
Where Is Jet's New Restaurant

A study by John Leung

Who is Jet?

A young American Chinese Chef

He moved to LA six months ago hoping to open his own restaurant

He was disappointed by all the different well established restaurants everywhere in the Chinese neighborhoods



DATA SCIENTIST



Who am I?

Someone from the East Coast

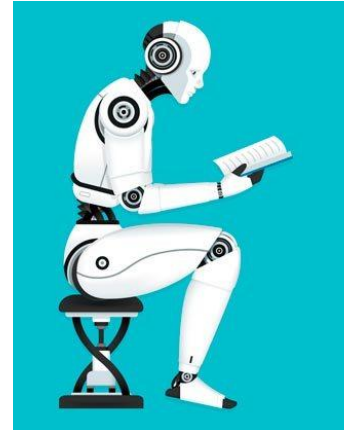
Someone suggested him to start his new restaurant in the City of New York or the City of Toronto

Knows a little bit of Machine Learning technique

Use Machine Learning to find the right location for Jet's Restaurant

We do:

- Collecting Data
- Applying Machine Learning technique
- Performing Data Analysis
- Result Discussion





Data

City of Toronto

→ Data Source

[https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M.](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)

City of New York

→ Data Source

NYU Spatial Data Repository provided by NYU
DataServices

Foursquare

Foursquare's global venue database provides information for millions of global venues and details such as photos, tips, and reviews. The database was created based on the information generated from more than 12 billion check-ins by Foursquare community members.

FOURSQUARE

Neighbourhood with Chinese Restaurant in First 4 Most Common Venues

Neighbourhood

Chinese Restaurant

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue
Bayview Village	Café	Japanese Restaurant	Bank	Chinese Restaurant
Chinatown	Chinese Restaurant	American Restaurant	Cocktail Bar	Hotpot Restaurant
Dorset Park	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant
L'Amoreaux West	Fast Food Restaurant	Chinese Restaurant	Burger Joint	Pharmacy
Scarborough Town Centre	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant
Wexford Heights	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant

Data on each Neighbourhood from Foursquare is grouped and ranked

A scatter plot with a y-axis ranging from -0.4 to 0.6. The plot contains numerous grey data points. Three distinct clusters are highlighted: a green cluster in the upper-left quadrant, a blue cluster in the upper-right quadrant, and a cyan cluster in the lower-middle area. The word 'Clustering' is written in large, bold, black font over the green cluster.


Clustering

Clustering is a Machine Learning technique that involves the grouping of data points to get an intuition about the structure of the data. In theory, data points that are in the same group should have similar properties and/or features. K-mean clustering algorithm, a common exploratory data analysis technique was used to group the neighbourhoods into clusters in this study.

Neighbourhoods with Similar Properties

Neighbourhood

Cluster



Neighbourhood	Cluster Labels
Chinatown	0
Bayview Village	1
L'Amoreaux West	1
Dorset Park	3
Scarborough Town Centre	3
Wexford Heights	3

Number of Cluster = 5

Frequency of occurrence of the four Most Common Venues

Chinatown	
Venue	Frequency
Chinese Restaurant	0.11
American Restaurant	0.04
Cocktail Bar	0.04
Hotpot Restaurant	0.03
Bakery	0.03

L'Amoreaux West	
Venue	Frequency
Chinese Restaurant	0.14
Grocery Store	0.14
Fast Food Restaurant	0.14
Discount Store	0.07
Thrift / Vintage Store	0.07

Scarborough Town Centre	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Bayview Village	
Venue	Frequency
Japanese Restaurant	0.25
Café	0.25
Bank	0.25
Chinese Restaurant	0.25
Accessories Store	0.00

Wexford Heights	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Dorset Park	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Cluster 0

Chinatown	
Venue	Frequency
Chinese Restaurant	0.11
American Restaurant	0.04
Cocktail Bar	0.04
Hotpot Restaurant	0.03
Bakery	0.03

To investigate the neighbourhood data quantitatively.

