

Émile Esmaili

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EDUCATION

Columbia University <i>M.A. in Applied Statistics & Data Science (QMSS)</i>	New York, NY
Sorbonne Université (Pierre et Marie Curie - Paris VI) <i>BSc. in Mathematics</i>	Paris, France
PSL Research University (Paris-Dauphine) <i>MSc. in Financial Engineering - BSc. in Economics</i>	Paris, France

RESEARCH EXPERIENCE

Columbia University & NASA Goddard Institute for Space Studies <i>Research Staff</i>	New York, NY <i>Jan 2024 - June 2025</i>
<ul style="list-style-type: none">Research staff at the Center for Climate Systems Research supervised by Prof. Michael Puma. and Dr. Andrew RobertsonTopic 1: Modeling the impact of climate and conflict on food security in early modern Europe using Bayesian multilevel models, econometric contagion models and machine learningTopic 2: Bias correction of subseasonal-to-seasonal (S2S) rainfall forecasts and drought prediction with deep learning	
Columbia University & NASA Goddard Institute for Space Studies <i>Research Intern</i>	New York, NY <i>Sep 2022 - Dec 2023</i>
<ul style="list-style-type: none">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 and Hidden Markov Models to explore the driving factors of global migration and develop improved probabilistic projections of bilateral migration flows	
Memorial Sloan Kettering Cancer Center & Columbia University <i>Practicum Data Scientist (Capstone Project)</i>	New York, NY <i>Jan 2023 - May 2023</i>
<ul style="list-style-type: none">Researched drivers of lower grade brain glioma using machine learning and survival modelsWorked on an image segmentation model for IHC staining based on MSK's proprietary DeepLIIF model	

CONFERENCE PAPERS

- **Modeling Human Migration with Non-Homogeneous Hidden Markov Models: an Application to Inter-state Mobility in the United States**, Emile Esmaili, Upmanu Lall, Michael J.Puma, Aric Cutuli, Rachata Muneeppeerakul. AGU Fall Meeting 2023
- **A Bayesian Hierarchical Framework for Capturing Preference Heterogeneity in Migration Flows**, Aric Cutuli, Upmanu Lall, Michael J. Puma, Emile Esmaili, Rachata Muneeppeerakul. AGU Fall Meeting 2023

WORKING PAPERS

- **Violent Warfare Ignited Price Contagion Dynamics in Early Modern Europe**, Emile Esmaili, Michael Puma, Francis Ludlow, Eva Jobbova
- **Compounding Effects of Harsh Climate and Societal Disruptions on Food Prices in Early Modern Europe**, Emile Esmaili, Michael Puma, Francis Ludlow, Eva Jobbova

TEACHING EXPERIENCE

Columbia University <i>Teaching Assistant - Machine Learning for the Social Sciences (GR5073)</i>	New York, NY <i>Sep 2023 - Dec 2023</i>
<ul style="list-style-type: none">Held weekly recitations and office hours covering the basics of machine learning and graded homeworks	
Columbia University <i>Teaching Assistant - Projects in Advanced Machine Learning (GR5074)</i>	New York, NY <i>Jan 2023 - May 2023</i>
<ul style="list-style-type: none">Held weekly recitations and office hours covering the basics of applied deep learning and graded homeworks	

WORK EXPERIENCE

Ekimetrics

Data Scientist

Paris, France

Sep 2021 – May 2022

- Worked on Natural Language Processing (NLP) applications in the financial sector

SKILLS

Programming: Python, MATLAB, R

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

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