

Matthieu Cordier

Paris, France
+33 6 49 25 97 49

www.mcordier.xyz
www.github.com/mcordier
matt.cordier@icloud.com

With expertise in mathematical modeling and a strong foundation in programming—particularly functional programming—I have developed my skills through a range of projects in machine learning & data engineering. Drawing connections between abstract mathematical concepts and practical techniques, I co-founded fonctionlabs.com to share and apply this mindset to real-world problem for business

Education

Columbia University <i>Master of Operation Research</i>	2018 – 2019 New York, United States
Ecole Polytechnique <i>Master of Energy and Applied Mathematics</i>	2015 – 2018 Palaiseau, France
Sainte-Geneviève <i>Classe Préparatoire aux Grandes Ecoles</i>	2013 – 2015 Versailles, France

Work Experience

Co-Founder <i>Fonction Labs</i>	Dec 2023 – Now Paris, France
---	---------------------------------

- Co-founded Fonction Labs, specializing in building custom AI solutions.
- Developed and deployed multiple GenAI applications, focusing on agents, RAG (Retrieval-Augmented Generation), LLM pipelines, and building AI evaluation methods.
- Led projects including document extraction and report generation for an agro-food leader, financial report extraction for a major insurance company, and legal document verification.
- Designed and implemented security measures for AI products, specifically addressing hallucinations and risks in sensitive legal documents.
- Worked on data engineering projects, including building and optimizing data pipelines for scalable data analytics.

Data Scientist <i>BCG X</i>	Nov 2021 – Dec 2023 Paris, France
---------------------------------------	--------------------------------------

- Designed and developed an anomaly detections software for images based on state-of-the-art techniques from scratch to production, automating customer's industrial process
- Developed data pipelines and deployed machine learning models using functional programming principles for fast, secured and robust automations
- Built optimization models for energetic project design to produce operational insights and optimize revenue

Machine Learning Engineer <i>Amadeus</i>	Jun 2019 – Dec 2020 Boston, United States
--	--

- Architected and developed an Automated Root Cause Analysis operational tool based on state-of-the-art techniques from scratch to production
- Created a popularity prediction model using Generalized Mixed Effect Models for Cache Managing

Other experiences <i>Research Internships</i>	2017 - 2018 Paris, France
---	------------------------------

- **Elum Energy**: Developed new Energy Management Systems for microgrid optimization (MILP, RL)
- **Parrot**: Research project on triplet loss neural networks for similarity learning

Skills

Programming Languages: Python, R, Haskell, Racket (Lisp), SQL, Java, Rust & C (beginner)

Tech skills: Docker, Kubernetes, dbt, AWS, Azure, Spark, Kafka, Elastic Search, Pytorch, LlamaIndex, LangChain, Ollama, Pandas, DuckDb

Languages : English, French (native), basic Spanish and Italian

Example of Academic & Personal Research Projects

Generalized Non Linear Mixed Effect Models Library (2020-2021): Non-linear GMEM library for fast training and big data (pytorch).

Time Series Generation (Fall 2019): WaveNet architecture for Continuous Time Series Generation in finance simulation (pytorch).

Neural Network Compression (Spring 2019): Determinantal point process sampling for neural network com-

pression.

Network Optimization (Spring 2019): Near Optimal Strategies for Targeting in Networks using submodular optimization.

Submodular Optimization for Summarization (Spring 2019): Submodular Optimization for Multidocument Summarization.