<i>Neighborhood</i>	<i>1st Most Common Venue</i>	<i>2nd Most Common Venue</i>	<i>3rd Most Common Venue</i>	<i>4th Most Common Venue</i>
Bayview Village	Caf��	Japanese Restaurant	Bank	Chinese Restaurant
Chinatown	Chinese Restaurant	American Restaurant	Cocktail Bar	Hotpot Restaurant
Dorset Park	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant
L'Amoreaux West	Fast Food Restaurant	Chinese Restaurant	Burger Joint	Pharmacy
Scarborough Town Centre	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant
Wexford Heights	Indian Restaurant	Vietnamese Restaurant	Pet Store	Chinese Restaurant

Locations with many Chinese restaurants:
Manhattan Chinatown in NYC, Bayview Village, Dorset Park, L'Amoreaux West, Scarborough Town Centre, and Wexford Heights in Toronto.

Table

Neighbourhood with Chinese Restaurant in First 4 Most Common Venues

Neighbourhood	Cluster Labels
Chinatown	0
Bayview Village	1
L'Amoreaux West	1
Dorset Park	3
Scarborough Town Centre	3
Wexford Heights	3

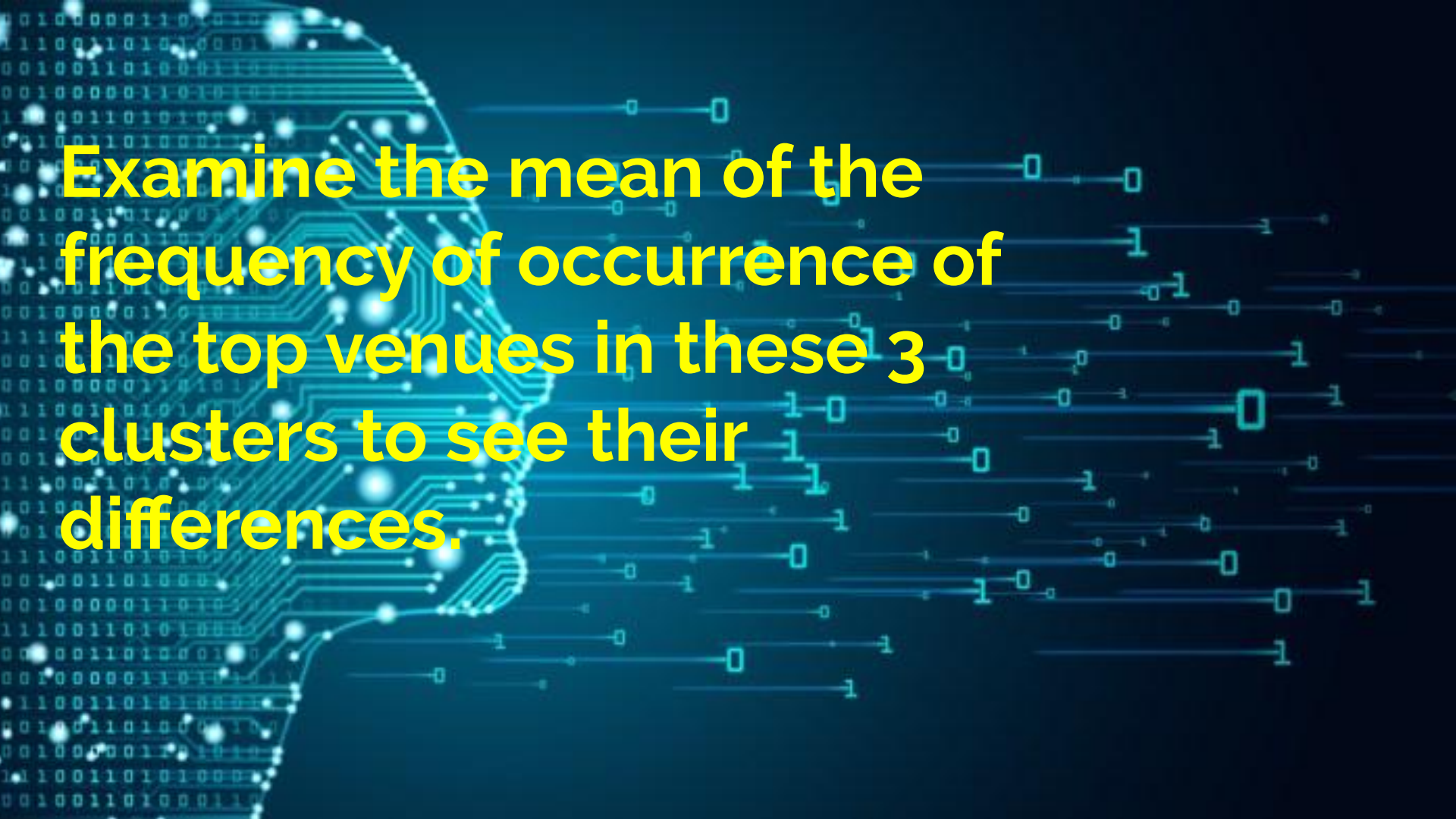
5 Clusters down to 3
Clusters

Manhattan Chinatown in Cluster 0
Bayview Village, L'Amoreaux West in
Cluster 1
Dorset Park, Scarborough Town Centre,
and Wexford Heights in Cluster 3



Table

Neighbourhoods with
Similar Properties



Examine the mean of the frequency of occurrence of the top venues in these 3 clusters to see their differences.

Cluster 0

Chinatown	
Venue	Frequency
Chinese Restaurant	0.11
American Restaurant	0.04
Cocktail Bar	0.04
Hotpot Restaurant	0.03
Bakery	0.03

Manhattan Chinatown

There are a wide variety of restaurants in the area not just Chinese restaurants. Customers go there for different tastes the restaurants have to offer. They can have Chinese, American, Hotpot or snacks like bakery food etc. The impression on the area data is that the location is an area where eating is the only thing that matters to the people.

Cluster 1

L'Amoreaux West	
Venue	Frequency
Chinese Restaurant	0.14
Grocery Store	0.14
Fast Food Restaurant	0.14
Discount Store	0.07
Thrift / Vintage Store	0.07

Cluster 1

Bayview Village	
Venue	Frequency
Japanese Restaurant	0.25
Café	0.25
Bank	0.25
Chinese Restaurant	0.25
Accessories Store	0.00

Bayview Village, L'Amoreaux West

There is a high proportion of Chinese restaurants in the area and there are other Asian restaurants as well. The balance of the most common venues are banks and stores. The Cluster represents average neighbourhood with a well balance between residential and commercial venues. Bayview Village and L'Amoreaux West are most likely be the kind of neighbourhood you and I live in now.

