for processing new client cases, extracting structured facts/causes, enriching data using flight and weather APIs, and handling all edge cases with robust validation and fallback logic.
- Built the **semantic retrieval and comparison engine** that matches new cases with historical European court decisions, analyzing factual and legal similarities using LLMs and embeddings.
- Developed the **decision-prediction** module that estimates likely court outcomes based on historical patterns, structured legal features, and comparative reasoning, improving insurers' case resolution efficiency.

BuySell - FrontEnd Developer - 2/ 2024- 12/2024

I had the opportunity to contribute to the following projects:

1. **BuySell Platform , Blida** - 12 months - FrontEnd Developer

- **Developed and improved front-end features** for the Admin Platform using Next.js, TypeScript, and Tailwind, including dashboards, forms, tables, and management interfaces.
- **Integrated and tested APIs** across admin workflows, ensuring reliable data flow and improving overall UI/UX performance.
- **Built key e-commerce features** on the main platform such as product pages, category listings, search, filters, cart interactions, and navigation improvements.
- **Optimized performance and code quality** through component refactoring, responsive design, and best practices to enhance speed, usability, and maintainability across both platforms.

SIG Services - Python Developer - 9/2023- 12/2023

I had the opportunity to contribute to the following project:

1. **Odoo ERP Platform , Blida** - 3 months - Python Developer

- Designing and implementing **Odoo modules** to meet business requirements, API Development & Testing

Icosnet - Artificial Intelligence Intern - 1/2023- 7/2023

I had the opportunity to contribute to the following project:

2. **Document Classification Drive, Algiers** - 7 months - Artificial Intelligence Intern

- Create an **intelligent system** utilizing transformers for accurate and **context-based classification** of company documents.
- Developed an intelligent system base on context for **company documents classification**.

Education

Master degree on NATURAL LANGUAGE PROCESSING (Artificial Intelligence) – Saad Dahleb
Blida University, Blida, Algeria - 09/ 2021- 06/ 2023

Bachelor degree on INFORMATION SYSTEMS AND SOFTWARE ENGINEERING – Saad
Dahleb Blida University, Blida, Algeria - 09/ 2018 - 06/ 2021

Certificates

Building Transformer-Based Natural Language Processing Applications[\[Details\]](#)

Fundamentals of Deep Learning [\[Details\]](#)

Skills

Retrieval-Augmented Generation (RAG), AI Agents, LangChain , CrewAI, vLLM, n8n, Embeddings, Vector Stores, LLMs, Fine-tuning, Workflow Automation, Agent Orchestration, API Development, PostgreSQL, MongoDB, Redis, Data Scraping, Data Pipelines, Data Visualization, PyTorch, TensorFlow, Hugging Face, Transformers, Scikit-learn, Jupyter, FastAPI, Flask, [Next.js](#), React, Tailwind CSS, shadcn/ui, Docker, AWS EC2, AWS Lambda, CI/CD, Git, Google Cloud, Hugging Face, Python, TypeScript, JavaScript, SQL, Bash

Projects

- **Machine Learning & NLP Projects**
 - Developed multiple document-classification models using [BERT](#), [BART](#), [GPT-2](#), and other transformer architectures.
 - Fine-tuned large language models including [Qwen-8B](#) and [LLaMA-3.1](#) for domain-specific tasks.
 - Created lightweight LLM chat applications using [Gemini](#) and [Phi-3](#).
 - Generated a labeled [dataset](#) for document classification tasks.
- **Algorithms & Data Structures Projects**
 - Designed and implemented a meta-heuristic algorithm to solve the SAT-1 problem [\[Source\]](#).
 - Built a rule-based search engine using cosine similarity for ranking relevance [\[Source\]](#).
- **Web Development Projects**
 - Developed production-ready AI model inference APIs (HuggingFace Spaces and custom endpoints) [\[Hugging Face Profile\]](#).
 - Built a real-time chat application.
 - Implemented a custom search engine with ranking and filtering features.
 - Built a cloud storage application with file management functionality [\[Source\]](#).