



Capstone: Italian Restaurants of New York City

By: Jagat Kohli

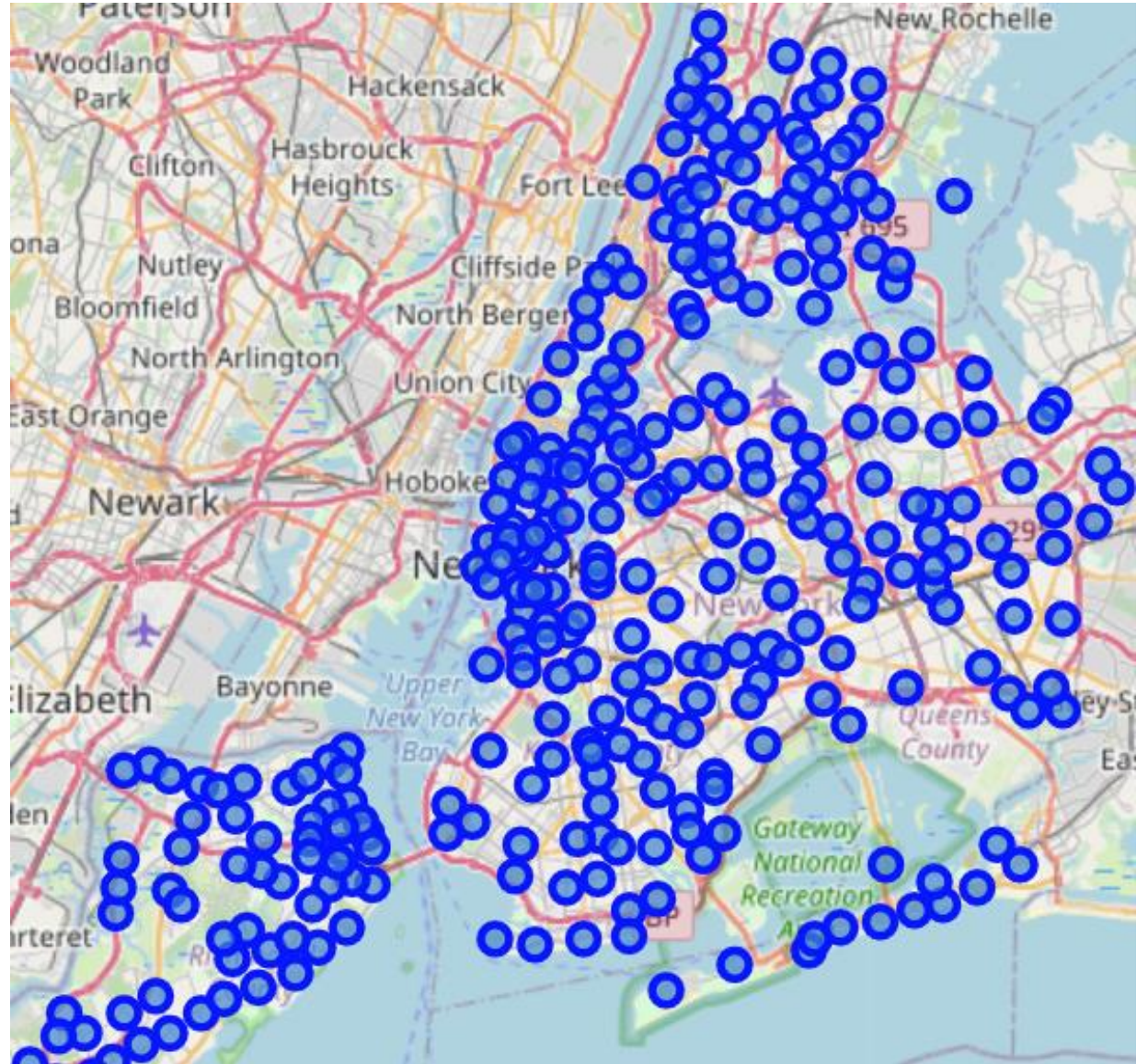


Business Problem

- You have always wanted to start a niche Italian restaurant, but do not know where start the business.
- You want to narrow it down to the neighborhoods in that city. NYC is a large city with a large market and opportunity.
- The objective of this project is to gather and analyze restaurant data from New York City. By using data analysis and machine learning tools, we want to find out where in the city would provide the best opportunity to open an Italian restaurant.

