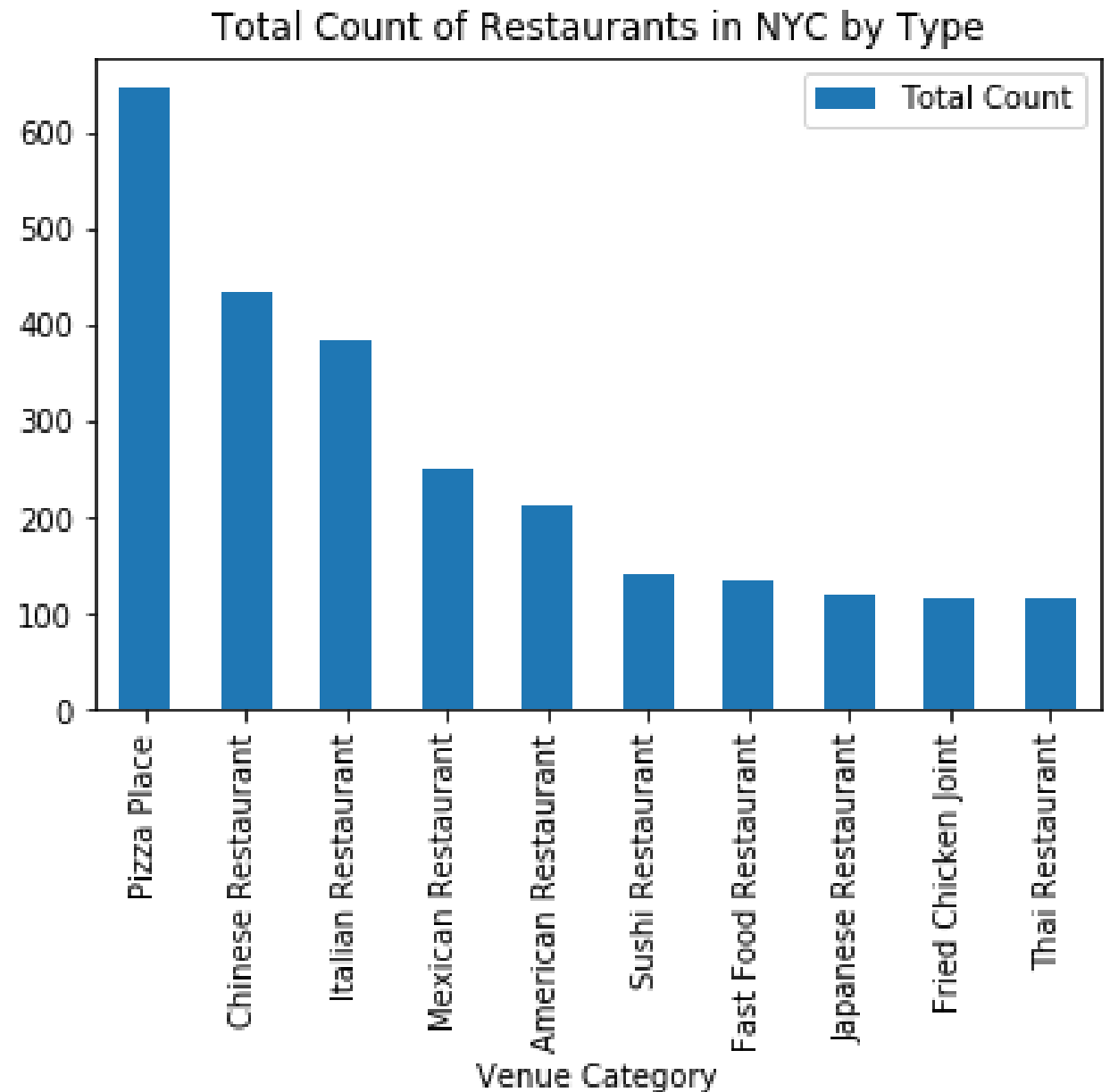# THE WORLD CUISINE OF NEW YORK

Qi Luo

The diversity of New York in cuisine

- New York is one of the most diverse cities in the world, which is reflected in its cuisine

- The accessibility of cuisines from all over the world is a big attraction for a city, both for residents and tourists.

