



# Capstone project - The Battle of Neighborhoods

..better than the Avengers

**The Consortium of Worldwide Restaurateurs nominated NY as the next #1 world spot for restaurants, and they are planning to open more of them as soon as possible.**

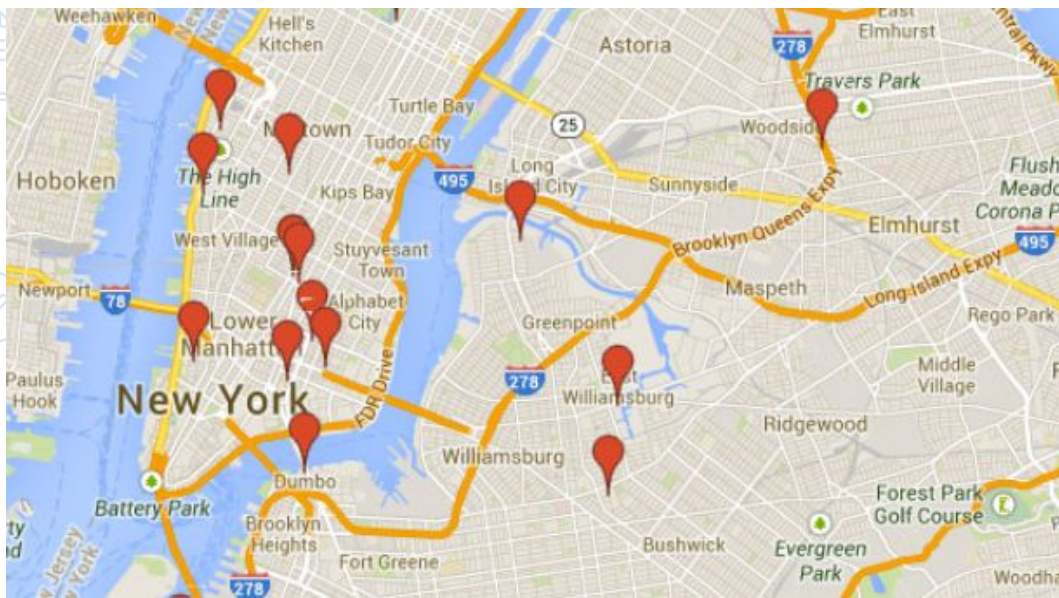




# The challenge

**Before that, they want to understand in which neighborhoods of NY is more convenient to open more restaurants, or relocate the existing ones.**

**A team of data scientists is called to action!**



# THE REPORT

A brief summary

The consortium is interested in american, italian and chinese restaurants among the neighborhoods in NY.

The data about the neighborhoods was collected using a link provided in one of the Coursera Lab ([https://cocl.us/new\\_york\\_dataset](https://cocl.us/new_york_dataset))

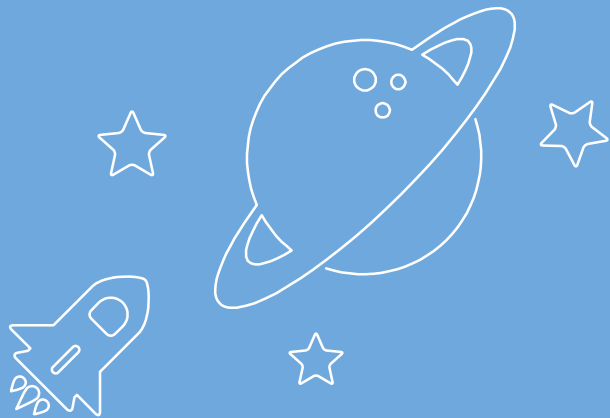
The data about the restaurants in NY was collected using the FOURSQUARE APIs.



# This is the resulting dataframe

[12]:

	Neighborhood	American Restaurant	Italian Restaurant	Chinese Restaurant
0	Allerton	0	0	2
1	Annadale	2	0	0
2	Arlington	1	0	0
3	Arrochar	0	2	0
4	Astoria	0	2	0
5	Astoria Heights	0	1	1
6	Auburndale	1	1	0
7	Bath Beach	0	2	2
8	Battery Park City	1	3	1
9	Bay Ridge	3	7	2