Data Retrieval and Cleaning

- To retrieve the New York City neighborhood data, I used the URL:
https://geo.nyu.edu/catalog/nyu_2451_34572
- Then, used the Geopy package to retrieve the specific latitude and longitude coordinates
- Generated map of all the NYC neighborhoods



Clustering

Used one-hot encoding to retrieve the frequency of Italian restaurants in each neighborhood

Implemented k-means clustering analysis to show restaurant density

Created 5 clusters and individually examined the data in each

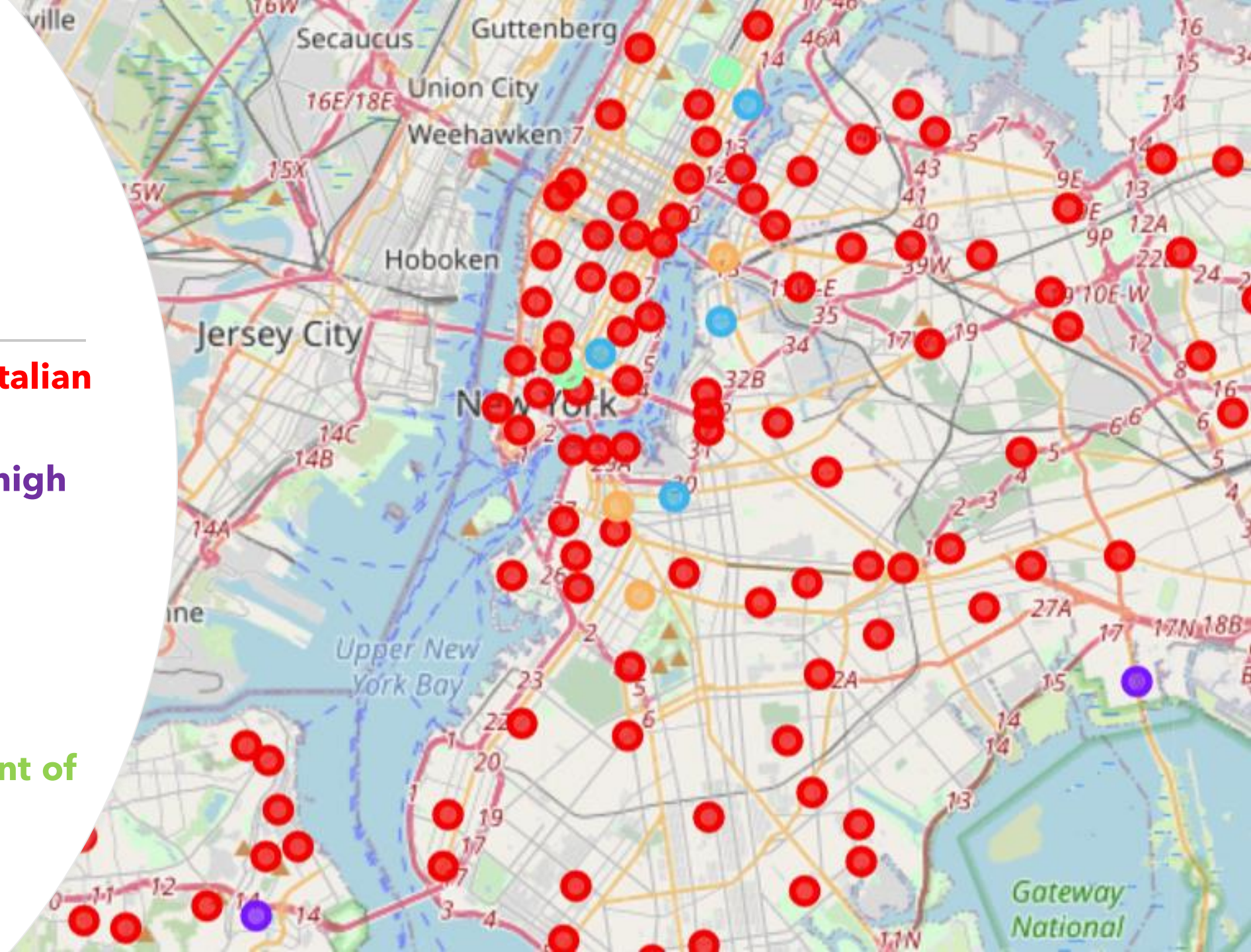
Examining Clusters

- Frequency shown in the column “Italian Restaurant”
- Values range from 0 to 1, the higher the value, the more Italian restaurants in the neighborhood

	Neighborhood	Italian Restaurant	Cluster Labels	Borough	Latitude	Longitude
35	Clinton Hill	0.100000	2	Brooklyn	40.693229	-73.967843
75	Greenpoint	0.125000	2	Brooklyn	40.730201	-73.954241
115	Noho	0.100000	2	Manhattan	40.723259	-73.988434
126	Prince's Bay	0.125000	2	Staten Island	40.526264	-74.201526
169	Yorkville	0.083333	2	Manhattan	40.775930	-73.947118

Visualizing Clusters

- **Cluster 1: few to no Italian restaurants**
- **Cluster 2: moderate high amount of Italian restaurants**
- **Cluster 3: few to moderate amount of Italian restaurants**
- **Cluster 4: high amount of Italian restaurants**
- **Cluster 5: few Italian restaurants**





Conclusion

- Ideal places for an Italian restaurant are certainly in the neighborhoods that are in red, or Cluster 1
- Since there are more people in the Manhattan you may be better off placing your business in the neighborhoods adjacent to those near southern Manhattan
- Some of those places include **Greenwich Village, Soho,** and the **Lower East Side.**



THANK YOU!

