

Capstone Project - The Battle of Neighborhoods

By

Sarathchandra kumar labala

1.Introduction

1.1 Scenario and Background:

I am planning to start a food truck in city of Toronto and I wanted to know in which areas the food is being supplied by different media and more venues are there other than food supplies. In that type of area, I can move my food truck with in the that area to make more business with less efforts to find a place to do food business.

1.2 Problem to be resolved:

How to find a neighborhood in Toronto with the following conditions to move food truck

- Food business is successful
- More venues along with restaurants
- Area with radius of 1km

1.3 Interested Audience:

I believe the methodology, tools and strategy used in this project is relevant for a person or entity considering moving to a major city in US, Europe or Asia. Europe, US or Asia, Likewise, it can be helpful approach to explore the opening of a new business. The use of FourSquare data and mapping techniques combined with data analysis will help resolve the key questions arisen. Lastly, this project is a good practical case for a person developing Data Science skills.

2. Data

2.1 Data Requirements:

- Data with postal codes and neighborhoods in the city of Toronto with latitude and longitude
- Nearby venues of the neighborhoods

2.2 Data Sources, Data Processing and Tools used:

- Postal codes with neighborhoods will be web scrapped from wiki page using beautifulsoup

'https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M'

- Latitude and longitude of the neighborhood will be collected from the following geospatial data http://cocl.us/Geospatial_data
- Nearby venues of the neighborhoods collected by using foursquare api.

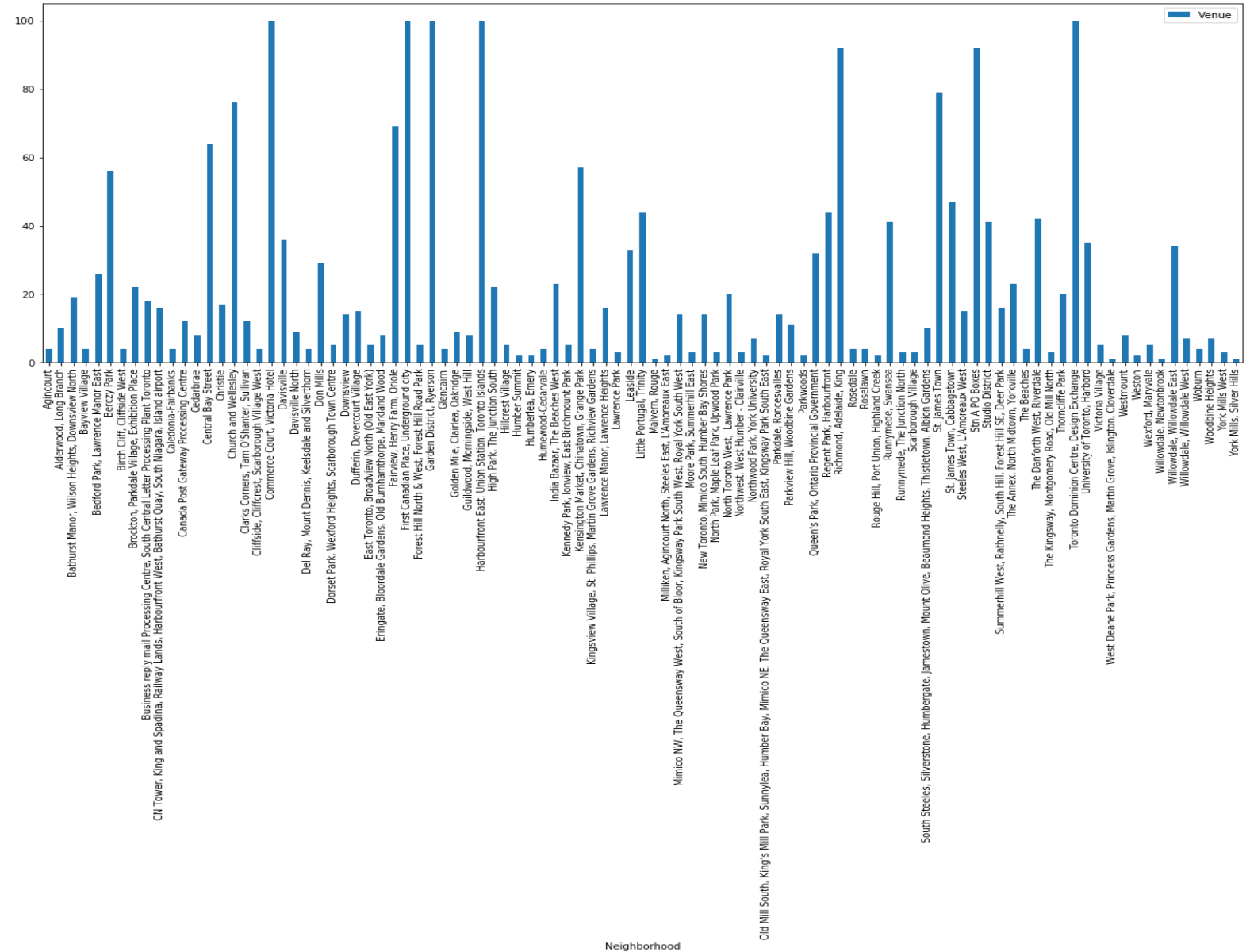
	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
1	Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
2	Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
3	Victoria Village	43.725882	-79.315572	Tim Hortons	43.725517	-79.313103	Coffee Shop
4	Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant

