

# Recommendation of best Boroughs and venues to start a restaurant business in Toronto

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## Introduction:

A description of the problem and a discussion of the background.

### 1 - Description of the problem:

People starting new businesses have different requirements and studies to conduct before launching their project. To start a restaurant, people need to find the right place. The definition of right place incorporate different aspects; places with high people density, not flooded with restaurant, and including other facilities that might lead people to think about food. For instance, malls, schools and companies incorporate people doing different activities, yet, all might need to have a meal at a certain point of their day. Doing, the proper research might help the business owner locate contender boroughs in a city where the business will have much more chances to succeed.

### 2- Business understanding:

Given the reality of the targeted business and its success requirements, Can we provide a short list of boroughs to help business owner decide where to start its business?

### 3 - Interested people:

This problem is very interesting for all the people deciding to start their own restaurant. This approach can be also adopted for other kind of business like gyms and entertainment services.

## Data section:

A description of the data and how it will be used to solve the problem

Data is the most important element of any data science project, almost 60% of relevancy of any machine learning model is related to the relevancy of the dataset and the different features it incorporates.

For our use case, the data needed can be summarized as follow:

- 1- For a targeted city, The boroughs and neighborhoods and their corresponding locations.
- 2- List of schools and companies for each borough and neighborhood.
- 3- List of entertainment venues for each borough and neighbors (Malls, Gyms, gaming rooms ...)
- 4- List of restaurants for each borough and neighborhood

Assuming the guy is willing to open a restaurant in Toronto, we will scrape the data of postal codes of the city of Toronto and get the location of the different boroughs, for each we will use the foursquare to explore the location and get different venues in it. Later, we will filter the venues to extract those that will help us in our analysis such as restaurants, stations, malls and other entertainment facilities that usually attract people.

Processing this data, will help us identify subset of boroughs where we have the most of facilities that might lead people to go and eat, this also should be tempered by the number of restaurant in the borough so that you don't open your business in a place already crowded with restaurants.

Data sources:

- 1 - Toronto PostCOde: [https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)
- 2 - Foursquare API

## Methodology section:

In this section we explain our methodology to build a recommendation list for a junior entrepreneur, who is trying to start a restaurant business and wants to locate the best neighborhoods and boroughs where the business have much more chances to succeed

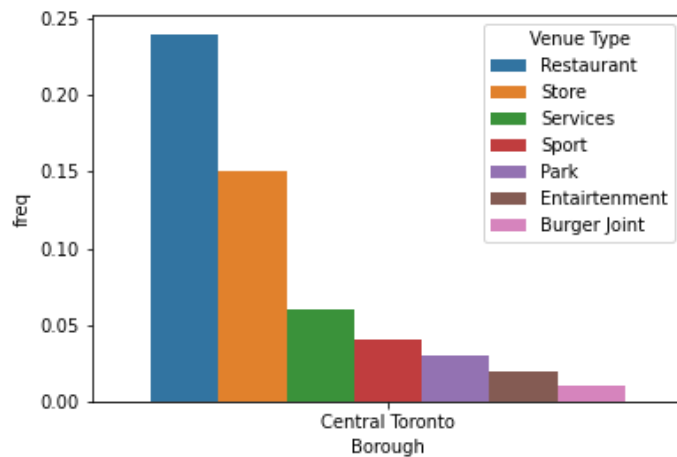
- 1 - Location of the targeted city and visualize using map and folium
- 2 - BeautifulSoup and scrap data related to borough and neighborhoods of the targeted city
- 3 - use open dataset to fetch the location of each neighborhood
- 4 - Foursquare to explore venues on each neighborhood
- 5 - Extract useful venues in neighbor e.g., restaurants, hotels, gyms, parks, stores
- 6 - Aggregate venues by boroughs and derive frequency to highlight the relevancy of the neighborhood
- 7-Aggregate the venues by type: For instance all restaurants regardless of the type will be named restaurants and all the stores and shops will be names stores and all the facilities for entertainment will be named entertainment.
- 7 - Derive subset of boroughs with the highest entertainment facilities and services and correlate that with high demand on food

8 – Go deeper and do the same study but this time for the most promising boroughs and per neighborhood to locate the best neighborhood to start a business.

