Coursera Capstone – "The Battle of the Neighborhoods"

Comparative analysis using location data via Foursquare

Problem Statement

In today's world, it is a headache for parents to decide which school is good for their children. It is very important for a child to have his/her education at a better place so that he/she should be influence by bad things nearby. The mission of this project is to use Foursquare location data and regional clustering of venue information to determine what might be the 'best' school in York for a child. My proposal, then, is an analysis of the neighborhoods of schools in York for the consideration of safe place for children. The objective is to evaluate the neighborhoods of schools and analyses whether there is any venue nearby which can be harmful for a child.

Data Overview

The data that we will use for this analysis is a combination of a CSV file that has been prepared for the purposes of the analysis from multiple sources (schoolslist.csv) and the location/venue information in foursquare. Schoolslist.csv has list of schools in York along with their latitude and longitude. Using foursquare APIs, we can get the details and category of the neighborhood venues and using this we can classify the schools whether it is safe or unsafe for a child using SVM linear classification algorithm

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In [193]: import pandas as pd
          import numpy as np
          df=pd.read_csv(r"C:\Users\UttamKumar\Desktop\course\coursera\schoolslist.csv")
          df.drop(['DfENumber', 'SchoolType' , 'SchoolPhase' , 'SchoolType' , 'Telephone' , 'Email' , 'WebsiteAddress' , 'AgeRange' , 'Nur
          df[['lat','log']] = df['Location'].str.split(',',expand=True)

          df.drop('Location', axis=1, inplace=True)

          df.dropna(subset= ['lat','log'], inplace=True)
          df['lat'] = pd.to_numeric(df['lat'])
          df['log'] = pd.to_numeric(df['log'])
          df.head()
```

Out[193]:

	SchoolName	Address	Postcode	lat	log
0	Acomb Primary School	West Bank, York	YO24 4ES	53.953270	-1.114962
1	All Saints Roman Catholic School	Nunnery Lane, York and Mill Mount Lane, York	YO23 1JG and YO24 1BJ	53.955075	-1.091037
2	Applefields School	Bad Bargain Lane, York	YO31 0LW	53.965099	-1.045976
3	Archbishop Holgate's Church of England School	Hull Road, York	YO10 5ZA	53.952866	-1.040225
4	Archbishop of York's CE Junior School	Copmanthorpe Lane, Bishopthorpe, York	YO23 2QT	53.920855	-1.101686