Bike sharing

overview

Bike sharing systems are a means of renting bicycles where the process of obtaining membership, rental, and bike return is automated via a network of kiosk locations throughout a city. Using these systems, people are able rent a bike from a one location and return it to a different place on an as-needed basis. Currently, there are over 500 bike-sharing programs around the world.

The data generated by these systems makes them attractive for researchers because the duration of travel, departure location, arrival location, and time elapsed is explicitly recorded. Bike sharing systems therefore function as a sensor network, which can be used for studying mobility in a city. In this competition, participants are asked to combine historical usage patterns with weather data in order to forecast bike rental demand in the Capital Bikeshare program in Washington, D.C.

Tasks :

Regression : Predication of bike rental count hourly based on the environmental and seasonal settings

- Bike Rental Year's Highest season.

-Top demand hours for bikes.

- Humidity and Temperature Effect on Bike Rental.

Features detail

The dataset contains 17 attributes , 17389 instances

features	describe
instant	record index
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	weather day is holiday or not (extracted from
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

Features details

features	describe
weathersit	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
hum	Normalized humidity. The values are divided to 100 (max)
windspeed	Normalized wind speed. The values are divided to 67 (max)
casual	count of casual users
registered	count of registered users
cnt	count of total rental bikes including both casual and registered

Tools :

- Nnumpy
- Panndas
- Plotly
- Scikit-learn

Link data set:

https://archive.ics.uci.edu/ml/datasets/Bike+Sharing+Dataset

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