Émile Esmaili

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Education

Columbia University — New York, NY
M.A. in Applied Statistics & Data Science (QMSS) — *Dec 2023*

Sorbonne Université — Paris, France
BSc. in Mathematics courses — *Jun 2023*

PSL Research University (Paris-Dauphine) — Paris, France
MSc. in Financial Engineering — *Sept 2020*

PSL Research University (Paris-Dauphine) — Paris, France
BSc. in Economics — *Jun 2017*

Research Experience

NASA Goddard Institute for Space Studies — New York, NY
Research Intern — *Sep 2022 – Dec 2022*

- Graduate Researcher at NASA GISS Columbia University's Department of Earth and Environmental Engineering, jointly supervised by Prof. Upmanu Lall and Dr. Michael Puma.
- Topic: Using hierarchical Bayesian models to explore the driving factors of global migration and develop improved probabilistic projections of bilateral migration flows

Work Experience

Ekimetrics — Paris, France
Data Scientist — *Sep 2021 – Apr 2022*

- Developed a web-app prototype for a world-leading investment bank that incorporates clustering, web-scraping and NLP to analyze private firms (tech stack: Python, Git, Streamlit)
- Used pre-trained NLP models (transformers, embeddings, NER) for semantic analysis and topic modeling of company news

Natixis Global Markets Research — Paris, France
Quantitative FX Research Intern — *Sep 2020 – Apr 2021*

- Researched portfolio optimization with cryptocurrencies using constrained optimization and machine learning
- Implemented statistical arbitrage on yield curves
- Researched systematic FX trading strategies using the Kalman filter

Skills

Programming: Python, MATLAB, R

Frameworks: PyTorch, Keras, Scikit-learn, PyMC, CVX, Git, Latex

Natural Languages: French (Native), Farsi (Native), English (Professional), German (Elementary)

Relevant Coursework

Analysis: Topology, Series, Differential Equations, Lebesgue Integration

Algebra: Linear Algebra, Bilinear Algebra

Computer Science: Deep Learning for Computer Vision, Machine Learning

Probability & Statistics: Probability Theory, Statistics, Econometrics, Bayesian Statistics

Other: Number Theory, Graph Theory & Combinatorics, Convex Optimization