- Understand the food preference of New Yorkers will offer insight and recommendation
  - For someone wants to find a neighborhood in New York to live in, based on his/her cuisine preference;
  - For someone wants to open a restaurant in any location in New York.

Data acquisition and cleaning

◦ The New York city neighborhoods dataset is taken from the course material.

◦ Type and location of restaurants in every neighborhood will be obtained using Foursquare API.

◦ Generic restaurant categories, for example, 'Restaurant', 'Food' were omitted.

◦ The restaurant categories that has a total count lower than 5 were omitted.

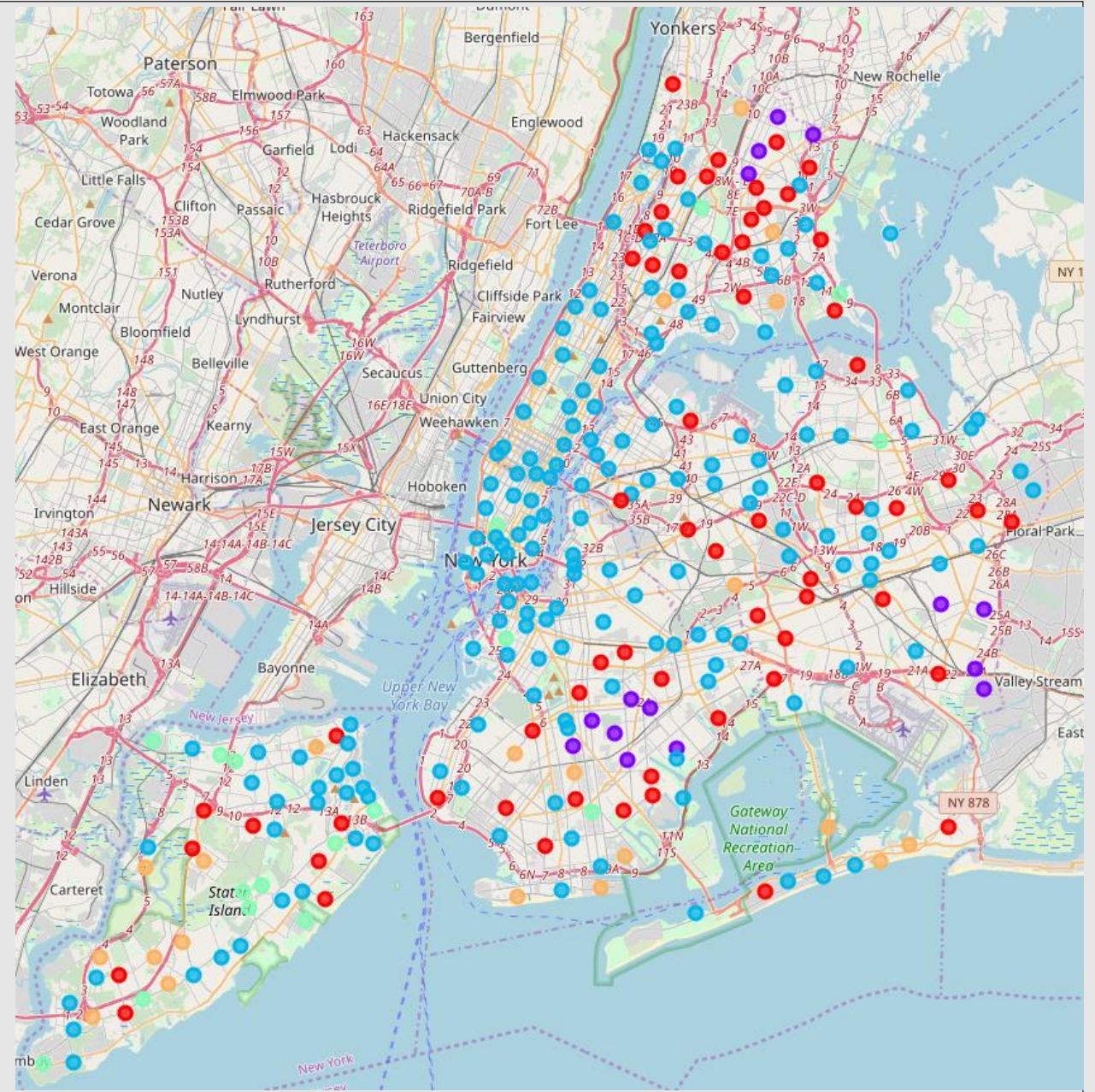◦ Neighborhoods that has a venue count lower than 25 were omitted.

