

New York Pizza restaurant market analysis

New pizza restaurant in NYC

- ▶ A Pizza restaurant located in Naples wants to expand its business internationally and it is considering NYC as its first foreign investment.
- ▶ It is crucial to choose its location carefully. However, the investor has any idea about NYC Pizza competition and where the main peers are located in the city.
- ▶ It would be useful to know the venues distribution in the city and cluster all the pizza restaurants to find the best neighborhood to open the new one.

Collect and cleaning NYC Neighborhood dataset

- ▶ To find and cluster NYC's pizza venues, first I will use a dataset that contains crucial NYC data, such as Boroughs, Neighborhoods, Latitude and Longitude of the latest one.
- ▶ A json file is well suited on IBM cloud site, https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork_data.json
- ▶ The file was transformed in a more functional pandas dataframe

New York City Neighborhoods

!]:

	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
5	Bronx	Kingsbridge	40.881687	-73.902818
6	Manhattan	Marble Hill	40.876551	-73.910660
7	Bronx	Woodlawn	40.898273	-73.867315
8	Bronx	Norwood	40.877224	-73.879391
9	Bronx	Williamsbridge	40.881039	-73.857446



Collect all
venues in NYC

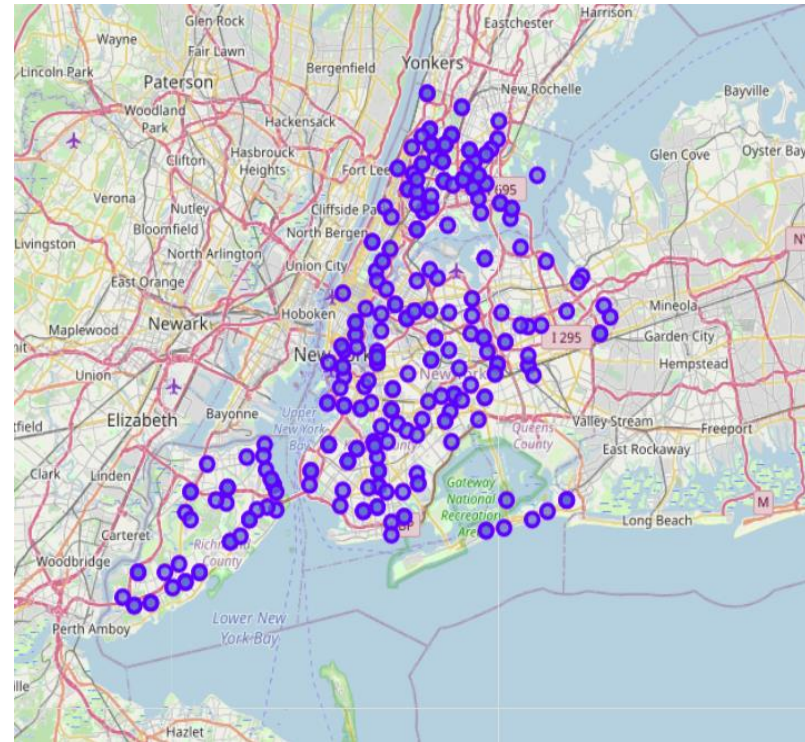


FourSquare is an excellent software to retrieve venues from a city

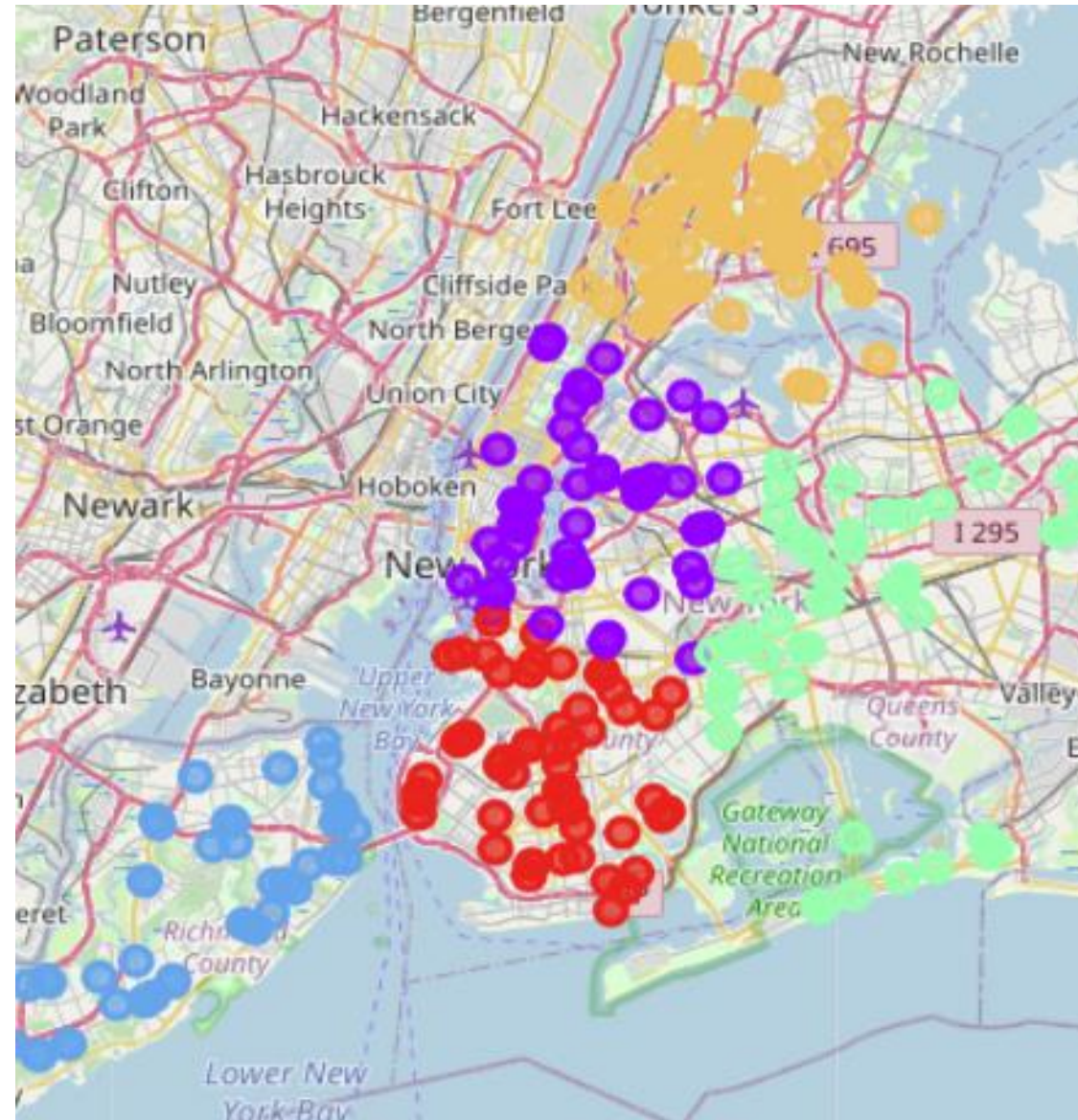
	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Wakefield	40.894705	-73.847201	Lollipops Gelato	40.894123	-73.845892	Dessert Shop
1	Wakefield	40.894705	-73.847201	Walgreens	40.896528	-73.844700	Pharmacy
2	Wakefield	40.894705	-73.847201	Carvel Ice Cream	40.890487	-73.848568	Ice Cream Shop
3	Wakefield	40.894705	-73.847201	Rite Aid	40.896649	-73.844846	Pharmacy
4	Wakefield	40.894705	-73.847201	Dunkin'	40.890459	-73.849089	Donut Shop
5	Wakefield	40.894705	-73.847201	Subway	40.890468	-73.849152	Sandwich Place
6	Wakefield	40.894705	-73.847201	Pitman Deli	40.896744	-73.844398	Food
7	Wakefield	40.894705	-73.847201	Koss Quick Wash	40.891281	-73.849904	Laundromat
8	Co-op City	40.874294	-73.829939	Rite Aid	40.870345	-73.828302	Pharmacy
