



The Battle of Neighborhoods

XIAOJUN GE

Introduction and background of NYC

- ▶ Background

- ▶ One of most densely populated and competitive city
- ▶ Italian families immigrated into USA in late 19th and 20th century

- ▶ Target

- ▶ Explore boroughs, neighborhoods of NYC
- ▶ Explore Italian restaurants in NYC



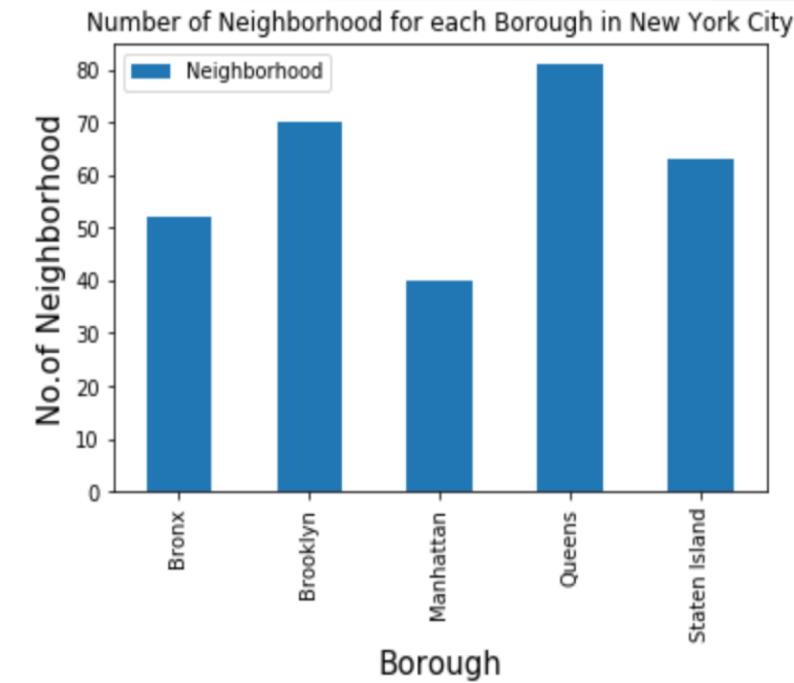
Data acquisition

- ▶ Basic background & information of NYC
 - ▶ https://en.wikipedia.org/wiki/New_York_City
- ▶ Neighborhoods and Borough dataset
 - ▶ https://geo.nyu.edu/catalog/nyu_2451_34572
- ▶ Dataset in json format
 - ▶ https://cocl.us/new_york_dataset
- ▶ Foursquare API
 - ▶ <https://developer.foursquare.com/>

