



Joël Hamilcaro

Senior Data Scientist

AI tool design · Statistics, performance monitoring & decision support · Web interfaces

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 Paris

 joelhamilcaro.com

 joel-hamilcaro

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 Category B driving licence - Own vehicle

PROFESSIONAL EXPERIENCE

Freelance - AI, Data & Web Engineer

2025 - Present

- Co-founder of [Gros Gradient](#)
- Prototyping and production deployment of algorithms and web interfaces for sports associations.
- Development of an AI semantic matching engine for Osmoz-IT.
- Benchmarking and performance analysis of deployed algorithms.
- **Technologies** — Next.js, OpenSearch, React, Python, TypeScript, FastAPI, MLOps, Docker, Kubernetes.

Data Scientist - Healthcare & Public Health • AP-HP Headquarters, Paris

2023 - 2025

- Predictive analysis of hospital capacity using time series.
- Deployment of scoring models for post-Covid monitoring and hospital activity during the Paris 2024 Olympic Games.
- Development of generative AI for medical coding (ICD-10).
- Design of relational database architectures and automation of healthcare data pipelines (PMSI).
- **Technologies** — Transformer, PyTorch, Tensorflow, Spacy, Spark, Pandas, PostgreSQL, CI/CD.

Data Scientist • Safran Aircraft Engines, Villaroche

Apr. - Sep. 2022

- Data science for aircraft engine maintenance (MRO). [Letter of recommendation](#)
- Design of a patented AI system for process optimization.
- **Technologies** — Python, optimization, modeling and simulation.

EDUCATION

Dual Master's in Mathematics & Computer Science: Data Science • Université Paris-Cité

2020-2022

- Master's in Mathematics — Highest honors.
- Master's in Computer Science — Highest honors.

Dual Bachelor's in Mathematics & Computer Science • Université Paris-Cité

2017-2020

PACES (first year of medical school) • Paris 7 Faculty of Medicine

2015-2017

Scientific Baccalaureate, Mathematics major • Lycée Jacques Feyder

2014-2015

- Highest honors.

PUBLICATIONS & AWARDS

2nd Worldwide NLP Prize • Orange Silicon Valley, California (USA)

2023

- Publication — Low-resource Machine Translation [ACL Anthology](#)

AI - Optimal maintenance process for aeronautical parts

2022

- Invention patent [FR3144113A1](#)

COMMUNITY ENGAGEMENT

French Karate Federation (FFKDA)

2024 - Present

- National Karate-Do Coach
- Federal Karate Instructor for toddlers, children, teenagers and adults - Val-d'Oise (95)
- Examiner for black belt grading.
- **Federal Instructor Diploma (DIF)** (2024)
- **2nd Dan Black Belt (Shotokan Karate)** (2026)
- **1st Dan Black Belt (Shotokan Karate)** (2014)

SKILLS

Statistics, tracking & monitoring

Inferential statistics, Hypothesis testing, Regression, Time series, Forecasting, Scoring, Cross-validation, AUC, F1, RMSE, Model monitoring, Drift detection, Data quality, KPIs and dashboards

Machine Learning & AI Engineering

Machine Learning, Deep Learning, NLP, Reinforcement Learning, Computer Vision, Anomaly Detection, Time Series, Risk Scoring, scikit-learn, XGBoost, LLM, RAG, Transformers, Generative AI

Web development & interfaces

Next.js, React, TypeScript, JavaScript, HTML, CSS, Web interfaces, Front-end, Full-stack, API REST, FastAPI

Databases

SQL, PostgreSQL, MySQL, NoSQL, Cypher, Hadoop, ER modeling (Entity-Relationship), Relational databases, Graph databases, Data modeling, Pipelines ETL, OpenSearch, Vector search, Spark

Programming languages

Python, R, Java, C++, HTML, CSS, JavaScript, TypeScript, PHP, SQL, Bash

Software tools

Office, UML, LaTeX, Git, Linux Shell (Bash), Databricks, Airflow, Delta Lake, ML Flow, GCP (Google Cloud Platform), Azure ML, Spark / PySpark, Pandas, NumPy, PyTorch, Docker, Kubernetes, FastAPI, CI/CD, Clouflare

LANGUAGES

French

Native

English

Full professional proficiency