

# Ahmed Belaaj

## AI Engineer, Specializing in GenAI and LLMs

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## EDUCATION

### Telecom Paris & ENSTA Paris, Institut Polytechnique de Paris (IPP)

Sep 2023 - Feb 2025

Specialized Master Diploma in Artificial Intelligence | GPA: 16 / 20 | Courses: Deep Learning, NLP, Vision, GPU, Ethical AI

### National Institute of Applied Science and Technology (INSAT Tunis)

Sep 2017 - Oct 2022

National Computer Science Engineering Diploma

## EXPERIENCE

### Full-Stack AI Engineer | Headstarter

USA, Remote | Dec 2024 - May 2025

- Shipped 10 production-ready projects using **code reviews, modular design, Git, and LLMs** in collaboration with engineers from **Google, Two Sigma, and Tesla**.
- Integrated an **AI chat assistant** into the **open-source Judge0 IDE** using **JavaScript**, enabling real-time programming help and debugging, with a choice of **four LLMs (Llama 3, Gemini, DeepSeek, Qwen)** and persistent API key storage.
- Trained a neural network for classifying **1,000+ brain MRIs (99% accuracy)**, providing instant report generation and explainability using **Gemini 1.5 Flash** and **saliency maps**.

### Data Scientist | EagleAI (formerly UntieNots)

Paris, France | Jul 2024 - Dec 2024

- Contributed as an intern to the R&D team of a SaaS company for **AI-powered retail personalization**, developing a **47M-parameter PyTorch transformer** that increased offer novelty by **15%**, measured by historical distinctness of recommended products.
- Optimized training workflows with **Flash Attention, mixed precision, and Vertex AI pipelines** on **GCP**, cutting epoch training time **from 30 min to 5 min** and automating the ingestion and feature engineering of **200 GB of data** using **SQL** in **BigQuery**.
- Led technical meetings featuring 20 data scientists and the Chief AI Officer, highlighting progress and decisions. Established a structured meeting methodology to enhance team alignment and accountability.

### Machine Learning Engineer | Polytechnique Montreal

Montreal, Canada | Mar 2022 - Aug 2022

- Co-developed a **reinforcement learning (RL)** framework as an intern in SWAT-Labs, an AI safety-focused lab, with a team of 6 PhD and master's students to systematically **expose vulnerabilities** in legacy Language Models (LMs).
- Assessed LM robustness using the MultiWOZ 2.0 dataset (~**10000** tourism-related dialogues) by automatically applying **meaning-preserving edits** (e.g., synonyms, typos, punctuation) designed to mislead the model without altering semantics.
- Implemented custom **Python** scripts to automate large-scale testing of transformed dialogues, revealing that **20% of model responses failed** despite input meaning remaining unchanged.

## PROJECTS

### Local LLM Chat App – Instant Setup with Streamlit | Individual Project - [Github](#)

May 2025

- Built a **single-container chat app** for **open-source LLMs**, reducing user setup time from 15+ minutes to **under 30 seconds** by eliminating all manual configuration.
- Shipped a production-ready solution with **CI/CD** pipeline automation for instant local deployment.

### Document Q&A System for Renault (a Multinational automobile manufacturer)

Feb 2024 - Jun 2024

- Fine-tuned **CamemBERT** on **4000 documents** related to automotive maintenance to interpret technical queries for Renault engineers.
- Developed a web interface allowing users to query the model and receive precise, **context-aware answers**, enhancing **knowledge retrieval** for the engineering team.

## SKILLS

**AI / ML:** Pytorch, TensorFlow, Scikit-learn, Transformers, LangChain, NLP, RAG, Fine-tuning, Prompt engineering

**Dev / Data:** Python, SQL, Git, Docker, Bash, FastAPI, Streamlit, Pandas, NumPy, OpenCV, Pydantic

**Infra / Cloud:** GCP, Kubernetes, CI/CD, MLflow

**Other programming languages:** JavaScript, C/C++, Java

## LANGUAGES

**English:** TOEFL (C1), **French:** TCF (C1), **Arabic:** Native, **German:** Basic