9	Co-op City	40.874294	-73.829939	Capri II Pizza	40.876374	-73.829940	Pizza Place
10	Co-op City	40.874294	-73.829939	Dollar Tree	40.870125	-73.828989	Discount Store
11	Co-op City	40.874294	-73.829939	United States Postal Service	40.876545	-73.828978	Post Office
12	Co-op City	40.874294	-73.829939	Bagels on Bartow	40.870280	-73.828611	Bagel Shop
13	Co-op City	40.874294	-73.829939	Food Universe Marketplace	40.876740	-73.828980	Grocery Store
14	Co-op City	40.874294	-73.829939	Dunkin'	40.869812	-73.829473	Donut Shop
15	Co-op City	40.874294	-73.829939	Arby's	40.870411	-73.828606	Fast Food Restaurant

Filtering all venues to just find the Pizza restaurants

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
9	Co-op City	40.874294	-73.829939	Capri II Pizza	40.876374	-73.829940	Pizza Place
26	Eastchester	40.887556	-73.827806	Mario's Pizza	40.888628	-73.831260	Pizza Place
63	Kingsbridge	40.881687	-73.902818	Kingsbridge Social Club	40.884581	-73.901999	Pizza Place
65	Kingsbridge	40.881687	-73.902818	Sam's Pizza	40.879435	-73.905859	Pizza Place
90	Kingsbridge	40.881687	-73.902818	Broadway Pizza & Pasta	40.878822	-73.904494	Pizza Place
92	Marble Hill	40.876551	-73.910660	Arturo's	40.874412	-73.910271	Pizza Place
114	Woodlawn	40.898273	-73.867315	Katonah Pizza and Pasta	40.898784	-73.867457	Pizza Place
135	Woodlawn	40.898273	-73.867315	Bella Napoli 2	40.896730	-73.862320	Pizza Place
139	Norwood	40.877224	-73.879391	Sal's Pizzeria	40.875269	-73.879563	Pizza Place
141	Norwood	40.877224	-73.879391	Marconi Pizzeria	40.880766	-73.877808	Pizza Place



Clustering NYC's pizza venues



Results and Observations

- ▶ The model result was pretty predictable, NYC has many Pizza restaurant!
- ▶ However, it easy to see that their disperion is different for each Neighborhood and many of them might be very attractive to open a new one.
- ▶ The model is highly liked to FourSquare performance. New York City is a very huge city, so it would be good to focus on a specif Borough or group of Neighborhood.
- ▶ The model is essentially scalable for every city in the world if FourSquare could provide a reliable dataset of Venues.