Creating Travel Plans Based on Restaurant Recommendations

Daniel F. Moraes

August 06, 2020

1. INTRODUCTION

1.1 Background

Nowadays it is possible to find different types of tourism, for example, cultural tourism, rural tourism, sports tourism, among many others. Among these types of tourism you can also find gastronomic tourism, which consists of people traveling to certain places in search of experiencing different flavors and new cuisines.

1.2 Problem

Currently, people need to search the internet for reviews of reliable restaurants to define which restaurants they will do to in a certain city, in addition it is also necessary to create a complex travel plan that makes possible to go through all desired restaurants.

Some travel agencies already have gastronomic travel plans for those interested. However, not everyone relies on travel agencies when they plan their travels. To help these people, using the data that Foursquare offers, it is possible to help people plan their trips according to the best restaurants, pubs and coffee shops in the region. That way people could cut costs by booking rooms in hotels that are close to the best venues.

1.3 Interest

Travel agencies would also benefit from this solution. It is not just people looking for gastronomic tourism who are interested in eating well during trips. Having a pleasant gastronomic experience while traveling is a concern for many travelers, and this experience is reflected in reviews about trips and even reviews related to the agencies.

2. Data

2.1 Data sources

2.1.1 Toronto Data

The data that will be used in this project is from Foursquare. For the scope of this project I will use just Toronto data. The data about Toronto contains borough, neighborhood, postal code, latitude and longitude, as you can see in the following example.

	Postal Code	Borough	Neighbourhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.718518	-79.464763
4	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government	43.662301	-79.389494

Figure 1. Data about Toronto’s neighborhoods

2.1.2 Foursquare Data

The Foursquare data that will be used you can find the location of the venue, the name and the venue category. For the scope of this project I will just use restaurants and pubs, basically all places that serve food. An example of Foursquare data can be seen below.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Regent Park, Harbourfront	43.65426	-79.360636	Roselle Desserts	43.653447	-79.362017	Bakery
1	Regent Park, Harbourfront	43.65426	-79.360636	Tandem Coffee	43.653559	-79.361809	Coffee Shop
2	Regent Park, Harbourfront	43.65426	-79.360636	Cooper Koo Family YMCA	43.653249	-79.358008	Distribution Center
3	Regent Park, Harbourfront	43.65426	-79.360636	Body Blitz Spa East	43.654735	-79.359874	Spa
4	Regent Park, Harbourfront	43.65426	-79.360636	Impact Kitchen	43.656369	-79.356980	Restaurant

Figure 2. Data from Foursquare

2.2 Data cleaning

The data scraped for this project was not in perfect conditions to use. Postal codes with not assigned boroughs had to be removed. Not assigned neighborhoods were just replaced for their borough. Different neighborhoods with the same postal code were grouped together.

As for the Foursquare data, most of the data were already cleaned and structured. Just a few steps to join this data with data from other datasets and structuring them were necessary.

3. Methodology

3.1 Exploratory Data Analysis

Taking the data of Toronto, we can see that the best rated restaurants are near each other and close to the downtown area.

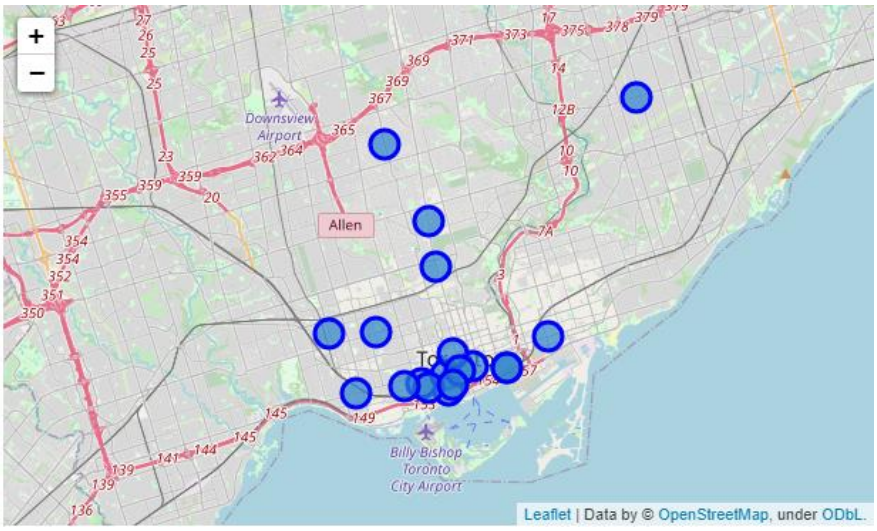

Figure 3. Map that shows the location of the top 20 best rated restaurants in Toronto.

So, if you are planning a trip to Toronto you might as well know the best five neighborhoods, in terms of proximity of the best restaurants. This proximity value is not just distance, but it also is related with the rating retrieved from Foursquare. Every restaurant has a weight based on their ratings and price. This weight is then used to calculate the best neighborhoods.