Exploratory data analysis - NYC

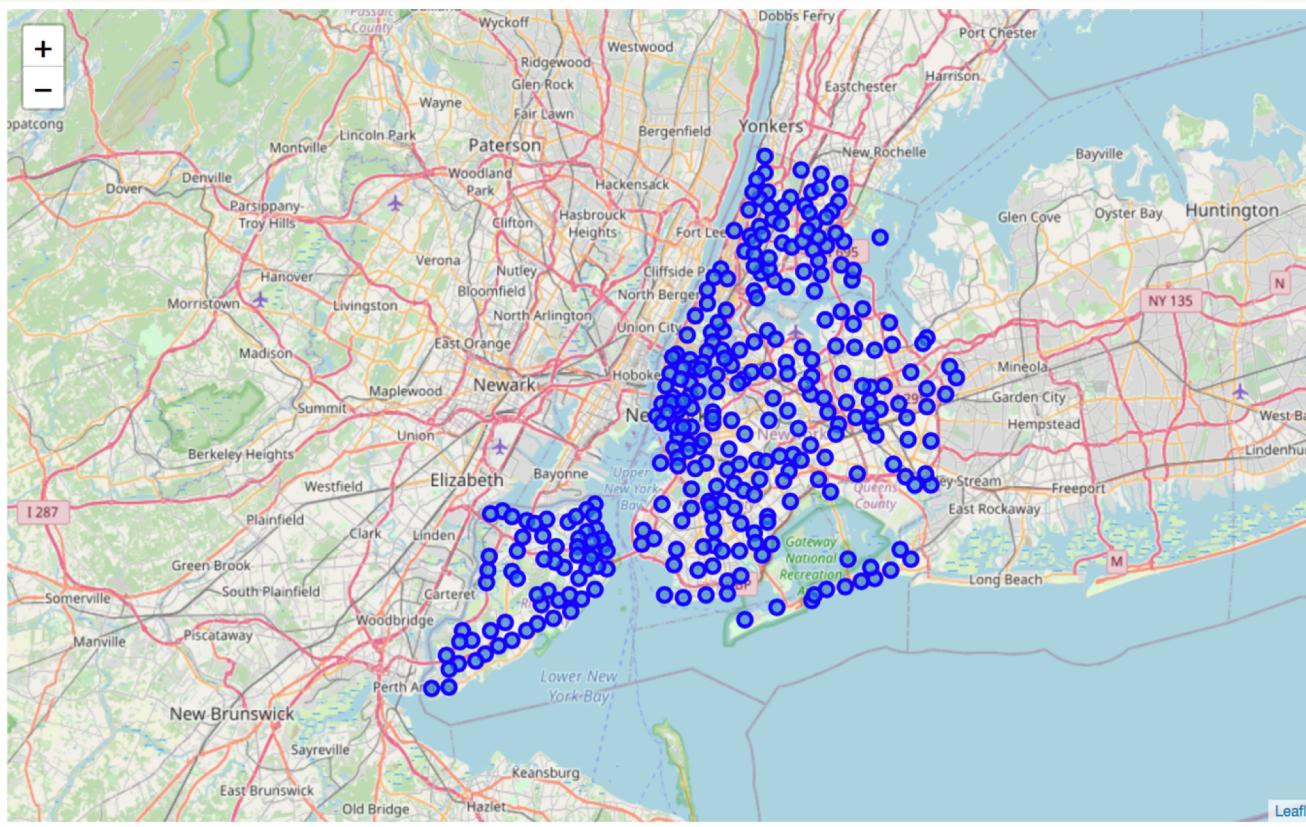
► Neighborhood information in NYC

Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705 -73.847201
1	Bronx	Co-op City	40.874294 -73.829939
2	Bronx	Eastchester	40.887556 -73.827806
3	Bronx	Fieldston	40.895437 -73.905643
4	Bronx	Riverdale	40.890834 -73.912585



Exploratory data analysis - NYC

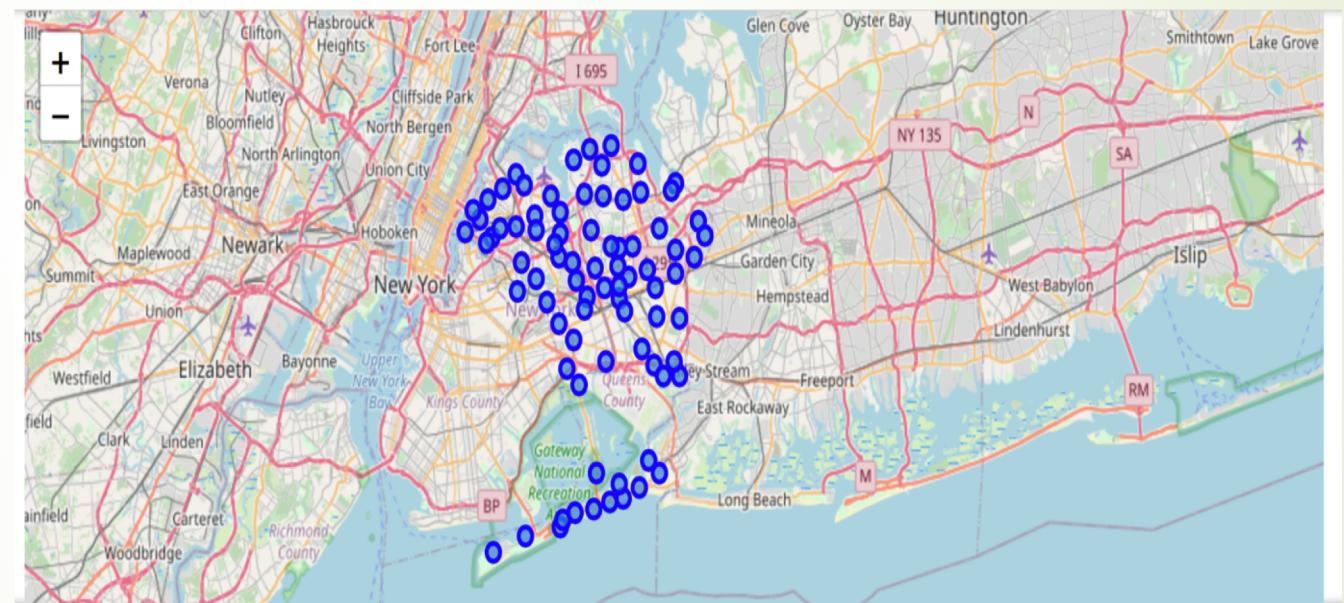
► Geo-location of NYC



Exploratory data analysis – Queens(NYC)

