



HungerMap LIVE: Tracking and predicting hunger in near real-time

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Abstract:

To combat today's hunger challenges and reach the Sustainable Development Goal 2 on Zero Hunger, it is vital to provide decision makers with the most accurate and up-to-date information on the food security situation. However, gaps between surveys and analyses often affect the timeliness, validity and usability of food security data.

To bridge this gap, WFP launched in January 2020 the HungerMap^{LIVE}: a global hunger monitoring system that provides near real-time estimates of the food security situation in over 90 countries. The platform pulls together key metrics – such as food security information, weather, population size, conflict, hazards, nutrition information and macro-economic data – to predict and monitor the food security situation in close to real-time.

In this talk, we will present the machine learning approach used in the HungerMap^{LIVE} to nowcast the prevalence of people with insufficient food consumption and of people using crisis or above crisis food-based coping strategies when primary data is not available. Making use of a unique global data set, we show that the proposed models can explain up to over 70% of the variation in insufficient food consumption and crisis or above food-based coping levels. We also show that the proposed models can be used to nowcast the food security situation in near-real time and propose a method to easily identify what is driving the changes observed in predicted trends, which is key to make predictions serviceable to decision makers.

Keywords:

Predictive analytics; Machine learning; Regression; Insufficient food consumption; Near real-time data