IronHack Lisbon

Data Analytics July 2022

FOREST FIRES PREDICTION MODEL & APP

GOALS

Leveraging on Data Analytics to support firefighting efforts and reduce risks incurred by populations.

Create a website/app to present the results based on geography (district).

App will alert population about the risks as well as support allocation of firefighting resources.

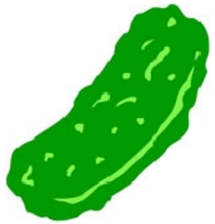
EVOLUTION

Developed a model that predicts risk of big forest fires (above 500 ha).

Model score at 90 % fot the Test set.

LYBRARIES

Pandas, Numpy, MatplotLib, Sklearn, Pickle, Flask, Folium



pickleDB

Flask

Folium

PROCESS

With logistic model in place, we setup an API to Instituto de Meteorologia, retrieving the available temperature forescast (following five days).

Forecast values retrieved are fed into the model to return a prediction of extreme fires over the next five days (using pickle).

PROCESS

Developed a web interface where user could choose the district of interest and consult the relevant prediction (Flask).

Refine the interface using Folium maps to create an even more intuitive experience.

FINAL PRODUCT & SHOWCASE

Bringing data analytics to contribute to fire fighting and prevention efforts.

Focusing on events with large burnt areas centers forecasting on the type of event that generates bigger damages and losses.

Output of the statistical model is presented via an intuitive graphical interface.

NEXT STEPS

Further refine forecasting model accuracy as further data points become available.

Develop the app to trigger warnings whenever there is risk of extreme events.

Explore Folium maps to create an even more explicit and user friendly interface, namely colouring the geographical areas with greatest risks.

Thank you!