► Neighborhoods and geo-location of Queens

Borough	Neighborhood	Latitude	Longitude	
0	Queens	Astoria	40.768509	-73.915654
1	Queens	Woodside	40.746349	-73.901842
2	Queens	Jackson Heights	40.751981	-73.882821
3	Queens	Elmhurst	40.744049	-73.881656
4	Queens	Howard Beach	40.654225	-73.838138



Exploratory data analysis – Queens(NYC)

- ▶ Name and geo-location of Queens neighborhoods

```
0      Astoria
1      Woodside
2  Jackson Heights
3      Elmhurst
4      Howard Beach
5      Corona
Name: Neighborhood, dtype: object
```

Latitude and longitude values of Astoria are 40.76850859335492, -73.91565374304234.
Latitude and longitude values of Woodside are 40.74634908860222, -73.90184166838284.
Latitude and longitude values of Jackson Heights are 40.75198138007367, -73.88282109164365.
Latitude and longitude values of Elmhurst are 40.744048505122024, -73.88165622288388.
Latitude and longitude values of Howard Beach are 40.65422527738487, -73.8381376460028.

Exploratory data analysis – Queens(NYC)

► Venue information of Queens

	name	categories	lat	lng
0	Lenny's Clam Bar	Seafood Restaurant	40.655749	-73.839004
1	Brothers Ravioli	Italian Restaurant	40.655282	-73.838991
2	Old Country Bagel	Bagel Shop	40.653484	-73.838576
3	Prima Pasta & Cafe	Italian Restaurant	40.654385	-73.839093
4	Carvel Ice Cream	Ice Cream Shop	40.652120	-73.838437

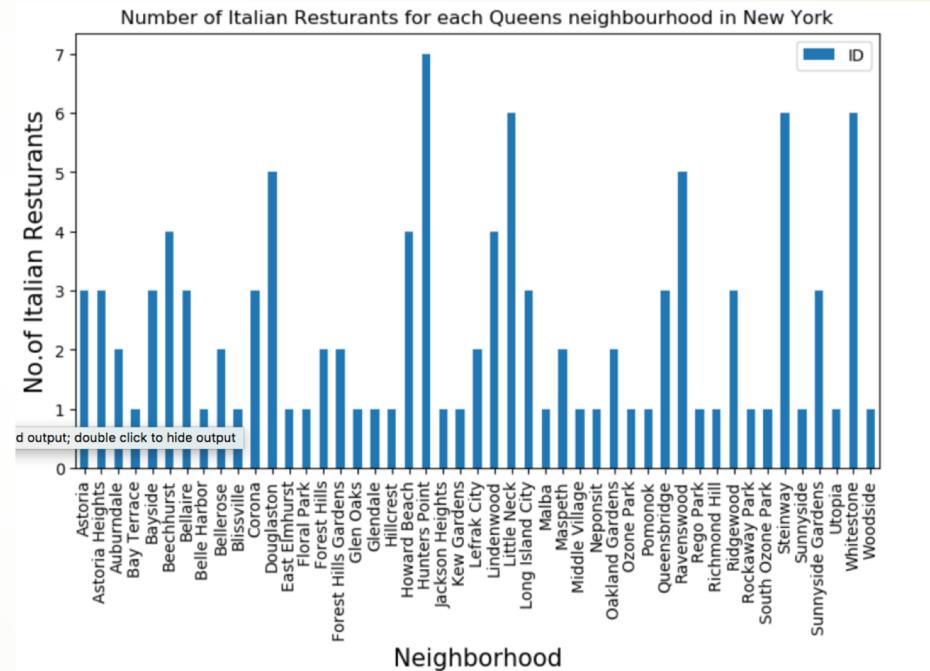
Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Neighborhood						
Arverne	35	35	35	35	35	35
Astoria	100	100	100	100	100	100
Astoria Heights	76	76	76	76	76	76
Auburndale	100	100	100	100	100	100
Bay Terrace	63	63	63	63	63	63
Bayside	100	100	100	100	100	100
Bayswater	7	7	7	7	7	7
Beechhurst	47	47	47	47	47	47
Bellaire	56	56	56	56	56	56
Belle Harbor	21	21	21	21	21	21