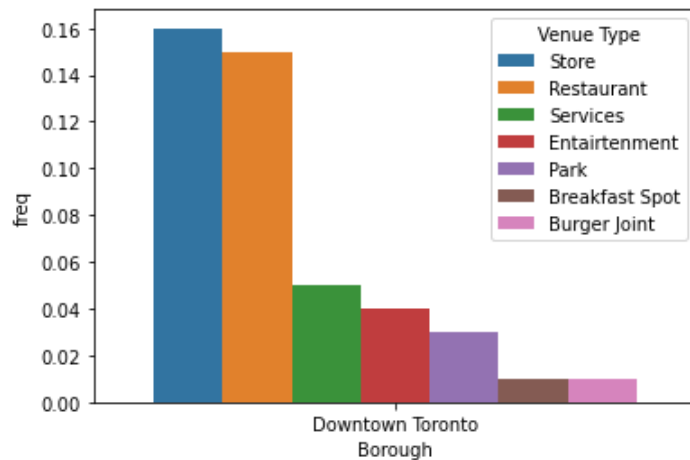
## Results section:

In this section we highlight the results of our study:

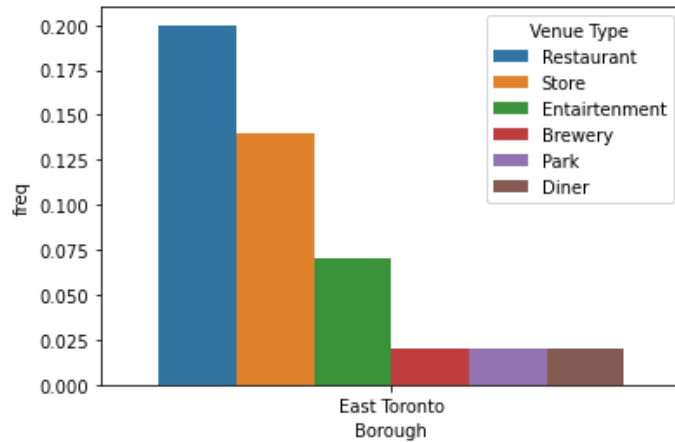
1-Lets start by the frequency of aggregated facilities per borough :



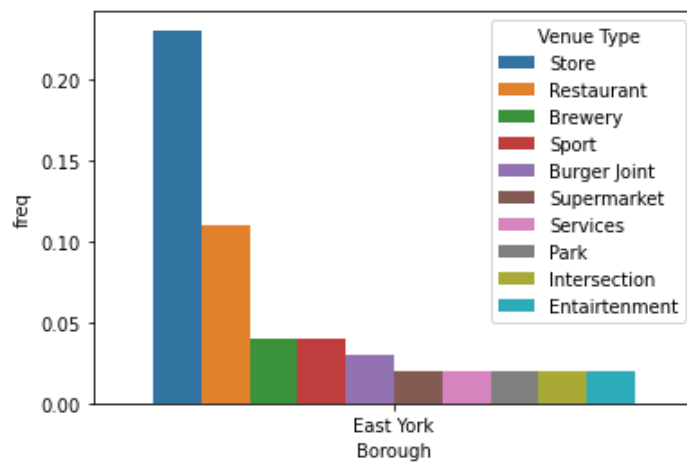
For Central Toronto, Restaurants have the highest frequency, followed by stores and services, which suggest the this borough has already to much restaurants compared to a low frequency of stores and services



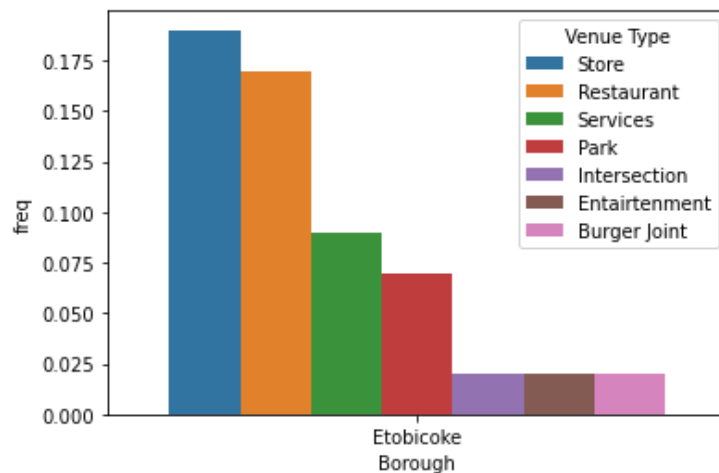
For Downtown Toronto, Stores have the highest frequency, followed by Restaurants and services, which suggest the this borough has a promising potential and will be less competitive



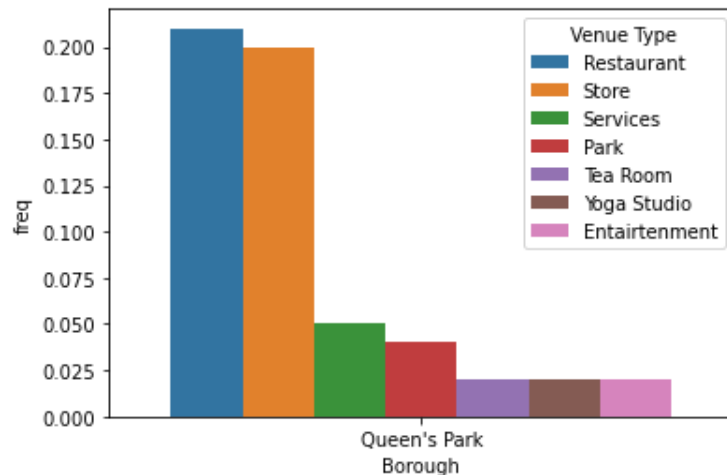
For East Toronto, Restaurants have the highest frequency, followed by stores and Entertainment. Entertainment facilities always attract more people and most of the time restaurant nearby benefit from that