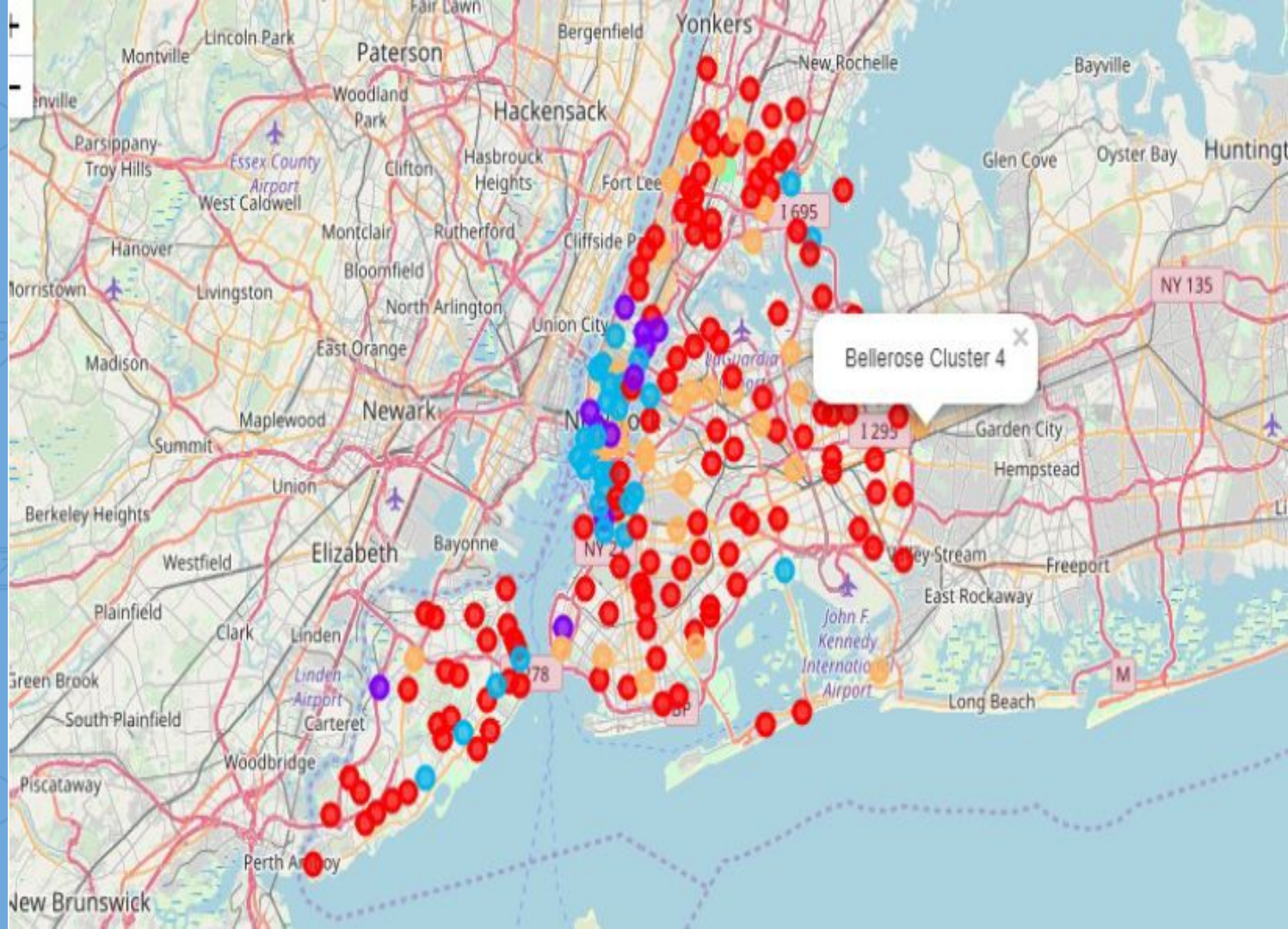


# CLUSTERING

Using the scikit-learn library, the dataset was clustered into 5 partitions in order to proceed for further analysis.



# THE MAP





American Restaurant	43
Italian Restaurant	30
Chinese Restaurant	95
total neighborhoods	33
total restaurants	168

American Restaurant	45
Italian Restaurant	83
Chinese Restaurant	93
total neighborhoods	122
total restaurants	221

American Restaurant	21
Italian Restaurant	85
Chinese Restaurant	9
total neighborhoods	11
total restaurants	115

American Restaurant	62
Italian Restaurant	106
Chinese Restaurant	23
total neighborhoods	30
total restaurants	191

American Restaurant	1
Italian Restaurant	18
Chinese Restaurant	0
total neighborhoods	1
total restaurants	19

The resulting clusters were analyzed in order to obtain conclusions and give recommendations to the consortium

**The first cluster has a minority of american restaurants and a majority of italian ones.**

**The consortium could consider opening new American restaurants here in the neighborhoods included.**



**The second cluster has a big number of italian restaurants and a very small one of chinese ones.**

**These are the best neighborhoods to open new chinese restaurants!**



**The fourth cluster is a special one: it contains only one neighborhood and 19 restaurants.**

**1 restaurant is an american one, and 18 are italians!**



Further analysis revealed that the neighborhood 'Belmont', also called the 'little Italy' of the Bronx area.

This easily explains why the large majority of Italian restaurants in that single area!





**Nevertheless, the consortium could consider, again, to open a chinese restaurant in the Belmont neighborhood, since there is apparently no one at the moment.**



**The fifth cluster contained a big number of chinese restaurants and a small number of american and italian ones. The consortium could eventually consider to open new italian or american restaurants in this neighborhoods.**



# Conclusions

**An overview of the restaurants presence in the NY's neighborhood was given.**

**The clustering of the neighborhoods gave an indea and some recommendations to the consortium in order to relocate or open new restaurants in sight of making NY the #1 restaurants spot in the world.**

Thank you for your attention.



Here's a pizza.