**Europe Weather Forecast Problem Statement**

Source: <https://www.kaggle.com/datasets/thedevastator/weather-prediction/data>

**Problem Statement:**

Want to create a better temperature (min, max) forecaster across the European continent.

**Context:**

The current weather model for the European continent is somewhat out of date and has shown to be increasingly inaccurate in its weather forecasting. Multiple European governments would like to see the forecast model either improved or redesigned to be better suited for accurate predictions going forward. Current models are not based on more recent data to account for the global trends that have been occurring in the past several years or more.

**Criteria for Success:**

Have the R^2 of the model be at least 0.7. OR Have the model be able to accurately predict the weather in all locations, such that nearly all forecasts are within 1 SD of the actual value.

**Scope of Solution Space:**

Each data location contains a different set of variables recorded, find the ones that are prevalent in all or as much as possible and use those as the key variables to train models. The variables present across all locations include: mean temperature, min temperature, and max temperature. Utilize other variables like sunshine, precipitation, humidity when available to assist in training the model.

**Constraints within Solution Space:**

Missing data points or inconsistencies in available data could lead to certain locations to have worse predictions than others. The dataset contains information from 18 different locations across Europe between the years 2000-2010, which mean the most recent data is not provided, as well as certain nations/regions near the edges of the continent will not be represented as well by the data (e.g. Turkey, Finland, Iceland, etc.)

**Relevant Stakeholders:**

* European Governments
* European Climate Assessment & Dataset (ECA&D)
* European Centre for Medium-Range Weather Forecasts (ECMWF)

**Key Data Sources:**

* weather\_prediction\_dataset.csv
* weather\_prediction\_bbq\_labels.csv
* metadata.txt
* Original data taken from <http://www.ecad.eu>