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0 Astoria	40.768509	-73.915654	Favela Grill	40.767348	-73.917897	Brazilian Restaurant
1 Astoria	40.768509	-73.915654	Titan Foods Inc.	40.769198	-73.919253	Gourmet Shop
2 Astoria	40.768509	-73.915654	CrossFit Queens	40.769404	-73.918977	Gym
3 Astoria	40.768509	-73.915654	Simply Fit Astoria	40.769114	-73.912403	Gym
4 Astoria	40.768509	-73.915654	Al-sham Sweets and Pastries	40.768077	-73.911561	Middle Eastern Restaurant

Exploratory data analysis – Queens Neighborhoods

► Italian restaurant in Queens neighborhoods

```
Italian Restaurants in Astoria, Queens:3
Italian Restaurants in Woodside, Queens:1
Italian Restaurants in Jackson Heights, Queens:1
Italian Restaurants in Elmhurst, Queens:0
Italian Restaurants in Howard Beach, Queens:4
Italian Restaurants in Corona, Queens:3
Italian Restaurants in Forest Hills, Queens:2
Italian Restaurants in Kew Gardens, Queens:1
Italian Restaurants in Richmond Hill, Queens:1
Italian Restaurants in Flushing, Queens:0
Italian Restaurants in Long Island City, Queens:3
Italian Restaurants in Sunnyside, Queens:1
Italian Restaurants in East Elmhurst, Queens:1
Italian Restaurants in Maspeth, Queens:2
Italian Restaurants in Ridgewood, Queens:3
Italian Restaurants in Glendale, Queens:1
Italian Restaurants in Rego Park, Queens:1
Italian Restaurants in Woodhaven, Queens:0
Italian Restaurants in Ozone Park, Queens:1
Italian Restaurants in South Ozone Park, Queens:1
Italian Restaurants in College Point, Queens:0
Italian Restaurants in Whitestone, Queens:6
Italian Restaurants in Bayside, Queens:3
Italian Restaurants in Auburndale, Queens:2
Italian Restaurants in Little Neck, Queens:6
Italian Restaurants in Douglaston, Queens:5
Italian Restaurants in Glen Oaks, Queens:1
Italian Restaurants in Bellerose, Queens:2
```



Exploratory data analysis – Queens(Hunters Point)

- ▶ Italian restaurant in Queens neighborhoods – Hunters Point

	Borough	Neighborhood	ID	Name
94	Queens	Hunters Point	463220f3f964a520fb451fe3	Manetta's Ristorante
95	Queens	Hunters Point	4a1a3f6df964a5208b7a1fe3	Bella Via
96	Queens	Hunters Point	49f5bf5ef964a520b46b1fe3	Manducatis Rustica
97	Queens	Hunters Point	556fb3b4498e61f524e70951	Maiella
98	Queens	Hunters Point	4f74ff83e4b09b101271b89b	Manducatis
99	Queens	Hunters Point	53ed8f36498ea1eca81563c1	Il Falco
100	Queens	Hunters Point	540a3547498e9b339b6431ae	Le Fanfare

