

# Capstone Project - The Battle of Neighborhoods

Michael Cheng

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## 1. Introduction

### Background

For most people, coffee is essential to start the day. Many people will enjoy a cup of coffee for works or study, while Toronto is Canada's busiest business hub.

### Business Problem

This project explores which neighborhoods of Toronto have the most coffee shop. Additionally, I will attempt to answer the questions "Where should I open a coffee shop to succeed?"

### Target Audience

The target audience of this analysis are the business personnel who wants to invest or open a coffee shop. This analysis will be a guide to start or expand restaurants targeting tourists and lovers of coffee.

## 2. Data

In order to answer the above questions, data on Toronto neighborhoods including geocoordinates and information related to poutine restaurants.

The neighborhood data is not readily available on the internet. We will first scrape the following Wikipedia page,

[https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M), and then include the geocoordinates of each neighborhood by downloading the geographical coordinates of each postal from [http://cocl.us/Geospatial\\_data](http://cocl.us/Geospatial_data).

All data related to locations and quality of coffee shops will be obtained via the FourSquare API utilized via the Request library in Python.

### 3. Methodology

Data is first wrapped from the Wikipedia page using a library called BeautifulSoup. The data wrapped is then preprocessed to drop the Postal Code with unassigned borough and add geographical coordinates of the neighborhoods to the dataset.

After exploring the dataset, coffee shops locations are extracted from FourSquare API to find out the density of coffee shops in Toronto.

### 4. Results

The number of coffee shops in Downtown Toronto significantly higher than those in other boroughs.

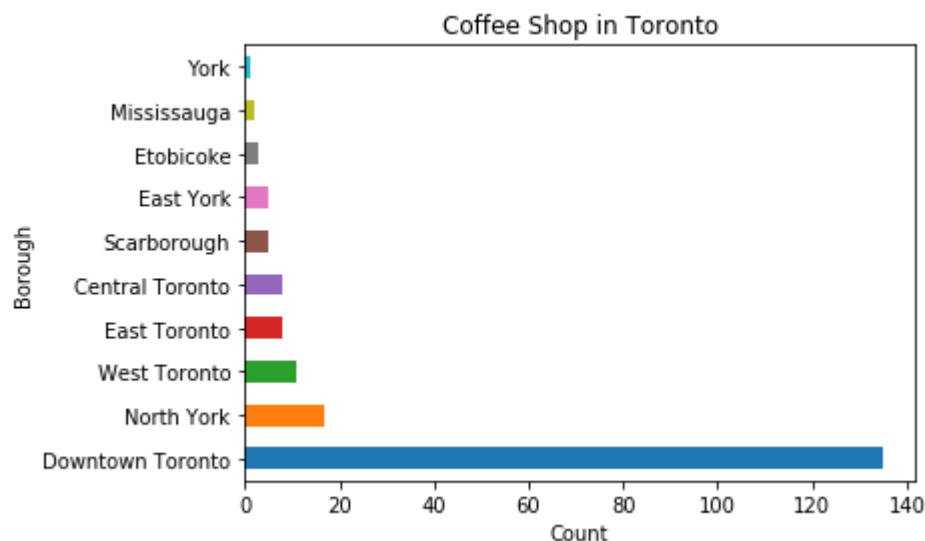


Figure 1. Coffee Shops in Toronto per Borough.

To focus on the Downtown Toronto area, the number of coffee shops in the neighborhoods is investigated.

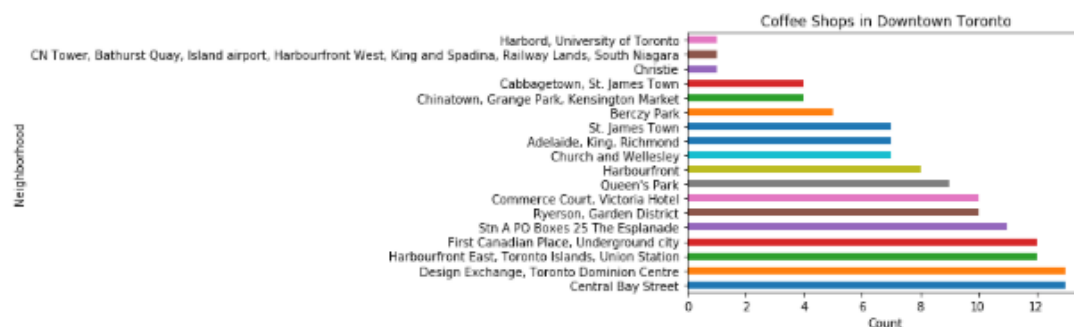


Figure 2. Coffee Shops in Downtown Toronto per Neighborhood

To visualize the data, a heat map is created to show the density of coffee shops in Toronto.

