

TOP RESTAURANTS TO TARGET FOR DELIVERY SERVICES IN TORONTO

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1. INTRODUCTION

1.1 Problem Statement:

With the ongoing fight to limit the spread of COVID-19 virus, a lot of restaurants are either closed or operating a take-out service. Furthermore, COVID-19 has impacted the Canadian economy by increasing unemployment rates while businesses in various sectors are closed until further notice. In this tough period, it would be great if Torontonians can have access to their favourite restaurants with delivery services like UBER Eats, FOODORA, DoorDash, and etc.

If we can determine top restaurants in Toronto by FourSquare API and we can provide insights as to 1) which restaurants Torontonians love the most, 2) which restaurants should be linked to a delivery service, and 3) which restaurants should the delivery service providers target to strengthen their services.

1.2 Client Base:

- a. Restaurants in Toronto - Make an attempt to keep small and medium business owners in Toronto alive.
- b. Food Delivery Services in Toronto - Determining which restaurants are popular by users and partnering with those restaurants to provide a delivery service, it will only make the life of Torontonians much better.
- c. People in Toronto - People need to eat to survive and there is no such thing as a free lunch. Might as well pay for a meal that is highly rated and delicious!

1.3. Analytic Approach

For achieving the grouping as stated in the problem statement, I can make use of k-means clustering. K-means clustering is a type of unsupervised learning, which is used when you have unlabeled data (i.e., data without defined categories or groups). The goal of this algorithm is to find groups in the data, with the number of groups represented by the variable K. The algorithm works iteratively to assign each data point to one of K groups based on the features that are provided.

I will be using k-means clustering to group neighborhoods in Toronto and find out top 10 venues in each neighborhood.

2. DATA

2.1 Data Requirements:

- a. Neighborhood data of Toronto ([Wikipedia](#))
- b. FourSquare API for location data of each neighborhood in Toronto

2.2. Data Collection:

- a. Web scrap Neighborhood data of Toronto ([Wikipedia](#)) using Beautiful Soup python library to map Toronto neighborhoods by Postal Code and Borough.
- b. Obtain latitude and longitude of each postal code by using 'https://cocl.us/Geospatial_data'.
- c. Use foursquare API calls to get the location details corresponding to each neighborhood:

create the API request URL

url =

```
'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&ll={},{}&radius={}&limit={}'.format(
    CLIENT_ID,
    CLIENT_SECRET,
    VERSION,
    lat,
    lng,
    radius,
    LIMIT)
```

make the GET request

```
results = requests.get(url).json()["response"]["groups"][0]["items"]
```