

EMILE ESMAILI

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EDUCATION

Princeton University

Ph.D. in Science, Technology, and Environmental Policy (STEP)

Advisors: Prof. Michael Oppenheimer, Prof. Filiz Garip

expected 2030

Columbia University

M.A. in Quantitative Methods in the Social Sciences (QMSS)

Sorbonne Université

B.S. in Mathematics

Université Paris-Dauphine – PSL Research University

M.S. in Financial Engineering, B.S. in Economics

PUBLICATIONS

Working Papers

- *A Bayesian Hierarchical Framework for Modeling Migration Flows.* Aric Cutuli, Upmanu Lall, Michael J. Puma, **Emile Esmaili**, Rachata Muneeppeerakul. arXiv:2412.01242

Selected Works in Progress

- *ENSO increased Food Insecurity in Early Modern Europe.* **Emile Esmaili**, Janavi Kumar, Michael J. Puma, Francis Ludlow, Poul Holm, Eva Jobbova, Fredrik Charpentier Ljungqvist.
- *Improving Subseasonal Indian Summer Monsoon Rainfall Forecasts with U-Net Calibration.* **Emile Esmaili**, Andrew W. Robertson, Muhammad Azhar Ehsan, Bohar Singh, Haoming Deng, Aaron Kaplan, Avijit Dey, Susmitha Joseph.
- *Droughts in Middle East/Arabian Peninsula: Spatiotemporal Variability, Teleconnections, and Seasonal Forecasts.* Muhammad Azhar Ehsan, **Emile Esmaili**, Andrew W. Robertson et al.
- *Warfare Ignited Contagion Dynamics in Early Modern Europe.* **Emile Esmaili**, Michael J. Puma, Francis Ludlow, Eva Jobbova. arXiv:2411.18978
- *Modeling Migration Flows with Non-Homogeneous Hidden Markov Models.* **Emile Esmaili**, Upmanu Lall, Michael J. Puma, Aric Cutuli, Rachata Muneeppeerakul.

RESEARCH EXPERIENCE

Research Scientist

NASA Goddard Institute for Space Studies (NASA GISS) / Columbia Climate School

Jan 2024 – Jul 2025

TEACHING EXPERIENCE

Instructor

QMSS Math Camp, Columbia University

Fall 2023

Teaching Assistant

GR5073: Machine Learning for the Social Sciences, Columbia University

Fall 2023

Teaching Assistant

GR5074: Advanced Projects in Machine Learning, Columbia University

Spring 2023

SKILLS

Programming Languages

Python, R, MATLAB

Natural Languages

French, English, Farsi