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 Pure Mathematics — *June 2024*

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

Research Experience

Columbia University & NASA Goddard Institute for Space Studies — New York, NY
Research Intern — *Fall 2022 & Summer 2023*

- Graduate research assistant at NASA GISS and 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 leading investment bank that incorporates clustering, web-scraping and NLP to analyze private firms
- Used NLP models for sentiment analysis 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

Teaching Experience

Columbia University — New York, NY
Teaching Assistant - Projects in Advanced Machine Learning (GR5074) — *Jan 2023 – May 2023*

- Held weekly recitations and office hours covering the basics of applied deep learning and graded homeworks

Skills

Programming: Python, MATLAB, R

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

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

Relevant Coursework

Analysis: Topology, Functional Analysis, Complex Analysis, Measure Theory

Algebra: Linear Algebra, Bilinear Algebra, Abstract Algebra

Applied Mathematics: Convex Optimization, Differential Equations, Numerical Analysis

Other: Number Theory, Graph Theory & Combinatorics

Machine/Deep Learning: Deep Learning for Computer Vision, Machine Learning, Reinforcement Learning, Speech Recoginition

Probability & Statistics: Probability Theory, Statistics, Econometrics, Stochastic Calculus