



Mathieu ASTRUC

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EXPERIENCE

Airbus

Mar. 2026 – Sep. 2026

Applied AI Engineer - Master Thesis

France

- Built a hybrid RAG system over 10k+ export licenses and regulatory docs, routing queries between a LangChain/FAISS pipeline and a NL-to-SQL path for structured data ensuring zero generative approximation on field-level queries.
- Engineered the full pipeline end-to-end: chunking, embedding, reranking, token-cost optimization, evaluation framework, and user feedback loop designed for reliability in a safety-critical environment.
- Developed AI POCs with cross-functional teams and presented the system to 100+ employees, driving enterprise AI adoption.

NTNU – Norwegian University of Science and Technology

May 2025 – Aug. 2025

Research Engineer - Intern

Norway

- Developed an embedded AI interaction stack for a humanoid robot, combining real-time gesture recognition, computer vision and a fine-tuned LLM for domain-specific dialogue.
- Optimized on-device inference latency through GPU pipeline tuning, enabling real-time responses under hardware and runtime constraints.
- Implemented a Human-in-the-Loop framework to manage edge cases, improve robustness and support continuous model improvement.

Banque de France

May 2024 – Aug. 2024

Data Scientist - Intern

France

- Automated scraping workflows aggregating unstructured public/financial data from multiple sources.
- Combined OCR, Speech-to-Text and LLMs to digitize raw audio/visual content, feeding a downstream RAG system.

Comat Specific

Jan. 2025 – May 2025

Machine Learning Engineer – Part-time role alongside studies

France

- Built a deep-learning OCR pipeline converting legacy hand-drawn 2D engineering sketches into structured machine-readable data, modernizing industrial workflows.

SELECTED PROJECTS

Mistral AI Hackathon – #1 Track Winner & 3rd Place Overall – Paris

2026

- Built **Impostral** in 8 hours, a real-time social deduction game where autonomous Mistral agents infiltrate a group of humans and attempt to survive by acting human.
- Designed a multiplayer social Turing test in which humans and AI agents answer personal questions before voting to eliminate the suspected AI. [Watch the demo.](#)

Publication – HCI International 2026, Montreal (Springer Conference Proceedings)

2025 – 2026

- Lead author of an accepted HRI paper on an optimized real-time computer vision architecture for gesture recognition, integrating MediaPipe landmarks, lightweight ML classifiers, and low-latency robot actuation.

EDUCATION

Esaip – Master of Engineering, Data Science (Grade A - Top 10%)

Sep. 2021 – Sep. 2026

Engineer's Degree (5-year program) - Optimization algorithms, Multicriteria Optimization, ML, Image Processing, Reinforcement Learning, Explainable AI, Probabilistic Modeling...

France

Universidad Politécnica de Madrid

Sep. 2025 – Feb. 2026

Study Abroad – Machine Learning, cloud computing, large-scale data architectures

Spain

SeAMK – University of Applied Sciences

Jan. 2024 – Jun. 2024

Study Abroad – Machine Learning, Deep Learning, Software Development, Embedded Systems

Finland

SKILLS

Programming Languages Python, C, C++, SQL, Bash

Data Science & Machine Learning PyTorch, TensorFlow, Scikit-learn, OpenCV, NumPy, Pandas, Transformers

LLM engineering LangChain, LlamaIndex, Agent workflows, Fine-tuning (LoRA / QLoRA), Vector DBs (FAISS, Chroma)

Specializations NLP, RAG, Computer Vision, Multimodal AI, Human Robot Interaction

Inference & Deployment vLLM, llama.cpp, Hugging Face TGI, FastAPI, Docker, Kubernetes

Languages French (native), English (C1), Spanish (B1)

BEYOND WORK

Founder of a French-speaking AI community with **50k+** subscribers · Former competitive basketball player · Entrepreneurship · Hackathons · Chess