3.Methodology

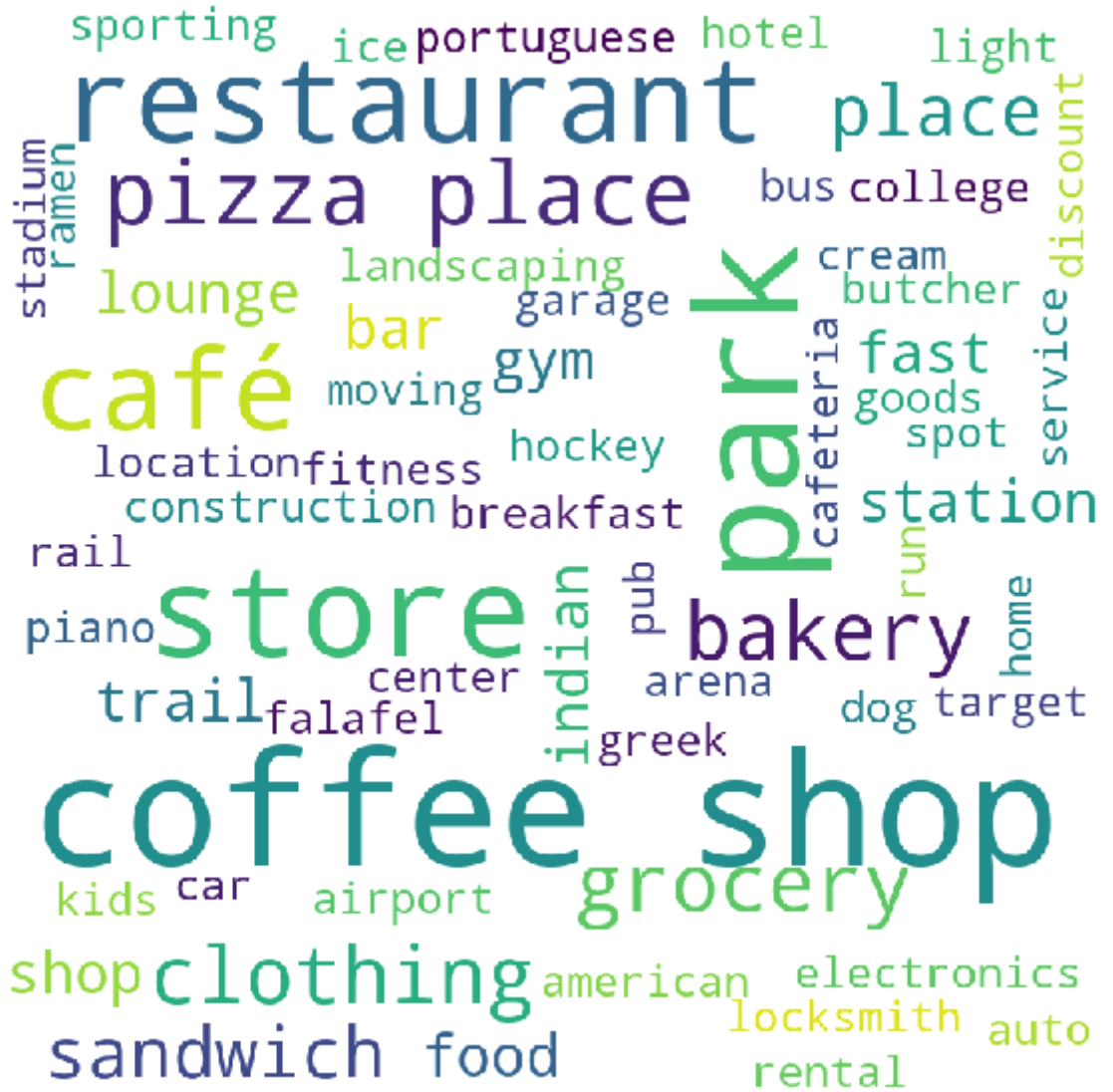
1. In first step we have collected the required data: location and venues with in 500m radius in toronto city . We have also identified venue category (according to Foursquare categorization).
2. Second step in our analysis will be calculation and exploration of 'venue freaquencies' across different areas of Toronto - we group the venues by their neighborhoods and finding most common venue type.
3. In third and final step we will focus on most promising areas and within those create clusters of locations that meet some basic requirements established: we will take into consideration locations with more number of venues and food as a most common one. We will present map of all such locations but also create clusters (using k-means clustering) of those locations to identify general zones / neighborhoods / addresses which should be a starting point for final borough exploration and search for optimal venue locations by stakeholders.