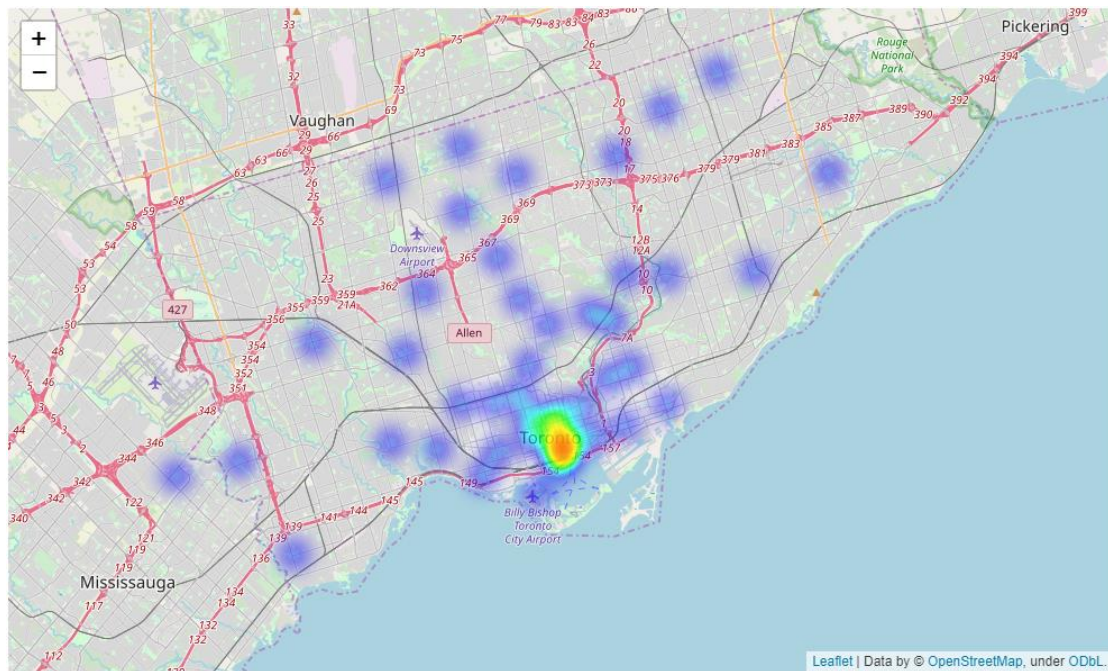


Figure 3. Heat map of Coffee Shops in Toronto

To make it clear with the density of different boroughs, another map is created.



Figure 4. Map of Coffee Shops in Toronto by Borough

## **5. Discussion**

Most of the coffee shops in Toronto are located in the borough of Downtown Toronto. The borough with the second-most number of coffee shops is North York. Yet, the number of coffee shops in North York is 8 times less than that in Downtown Toronto. North York has only 17 coffee shops, while Downtown Toronto has more than 130. It is believed that Downtown Toronto area is the financial hub, and many companies have their offices located in the area. Hence, the number coffee shops in the area is significantly higher than other areas. Due to the huge competition, Downtown Toronto would not be the best choice if starting/expanding a coffee shop business.

Base on the analysis above and the Census of Population of Canada in 2016, the best place to start/expand a coffee shop business is in Scarborough (the orange area). Scarborough has limited number of coffee shops, yet the second largest number of populations in the borough included in this study.

If Downtown Toronto is the desired place to start/expand the coffee shop business, it is recommended to choose those neighborhoods with limited number of coffee shops to avoid fierce competition. It is also recommended to design themes / gimmicks to attract businessman and students in Downtown Toronto areas to succeed in the competition.

## **6. Conclusion**

Borough of Scarborough is the best place to start/expand a coffee shop business due to the large customer base and limited competition.

Future studies can be conducted to include the pricing of a shop to evaluate the most economical location.