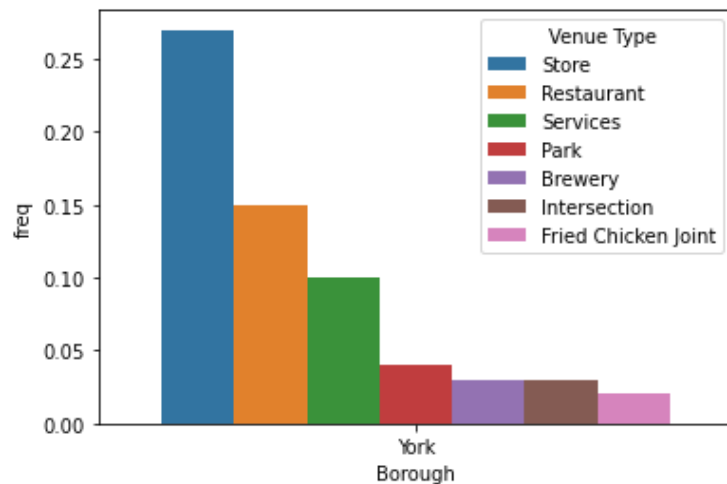
This one of the most promising borough, Stores have the most frequency and restaurants have almost half the frequency. This could be a potential borough to start a restaurant.



Another good Borough, where the restaurants frequency doesn't exceed the frequency of other venue types



Queen's park is an interesting borough, the frequencies of restaurant and stores are very close and it has park, which do attract a lot of people and families



York, the frequency of stores is around 0.25 and the frequency of restaurants is around 0.15. it has parks and other services facilities

Now we can say that the most promising boroughs are :

York

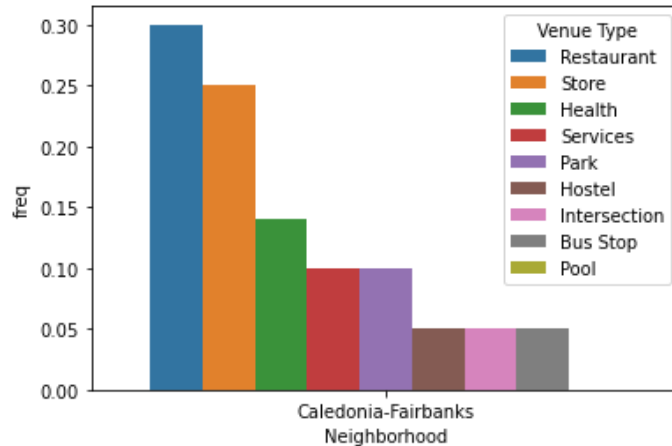
Etobicoke

East York

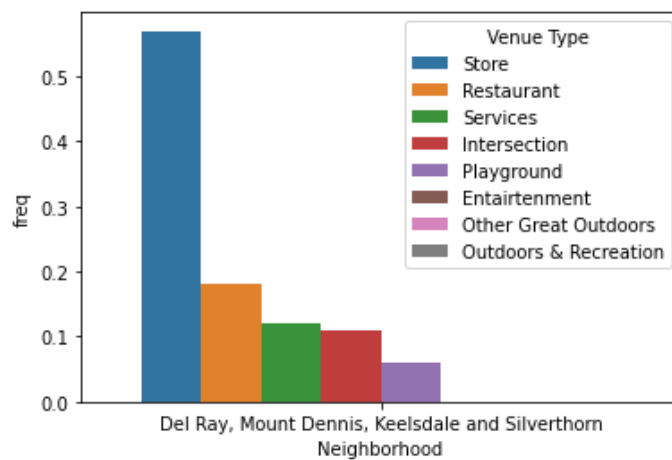
Downtown Toronto

2-Lets select one of them and try to derive the best neighborhood, we will redo the same study this time we narrow the stats to each neighborhood:

