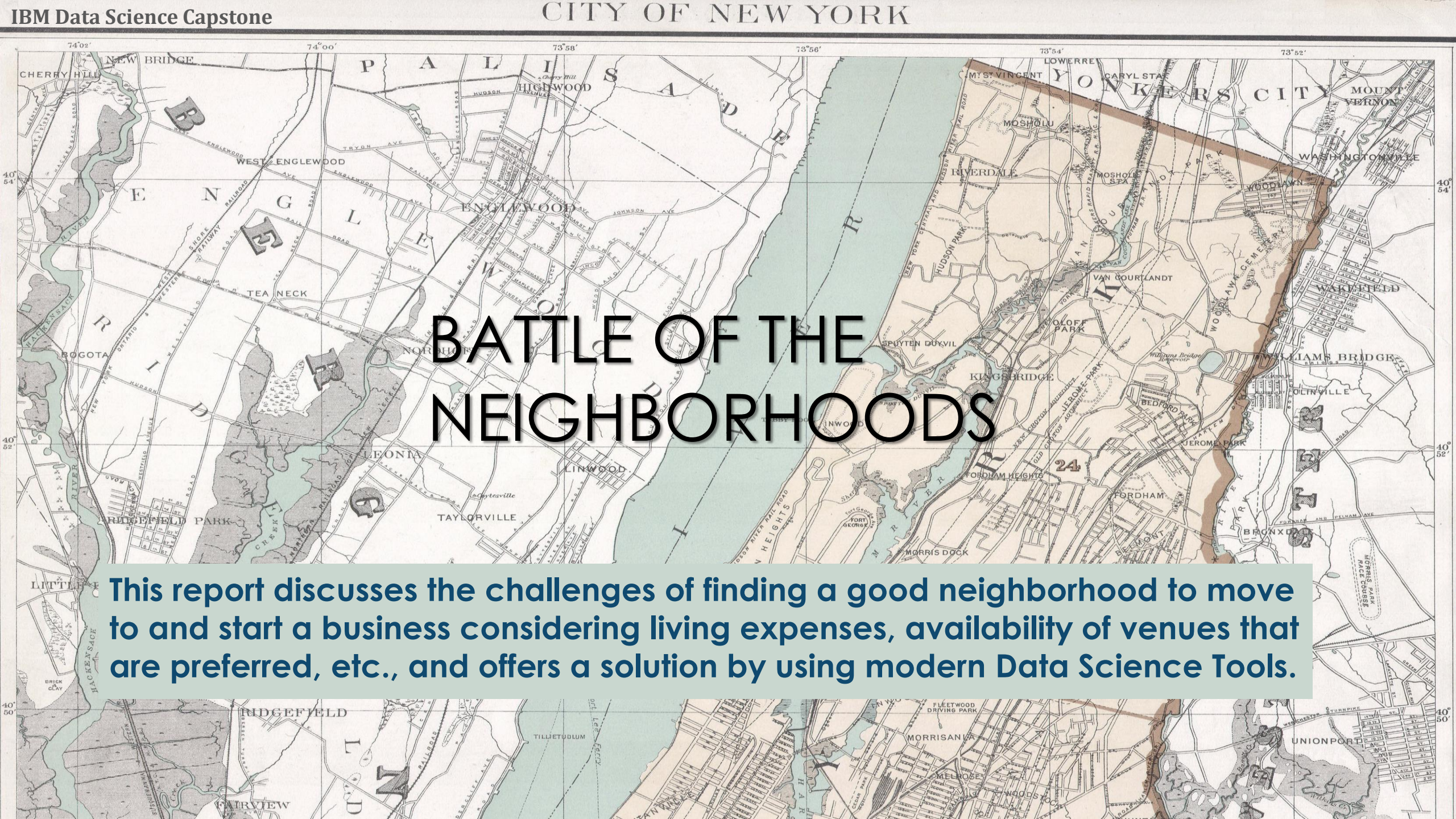

CITY OF NEW YORK
BATTLE OF THE NEIGHBORHOODS
This report discusses the challenges of finding a good neighborhood to move to and start a business considering living expenses, availability of venues that are preferred, etc., and offers a solution by using modern Data Science Tools.