Cluster 3

Scarborough Town Centre	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Cluster 3

Wexford Heights	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Cluster 3

Dorset Park	
Venue	Frequency
Indian Restaurant	0.4
Chinese Restaurant	0.2
Vietnamese Restaurant	0.2
Pet Store	0.2
Mobile Phone Shop	0.0

Dorset Park, Scarborough Town Centre, and Wexford Heights

The restaurant selection is very Asian oriented: Chinese, Indian, and Vietnamese. There is not much of a variety of restaurants to choose from for food lovers. But this could mean neighbourhoods in this Cluster are densely populated with Asians. The food being served in these restaurants could be the authentic kind that suit the locals need. It will be interesting to study the demographics of Dorset Park, Scarborough Town Centre and Wexford Heights to see how this analysis on restaurant relates to the neighbours.

Who is Jet?

A young American Chinese Chef

His passion is in creating his own fusion Chinese dishes

He loves to stay within Chinese neighborhood





A fusion Chinese restaurant in Dorset Park or Scarborough Town Centre or Wexford Heights seems out of the question

People love the authenticity of the dishes in these neighbourhoods.

His version of fusion dishes is not the same kind as the fusion Chinese dishes that immigrants love before they moved out of their home countries.



The business atmosphere in New York Chinatown is too intense for new restaurant with new Chef

New York Chinatown is the largest Chinatown in the US.

Over 150,000 Chinese-speaking people call this place their home.

About 14.6 million tourists had visited lower Manhattan in 2018 where Chinatown is.



Either Bayview Village or L'Amoreaux West is the best choice

These locations are like training ground for new Chef with more interactions between him and his customers to find out if a particular dish needs improvement.

The business atmosphere is less intense than the other neighbourhoods.

Customers don't need authentic dishes to satisfy their tastes.

Who is Jet?

A young American Chinese Chef

Will open his first fusion Chinese restaurant in either Bayview Village or L'Amoreaux West in Toronto

Will ask you about his dishes when you visit his restaurant

Will work hard to open his second restaurant in New York Chinatown





Thankyou!