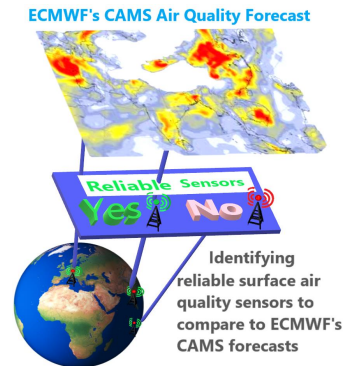


Challenge #24 - A Simple Global Air Quality Data Classification - Milestones



ECMWF Summer of Weather Code 2020 challenges

GORDON RATES

OPENAQ EVALUATION

ECMWF MENTORS: JOHANNES FLEMMING AND
MIHA RAZINGER

ECWMF ESoWC Challenge #24

- A Simple Global Air Quality Data Classification - Overview

Aim

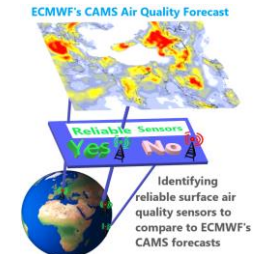
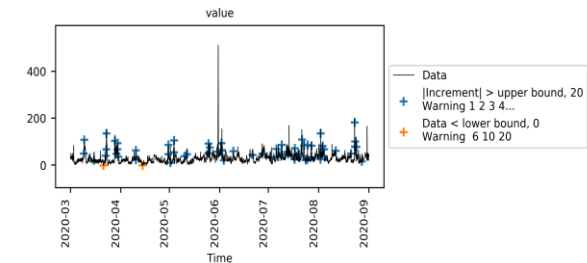
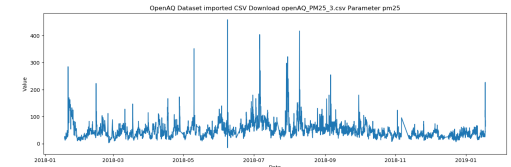
Quality Control Evaluation of Air Quality Datasets

Find Outliers and Errors

Search for Errors over Countries, Regions and individual stations

Search over differing Time Schedules (6 months, 8 months etc)