4. Analysis

- Nearby venues

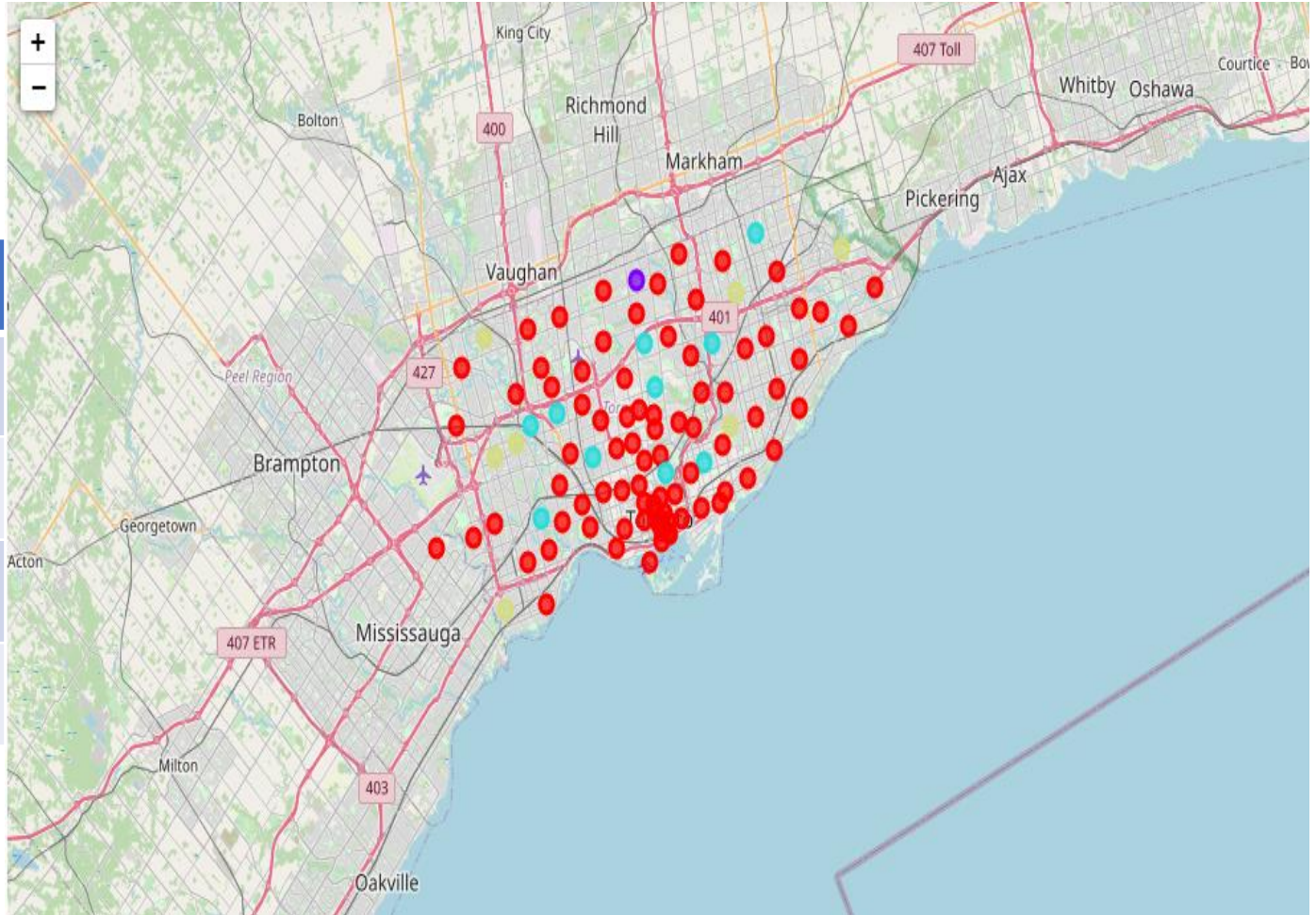


- Frequent venue types



- Clustering the neighborhoods

cluster	Number of eighborhoods	Most common venue type
Cluster 1	83	Portuguese Restaurant
Cluster 2	1	Piano Bar
Cluster 3	10	Park
Cluster 4	7	Fast Food Restaurant



5. Results and Discussion

10 boroughs in cluster 1

North York

Downtown Toronto

Etobicoke

Scarborough

East York