Overview of New York Restaurants

Total Count of Restaurants in NYC by Type

New York neighborhoods clustered by cuisine

K-mean clustering, k=5

Red:0, purple: 1, blue: 2,
cyan: 3, orange: 4

The clusters

‘Chinese or Pizza? That is the question.’

Number of neighborhoods in cluster 0: 63

Venue Category	Count per neighborhood
Chinese Restaurant	2.730159
Pizza Place	2.444444
Italian Restaurant	0.714286
Mexican Restaurant	0.460317
Fried Chicken Joint	0.412698
Spanish Restaurant	0.396825
Sushi Restaurant	0.333333
American Restaurant	0.317460
Japanese Restaurant	0.269841
Fast Food Restaurant	0.238095

‘To the high sea and beyond’

Number of neighborhoods in cluster 1: 15

Venue Category	Count per neighborhood
Caribbean Restaurant	2.733333
Chinese Restaurant	1.133333
Fast Food Restaurant	0.666667
Pizza Place	0.533333
Fried Chicken Joint	0.533333
Seafood Restaurant	0.266667
Mexican Restaurant	0.200000
Southern / Soul Food Restaurant	0.133333
Asian Restaurant	0.133333
Breakfast Spot	0.133333

The clusters

'Universal love'

Number of neighborhoods in cluster 2: 171	
	Count per neighborhood
Venue Category	
Pizza Place	2.350877
Italian Restaurant	1.538012
Chinese Restaurant	1.356725
Mexican Restaurant	1.251462
American Restaurant	1.023392
Sushi Restaurant	0.666667
Thai Restaurant	0.614035
Fast Food Restaurant	0.590643
Japanese Restaurant	0.573099
Latin American Restaurant	0.573099

'Italian / Pizza till the end of the world'

Number of neighborhoods in cluster 3: 17	
	Count per neighborhood
Venue Category	
Italian Restaurant	4.470588
Pizza Place	1.294118
American Restaurant	0.529412
Chinese Restaurant	0.352941
French Restaurant	0.352941
Sushi Restaurant	0.294118
Seafood Restaurant	0.235294
Fast Food Restaurant	0.235294
Greek Restaurant	0.235294
Thai Restaurant	0.176471

Number of neighborhoods in cluster 4: 21	
	Count per neighborhood
Venue Category	
Pizza Place	2.857143
American Restaurant	0.380952
Chinese Restaurant	0.285714
Spanish Restaurant	0.190476
Fast Food Restaurant	0.190476
Seafood Restaurant	0.095238
Burger Joint	0.095238
Caribbean Restaurant	0.095238
Fried Chicken Joint	0.095238
Italian Restaurant	0.095238

Conclusion

- Pizza place is the most prevalent in New York, which you can find in almost every neighborhood. It is followed by Chinese, Italian, and Mexican restaurants.
- K-mean clustering was applied to identify the cuisine distribution.
- Distinctive preference on cuisines in different clusters, there are pizza, Chinese, or Italian loving neighborhoods, etc.