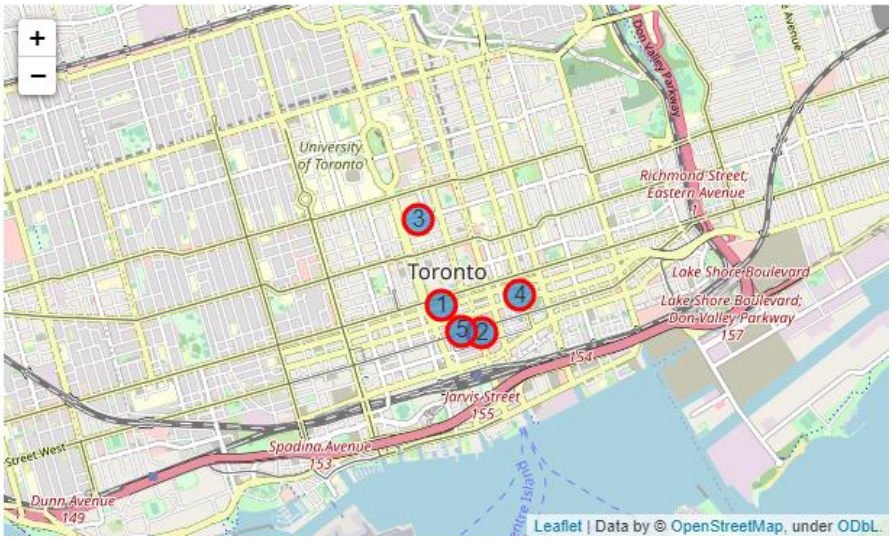

Figure 4. Map that shows the location of the top 5 best neighborhoods in Toronto., based on restaurants.

And if knowing the best neighborhoods is not enough, using the Foursquare to get the best hotels nearby those areas you will find those:

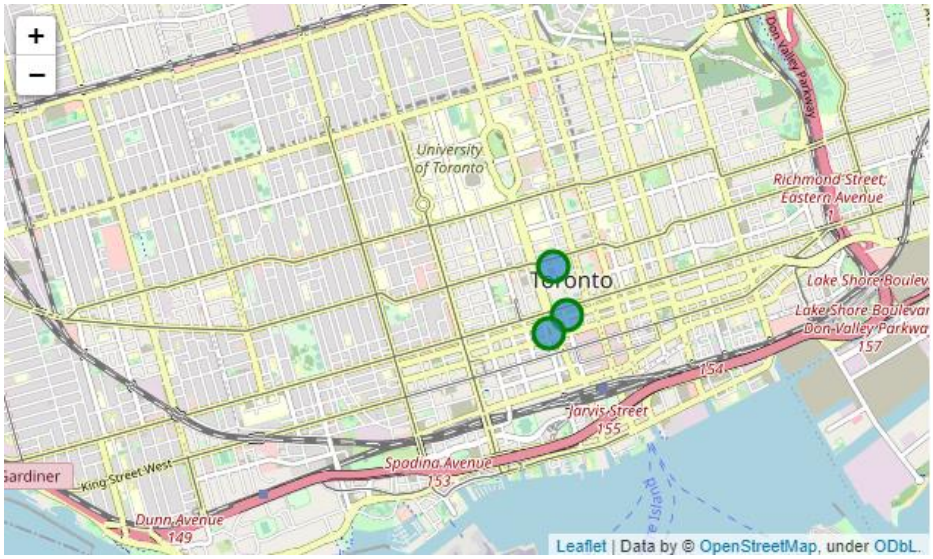

Figure 5. Map showing three good hotels near the neighborhoods in Figure 4.

4. Results

The results are based on the rating of the people that frequented the restaurants and hotels in the area. If you are not looking for a particular cosine and just want to eat in good places, those places are the best to stay according to the data analysis.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Rating
0	Richmond, Adelaide, King	43.6506	-79.3846	17.3
1	Commerce Court, Victoria Hotel	43.6482	-79.3798	16.8
2	Central Bay Street	43.658	-79.3874	16.1
3	St. James Town	43.6515	-79.3754	8.5
4	First Canadian Place, Underground city	43.6484	-79.3823	8.3

Figure 6. Data about the best restaurants.

Looking at the data above you can see that the first three areas have almost twice the rating of the other two neighborhoods. I already mentioned in the methodology how this rating is calculated, it is not scaled, but this does not affect the results.

5. Discussion

A fun fact to point out is that looking at Figure 4 you can see that the fifth neighborhood is really close to the first and second. However, this neighborhood is mainly underground and the venues next to it are different.

6. Conclusions

In this study I realized some exploratory analysis to find the best neighborhoods to stay based on the restaurants nearby, and their ratings. This process can be easily automated and generalized for other cities.

Many people are influenced by the food that they eat while they are travelling, and this influence their decisions while rating trips. A person planning a trip can find the information acquired in this study really interesting.