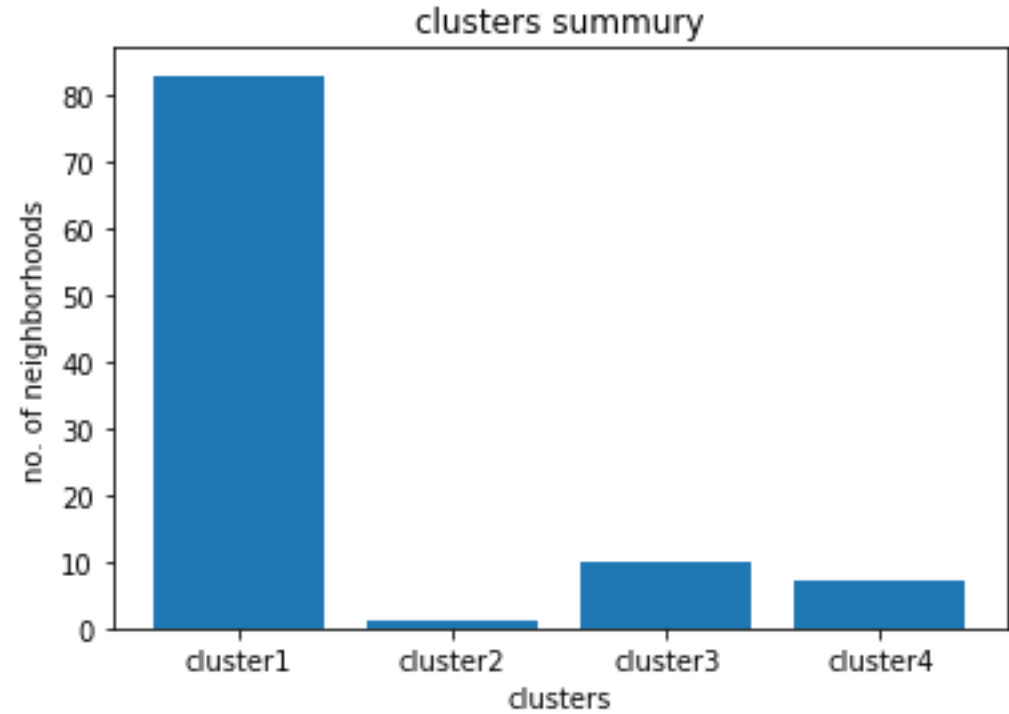
York

East Toronto

West Toronto

Central Toronto

Mississauga



6.conclusion

- our main goal is to find a neighborhood in Toronto where Food business is successful and More venues along with restaurants
- now we got 10 places where there are more number of venues as you can see in maps with limited radius and food is being most common so we can choose those places to move the food truck