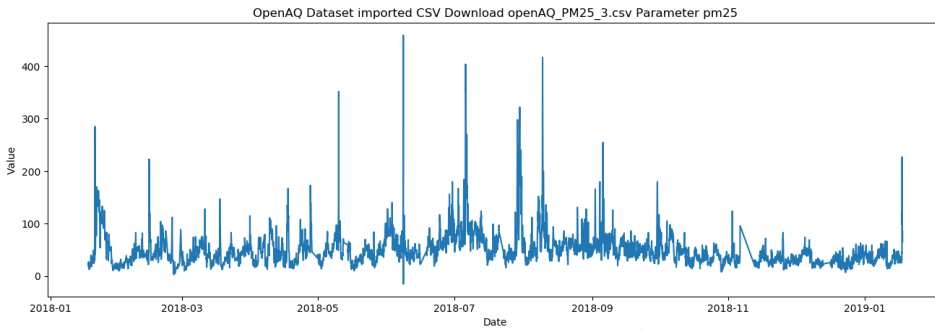
Report performance per AQ Station



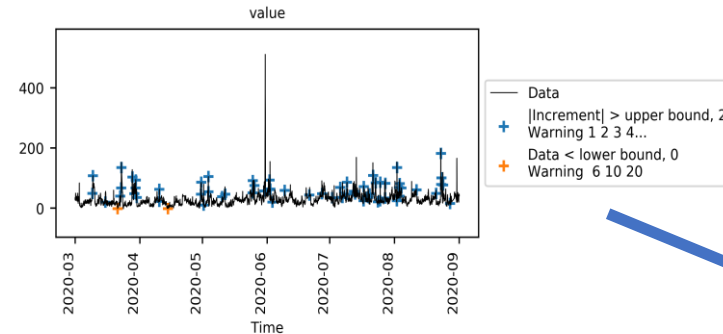
Challenge #24

- A Simple Global Air Quality Data Classification - Overview

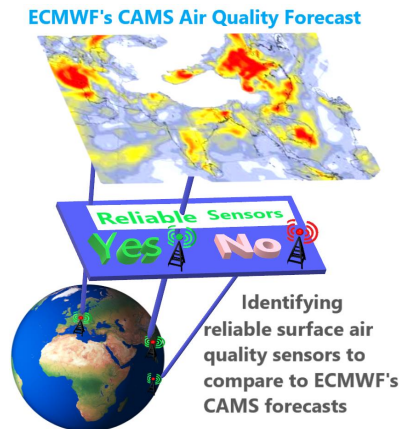
Visual Analytics



Find Outliers and Errors



Report Reliability



Challenge #24

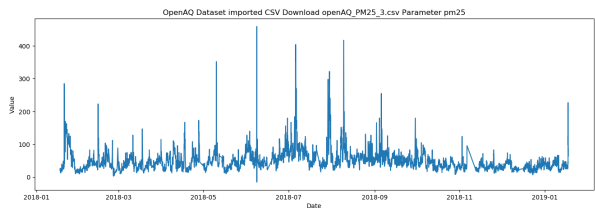
- A Simple Global Air Quality Data Classification - Overview

Step 1 Import AQ Dataset from OpenAQ

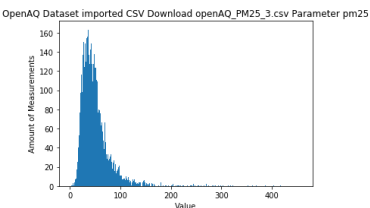
Step 2 Data Wrangling and Visual Analytics

Step 3 Pecos Quality Control Evaluation

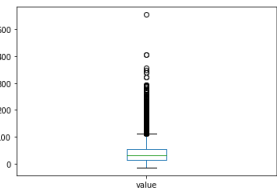
Output



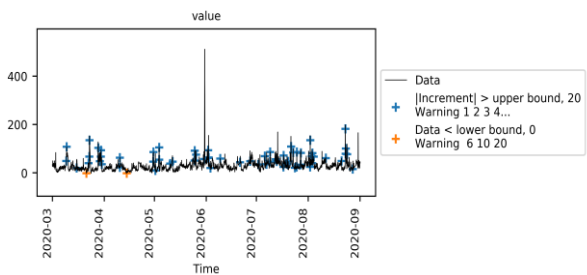
Line Plot



Histogram



Boxplot



Plot of Outliers

Outliers and Timestamps
Web page and Excel spreadsheet

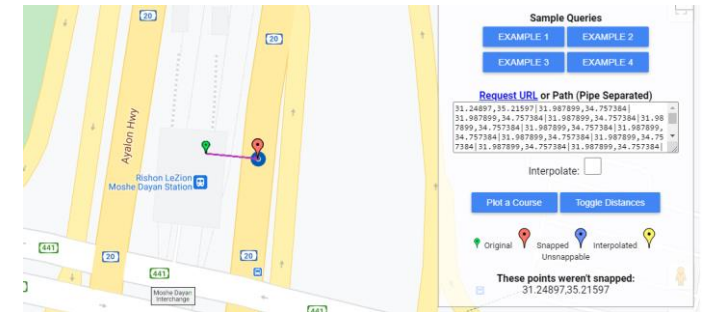
Imported Dataset
Excel spreadsheet

Challenge #24

- A Simple Global Air Quality Data Classification - Overview

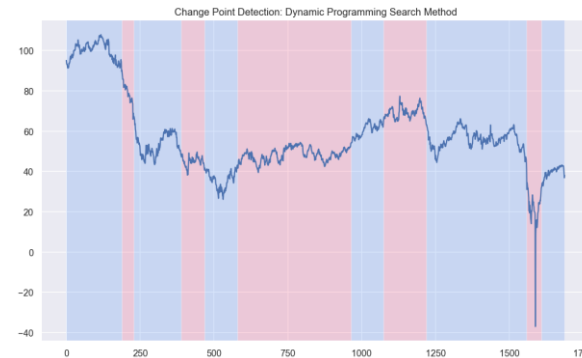
Output

Step 4 Attributes about Stations



Nearest Highway to OpenAQ Station compared to mean

Step 5 Trend Analysis



Change Points in Selected Dataset

Challenge #24

- A Simple Global Air Quality Data Classification - Overview

Questions Answered

Reliability of Stations for selected OpenAQ Air Quality Datasets

How possible to use OpenAQ to compare to ECMWF CAMS forecasts

Evaluation of Stations means and Distance to Nearest Highway