Exploratory data analysis – Italian Restaurant

► Italian restaurant in Queens neighborhoods

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
0	Queens	Astoria	5010b169e4b05edd9983ec7d	Antika Restaurant & Pizzeria	72	8.2	31
1	Queens	Astoria	4ebf0e380aaaf6450ba608920	Via Trenta	57	7.7	28
2	Queens	Astoria	53a60a88498ef405d8a78217	VITE vinosteria	106	8.8	30
3	Queens	Woodside	4bc11e07920eb713d6491a2c	Donato's Restaurant	23	7.2	9
4	Queens	Jackson Heights	4a82d6adf964a5206ff91fe3	Uncle Peter's	42	8.9	11
5	Queens	Howard Beach	4bae3bd0f964a52009963be3	Brothers Ravioli	10	8.1	2
6	Queens	Howard Beach	4bafdb5df964a52086263ce3	Prima Pasta & Cafe	35	7.7	17
7	Queens	Howard Beach	4e6409451495676d566f10b5	Bruno Ristorante Italiano	29	8.7	7
8	Queens	Howard Beach	4ba148f5f964a5201da937e3	Roma View Catering	16	7.0	3
9	Queens	Corona	4b808501f964a5207b7930e3	Park Side	187	8.7	78
10	Queens	Corona	4ea2fc90cc2102b34d3d8dc7	Il Triangolo Ristorante	35	8.6	26
11	Queens	Corona	0	0	0	0.0	0
12	Queens	Forest Hills	4c8d2ce6f87e224fb6d3b05	Tuscan Hills	46	8.0	15
13	Queens	Forest Hills	4ba0203af964a520105c37e3	Portofino Ristorante	58	7.6	38
14	Queens	Kew Gardens	4c93eb6a72dd224be41d9591	Paul Michael Brick Oven Cafe	16	7.1	14
15	Queens	Richmond Hill	4c93eb6a72dd224be41d9591	Paul Michael Brick Oven Cafe	16	7.1	14
16	Queens	Long Island City	5aa41faf178a2a08410ce198	Beebe's	53	8.6	11
17	Queens	Long Island City	53ed8f36498ea1eca81563c1	Il Falco	38	8.3	15

```
Borough          object
Neighborhood     object
ID              object
Name            object
Likes           object
Rating          float64
Tips            object
dtype: object
```

Exploratory data analysis – Italian Restaurant

► Most **LIKES** Italian restaurant

```
Borough          Queens
Neighborhood     Corona
ID              4b808501f964a5207b7930e3
Name
Likes           187
Rating          8.7
Tips            78
Name: 9, dtype: object
```

► Highest **RATING** Italian restaurant

```
Borough          Queens
Neighborhood     Sunnyside
ID              555d29f7498eb6112f44ecac
Name
Likes           119
Rating          9.1
Tips            26
Name: 19, dtype: object
```

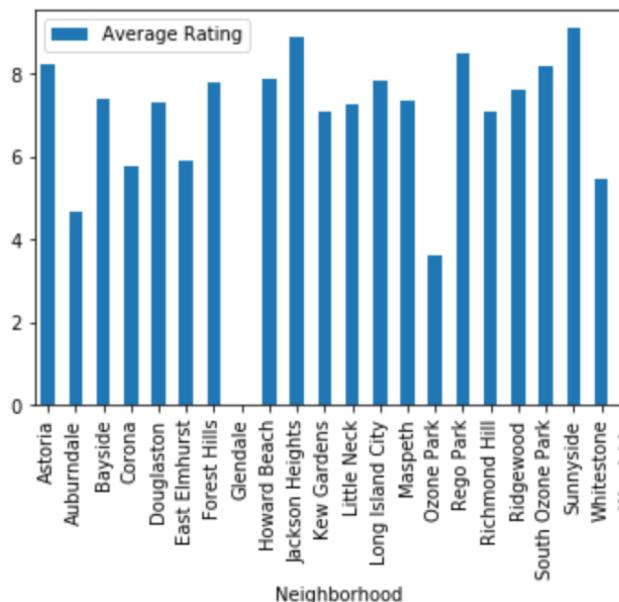
► Most **TIPS** Italian restaurant

```
Borough          Queens
Neighborhood     Corona
ID              4b808501f964a5207b7930e3
Name
Likes           187
Rating          8.7
Tips            78
Name: 9, dtype: object
```

Exploratory data analysis – Italian Restaurant

- ▶ Average rating of Italian restaurant in Queens

	Neighborhood	Average Rating
19	Sunnyside	9.100000
9	Jackson Heights	8.900000
15	Rego Park	8.500000
0	Astoria	8.233333
18	South Ozone Park	8.200000
8	Howard Beach	7.875000
12	Long Island City	7.833333
6	Forest Hills	7.800000
17	Ridgewood	7.633333
2	Bayside	7.400000



	Neighborhood	Average Rating
9	Jackson Heights	8.9
15	Rego Park	8.5
19	Sunnyside	9.1

Conclusion

- ▶ Queens has the most neighbourhoods among all 5 borough in New York City.
- ▶ Hunters Point has the most Italian restaurant in Queens.
- ▶ Park Side - Corona is the one which has the most LIKES by customers in Queens.
- ▶ SoleLuna - Sunnyside has the highest RATING by customers in Queens.
- ▶ Park Side - Corona has the most TIPS by customers in Queens.
- ▶ Overall in Queens, Sunnyside has the highest average rating regards of Italian restaurants.