BUSINESS PROBLEM

I want to start living in New York City (NYC), but I don't know what neighborhood to live in.

I love to eat Chinese food so I want to live in a neighborhood that is small, but has a high density of Chinese food restaurants.

I may consider opening my own restaurant – I want to open mine in a community of similar minded eaters.

BACKGROUND

NYC is exciting and interesting and I like tall buildings. I enjoy the cultural diversity. I like to eat a lot of food, so I want there to be lots options to eat near-by. Specifically, I like to eat Chinese food.

Unfortunately (or fortunately – depending on your perspective) NYC is a gigantic city with many neighborhoods and a significant number of venues to choose from. This project would be nearly impossible to do by flipping through a phone book, or trying to search manually though google.

This project seeks to utilize the advantages of modern-day data science tools to solve the problem discussed above.

DATA SETS

Webscraping using Beautiful Soup.

Course supplied data set
https://cocl.us/new_york_dataset

Foursquare API for venue data

Location data from Geopy

```
( 1 / 306 ) Chinese Resturants in Wakefield, Bronx:0
['Bronx', 'Wakefield', 40.89470517661, -73.84720052054902]
( 2 / 306 ) Chinese Resturants in Co-op City, Bronx:0
['Bronx', 'Co-op City', 40.87429419303012, -73.82993910812398]
( 3 / 306 ) Chinese Resturants in Eastchester, Bronx:0
['Bronx', 'Eastchester', 40.887555677350775, -73.82780644716412]
( 4 / 306 ) Chinese Resturants in Fieldston, Bronx:0
['Bronx', 'Fieldston', 40.89543742690383, -73.90564259591682]
( 5 / 306 ) Chinese Resturants in Riverdale, Bronx:0
['Bronx', 'Riverdale', 40.890834493891305, -73.9125854610857]
( 6 / 306 ) Chinese Resturants in Kingsbridge, Bronx:0
['Bronx', 'Kingsbridge', 40.88168737120521, -73.90281798724604]
( 7 / 306 ) Chinese Resturants in Marble Hill, Manhattan:0
['Manhattan', 'Marble Hill', 40.87655077879964, -73.91065965862981]
( 8 / 306 ) Chinese Resturants in Woodlawn, Bronx:0
['Bronx', 'Woodlawn', 40.89827261213805, -73.86731496814176]
( 9 / 306 ) Chinese Resturants in Norwood, Bronx:1
['Bronx', 'Norwood', 40.87722415599446, -73.8793907395681]
( 10 / 306 ) Chinese Resturants in Williamsbridge, Bronx:0
['Bronx', 'Williamsbridge', 40.88103887819211, -73.85744642974207]
( 11 / 306 ) Chinese Resturants in Baychester, Bronx:0
['Bronx', 'Baychester', 40.866858107252696, -73.83579759808117]
```

METHODOLOGY

1) Several software suites including Python, GitHub, Word, Powerpoint, Adobe etc

2) Mutliple Python libraries including Folium, Pandas, Geopy, etc

3) Data stored in pandas dataframes.

