Assignment: The Battle of neighborhoods

Finding the right neighborhood in a new city

Introduction

When moving to a new city, for professional or personal reason, it can be quite hard to find a new neighborhood to settle in. In certain circumstances, it might be that you enjoy the neighborhood you are currently living in, but you have to move for professional reasons. Alternatively, you already found a nice neighborhood through recommendation but unfortunately, no housing options are available in that neighborhood at that moment. In these circumstances, it might be beneficial to find similar neighborhoods similar to the one you currently living in or you are interested in.

Business Problem

As indicated in the introduction, several scenarios can be thought of where it can be interesting to find neighbourhoods, in a certain city/location to a neighbourhood/location of choice. This problem can be tackled by analysing the distinct features attributed to a certain region, and compare these features with features from neighbourhoods in a target region of choice. A Content based recommendation algorithm would then be able to recommend similar neighbourhood. Such a setup could prove to be useful for real estate agents or big cities investing in attracting new citizens to help choosing a suitable neighbourhood. For this specific case we will compare my neighbourhood 'Lange Munte, 8500 Kortrijk, Belgium' with neighbourhoods in New York to recommend me similar neighbourhoods. The top 5 recommended neighbourhoods will be show in a map using Folium.

Data

Data from Foursquare will be used to solve the business problem. Venues relevant for the input and target neighbourhoods will be retrieved in order to build the recommender system. Coordinates for the 'Lange Munte' neighbourhood where I live are retrieved from Wikipedia (50°48'40"NB, 3°17'56"OL, https://nl.wikipedia.org/wiki/Lange_Munte_(Kortrijk)). New York has 306 neighbourhoods, latitude and longitude coordinate of each neighbourhood will be retrieved from https://geo.nyu.edu/catalog/nyu_2451_34572 and used to query Foursquare. As explained, venues from neighbourhoods will be retrieved from Foursquare and used to build a content based recommendation system as an example (for example, the proximity of schools, restaurants, parks can be an important feature). This application here could be extended to work with any region of choice.