Dialogues of MAPS

Migration and Displacement Action Plan for Sub-Saharan Africa
Developing Policy-Oriented Research on Migration and Displacement in the Sub-Saharan Region

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« Predicting food security using secondary data, and a reflection on the links of food and migration.»

Prof. Francesca Panero
Università Sapienza University of Rome

Francesca is Assistant Professor (RTT) in Statistics at the Department of Methods and Models for Economics, Territory and Finance (MEMOTEF) at Sapienza University, Rome, and a Visiting Fellow at the Department of Statistics of the London School of Economics and Political Science where, up until May 2024, she was an Assistant Professor. At LSE, Francesca Panero is also affiliate of the Grantham Research Institute on Climate Change and the Environment. For 2025, she is the Visiting lecturer of the Department of Informatics, Università della Svizzera Italiana (Lugano, Switzerlanda).

In 2022 she obtained a PhD in Statistics from the University of Oxford. Before the PhD, she has spent quite some time (BSc and MSc) at the Department of Mathematics of the University of Turin and at Collegio Carlo Alberto.

Dr. Emma Kopp
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Emma is a PhD student in Statistics in the CEREMADE at Paris-Dauphine University supervised by Christian Robert and Robin Ryder. Her research focuses on Bayesian computational statistics (MCMC and ABC methods) and its applications to linguistics. Currently, she is visiting Sapienza University of Rome to work on food security estimation with Francesca Panero.

Abstract

The talk will start with an introduction on the problem of estimation of food security levels. Usually, governments and international organisations run surveys to estimate food security, but this is an extremely expensive - and sometimes dangerous - activity. To complement these surveys, we will walk with you through the pros and cons of estimating such measures using machine learning and statistical methods trained on secondary data such as economical, demographical, environmental and conflict data. We will compare the outputs of Gaussian processes, XGBoost and neural networks to forecast regional levels of food security over African countries.
We will conclude with a reflection on how research on food security could be linked to the study of dynamics in migrations.

This project is in collaboration with the Early Warning and Forecasting Unit of the World Food Programme.

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https://meet.google.com/mwd-rcdy-sun