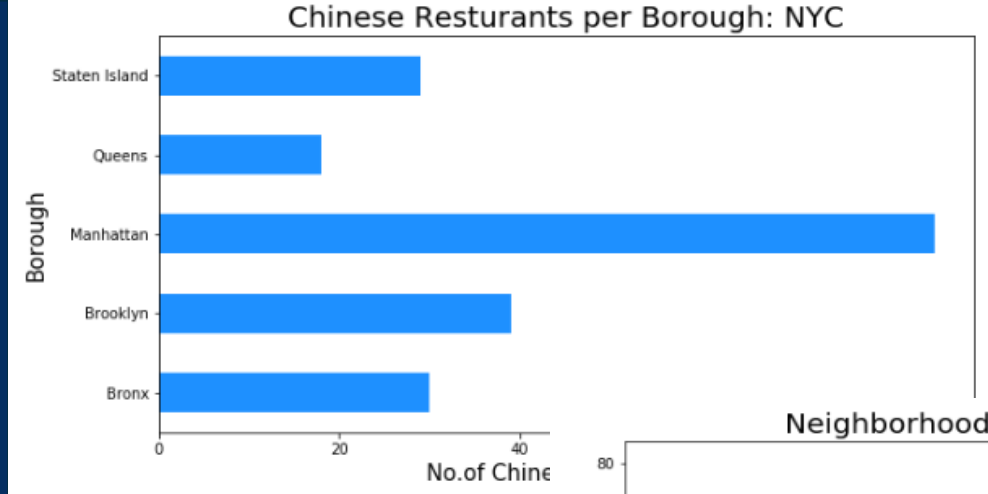
4) Foursquare API used to determine venue data

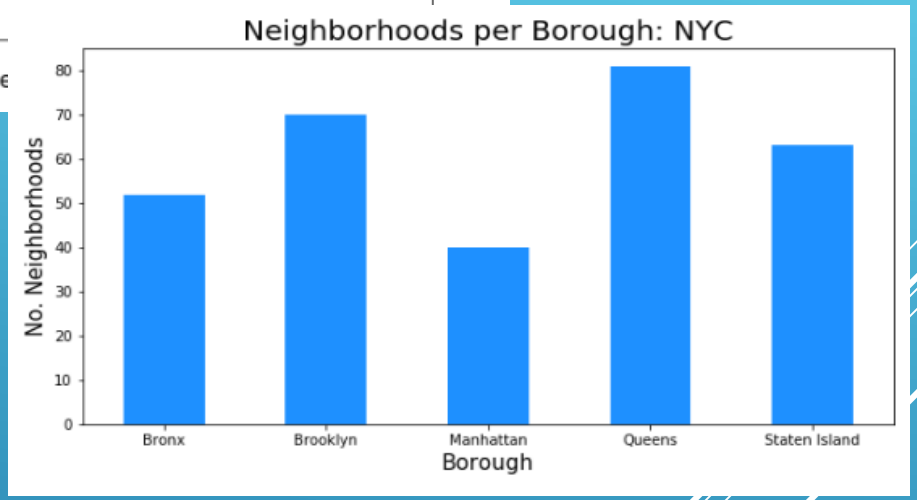
5) Python used to analyze and visualize the data, allowing a decision

RESULTS

The borough of Queens has the most neighorhoods, therefore the best choice for future options

The neighborhood of Astoria has the fewest current Chinese restaurants and therefore the best place for develop a business





	name	categories	lat	lng
0	Favela Grill	Brazilian Restaurant	40.767348	-73.917897
1	Orange Blossom	Gourmet Shop	40.769856	-73.917012
2	Off The Hook	Seafood Restaurant	40.767200	-73.918104
3	CrossFit Queens	Gym	40.769404	-73.918977
4	Titan Foods Inc.	Gourmet Shop	40.769198	-73.919253

