

It's Raining Men

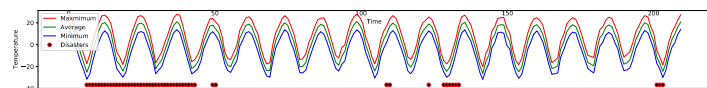
Can we predict migration waves using weather and natural disaster data?



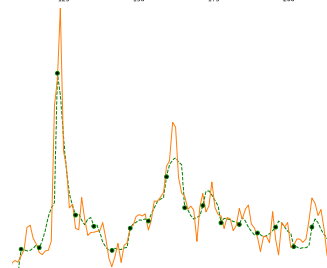
Method:
Convolutional Neural network
Keras + Tensorflow
12 Hours of training

Input (Per Country):
Last 12 Months

- Minimum, maximum and average temperatures
- Natural disasters
- Number of refugees



Output:
Predicted number of refugees
for the next 6 Months



Data Sources:

- Global Weather:
 - NOAA – National Oceanic and Atmospheric Administration (US)
- Natural Disasters:
 - EM-DAT – Emergency Event Database by the Centre for Research on the Epidemiology of Disasters (WHO, Belgium)
- Refugees:
 - UNHCR – The UN Refugee Agency

Is it really the weather data?

In order to make sure that the weather data do help in predicting the numbers of refugees, another model was trained with refugee numbers only, given the values for the last 12 months and predicting the number of refugees for the next 6 months

Results:

Mean Squared Error

- with weather data: $2.0 \cdot 10^{-4}$
- without weather data: $2.8 \cdot 10^{-4}$

Example, Brasil (1998 – 2016):