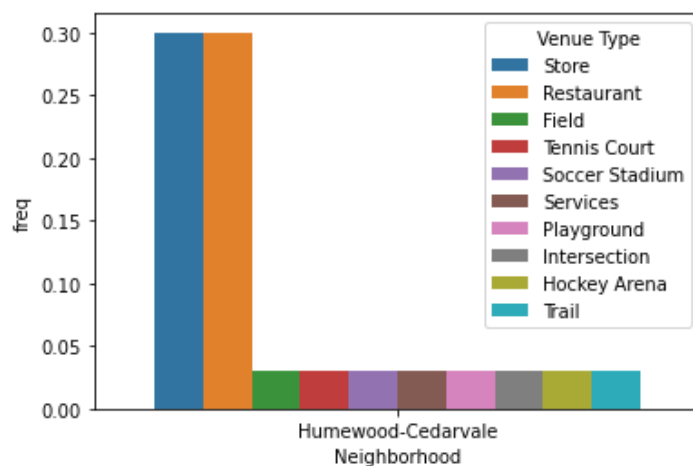
Most promising Neighborhood in York to start a restaurant business:



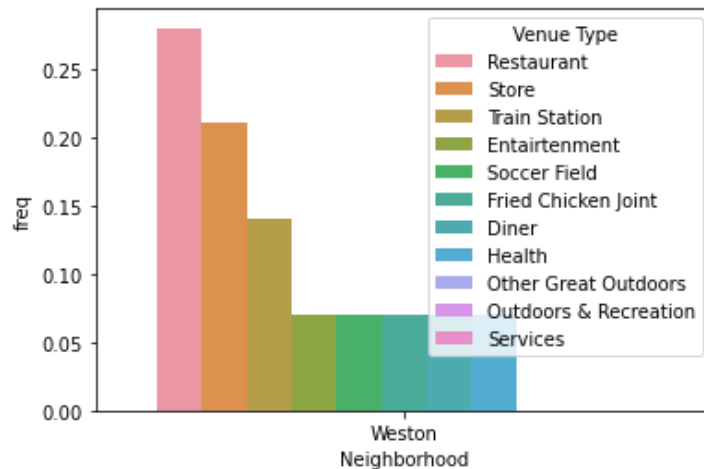
In the Caledonia-Fairbanks neighborhood, the frequency of restaurants is around 0.3, followed by stores with 0.25



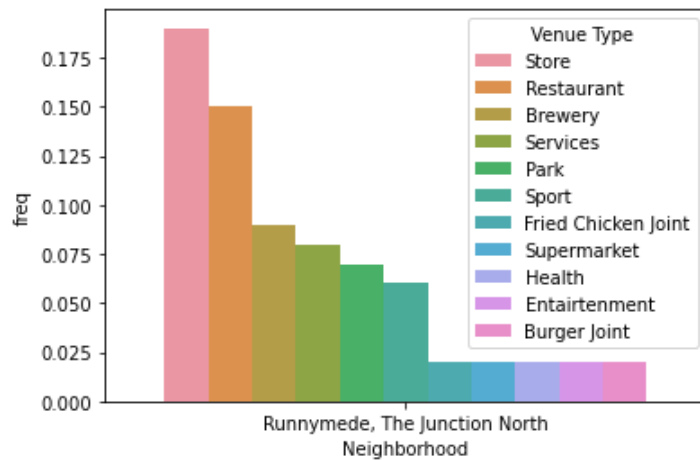
In Del ray neighborhood, the stores are almost half of the venues and restaurants have a frequency of 0.2. this is a very good neighborhood with multiple facilities attracting young people



In Humewood-Cedarvale neighborhood, Restaurants and stores have almost the same frequency. Moreover, this neighborhood have multiple sports facilities which is also a good sign and motivate the selection of this neighborhood



Weston, the restaurants are much more frequent than other facilities or services.



In Runnymede, the junction north is also a good place as the stores have a frequency of 0.17 and it includes parks and sport facilities

## Discussion section :

Overall, we noticed that different boroughs in Toronto have multiple facilities and venues, that look the same across all boroughs. However, the potential of each borough is different as some of them have less restaurant compared to other facilities: for instance, In York, the frequency of stores is around 0.25 and the frequency of restaurants is around 0.15. it also include parks and other services that usually attract a lot of people for shopping and other activities. Meanwhile, East York is another well promising borough as the Stores have the most frequency and restaurants have almost half the frequency. East York could be a potential borough to start a restaurant which will have much more chances to attract more people and don't suffer from high competition

On the other hand, if we dive deeper, we would like to know which neighborhood of these good contenders boroughs. In the examples above, we selected York and dived deeper into neighborhoods: In Humewood-Cedarville neighborhood, Restaurants and stores have almost the



same frequency. Moreover, this neighborhood have multiple sports facilities which is also a good sign and motivate the selection of this neighborhood. Moreover, In Del ray neighborhood, the stores are almost half of the venues and restaurants have a frequency of 0.2. this is a very good neighborhood with multiple facilities attracting young people.

## Conclusion section :

For a business man, starting a restaurant project in Toronto we would recommend the following boroughs:

York

Etobicoke

East York

Downtown Toronto

For a specific borough like York, we would recommend the following neighborhoods:

Runnymede, the junction north

Del rey, Mount dennis