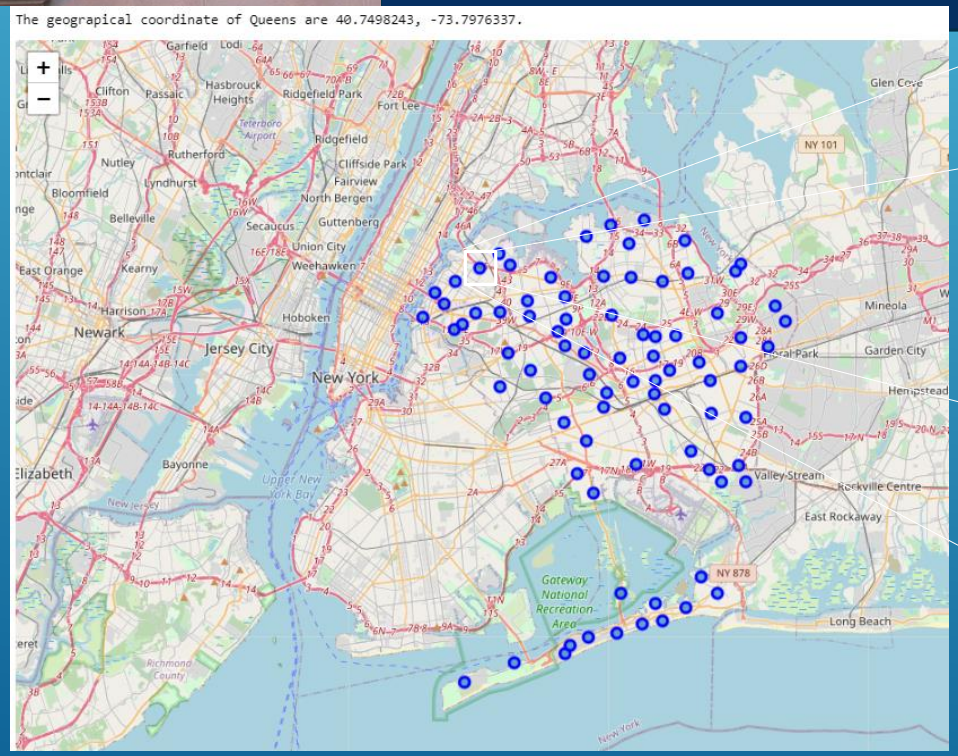
Image from NYCgo.com

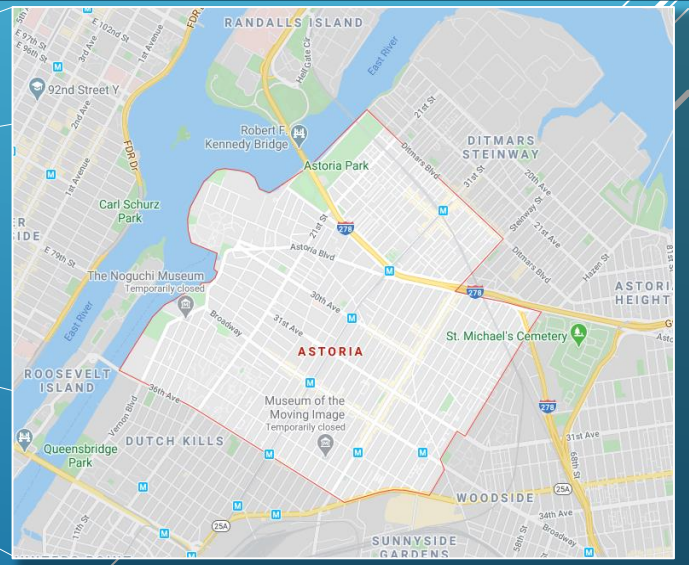
By GK tramrunner229 - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=1394041

DISCUSSION

Astoria in Queens, NY is a fantastic place to live and potentially a great place to start a business.

The use of Folium, and other libraries from Python make analysis and visualization simple.





CONCLUSION

I would move to Queens because it has sufficient Chinese restaurants. Paradoxically, I would move to the neighborhood of Atoria because it has the fewest restaurants. I would move to this neighborhood and eventually start up my own business.

This project has clearly demonstrated the utility of modern data science tools. Python and its associated library of open-source environments is a very powerful and easy to use tool. API's such as Four Square, Google Maps, and others, add an entirely different dimension to analysis, exponentially increasing efficiency.

Something as complex as this simple capstone project would have been impossible even a few years ago, without tremendous resources such as money and man-power.
I feel empowered by what I have learned in the IBM Data Science Professional Certificate, and I am looking forward to continuing my education in data science.