Motorbike Ambulance Calls

Motorbike accidents and corresponded ambulance calls are highly depended on environmental and seasonal settings, like weather conditions, precipitation, day of week, season, hour of the day, etc. The data was aggregated over the course of two years, on hourly basis, and then extracted and extended with the corresponding weather and seasonal information.

# Associated tasks

## Regression

Prediction of the hourly ambulance calls count based on the environmental and seasonal settings. Prediction model should provide monotonic in the terms of some features, if it is proved by data.

## Event and Anomaly Detection

Define the ambulance calls patterns with respect of special events and define the cases that might be considered as abnormal behavior.

# Deliverables

Full Texts Report that contains detail description of Data Analysis, Data Modelling and Patterns/Anomaly detection processes with conclusions and their explanations.

# Dataset characteristics

motorbike\_ambulance\_calls.xlsx has the following fields:

- index: record index

- date : date

- season : season (1:springer, 2:summer, 3:fall, 4:winter)

- yr : year (0: 2011, 1:2012)

- mnth : month ( 1 to 12)

- hr : hour (0 to 23)

- holiday : whether day is holiday or not

- weekday : day of the week

- workingday : if day is neither weekend nor holiday is 1, otherwise is 0.

- weathersit :

- 1: Clear, Few clouds, Partly cloudy, Partly cloudy

- 2: Mist + Cloudy, Mist + Broken clouds, Mist + Few clouds, Mist

- 3: Light Snow, Light Rain + Thunderstorm + Scattered clouds, Light Rain + Scattered clouds

- 4: Heavy Rain + Ice Pallets + Thunderstorm + Mist, Snow + Fog

- temp : Normalized temperature in Celsius. The values are divided to 41 (max)

- atemp: Normalized feeling temperature in Celsius. The values are divided to 50 (max)

- hum: Normalized humidity. The values are divided to 100 (max)

- windspeed: Normalized wind speed. The values are divided to 67 (max)

- cnt: count of total ambulance calls