

Open an authentic Chinese restaurant in Staten Island, NYC

Capstone Project
Coursera

Business opportunity

- Staten Island borough is relatively underexplored and underserved part of the New York City.
- Find Neighborhood/Location that offers the best chance of success to a new Chinese restaurant
- Interested by business starters or restaurant owners.
- Learning opportunities for Data Scientists/Analysts, students or professionals.

Data Source

- The NYC data contains all 5 Boroughs and their Neighborhoods (https://cocl.us/new_york_dataset)
- The Foursquare dataset has the Venues location at each Neighborhood in Staten Island. Obtained using Foursquare API requests (<https://api.foursquare.com/>)
- The Asian Population data providing the Asian population in each Staten Island Neighborhood.
(<https://statisticalatlas.com/>)

Data cleaning and wrangling

- NYC data

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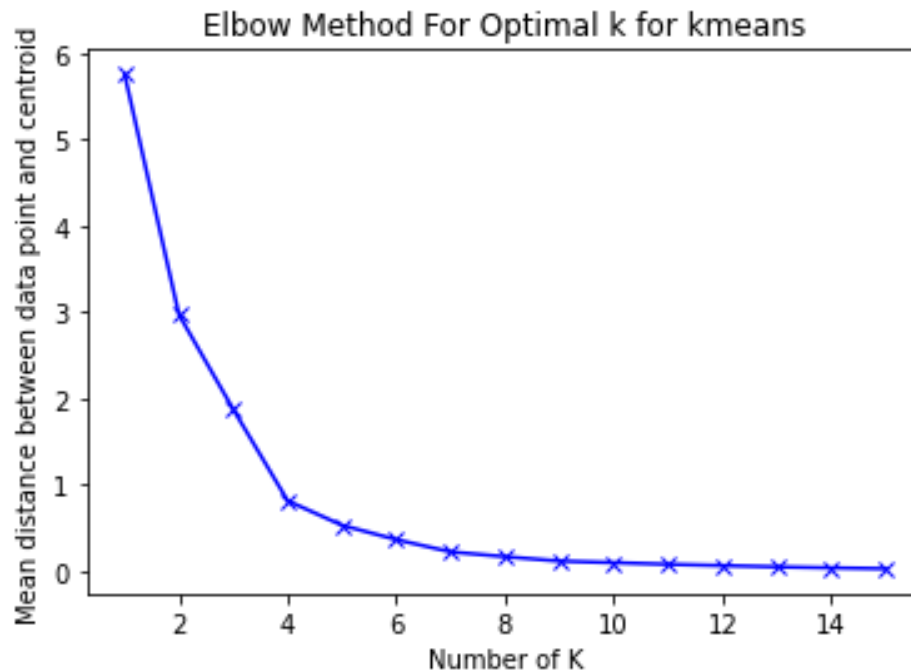
	Borough	Neighborhood	Latitude	Longitude
0	Staten Island	St. George	40.644982	-74.079353
1	Staten Island	New Brighton	40.640615	-74.087017
2	Staten Island	Stapleton	40.626928	-74.077902
3	Staten Island	Rosebank	40.615305	-74.069805
4	Staten Island	West Brighton	40.631879	-74.107182

- Combining Foursquare dataset and the Asian Population data

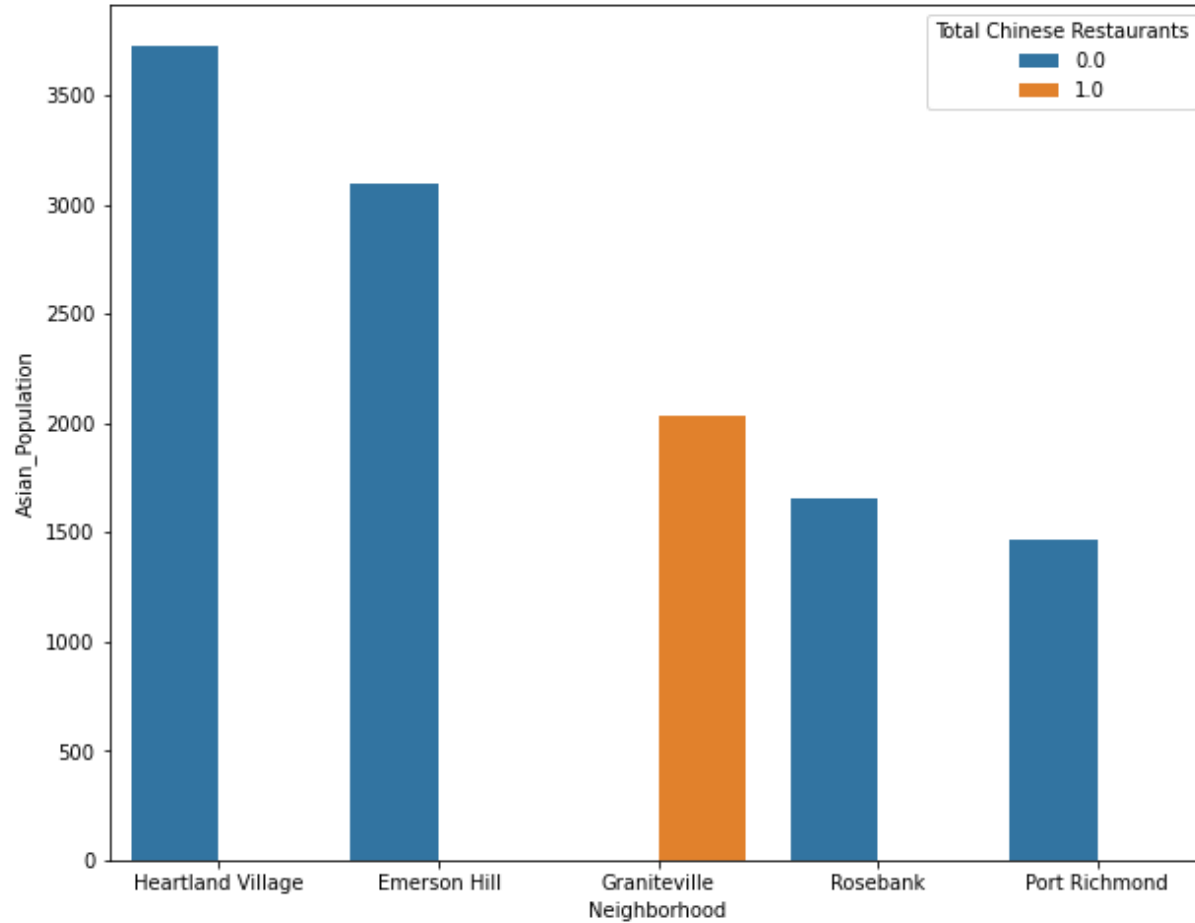
	Neighborhood	Total Restaurants	Total Chinese Restaurants	Asian_Population	Total_Population
0	Annadale	2.0	0.0	270.0	7297.0
1	Arden Heights	2.0	1.0	741.0	13722.0
2	Arrochar	5.0	0.0	1025.0	8471.0
3	Bay Terrace	3.0	0.0	321.0	7295.0
4	Bulls Head	13.0	3.0	821.0	13241.0

K-mean Clustering

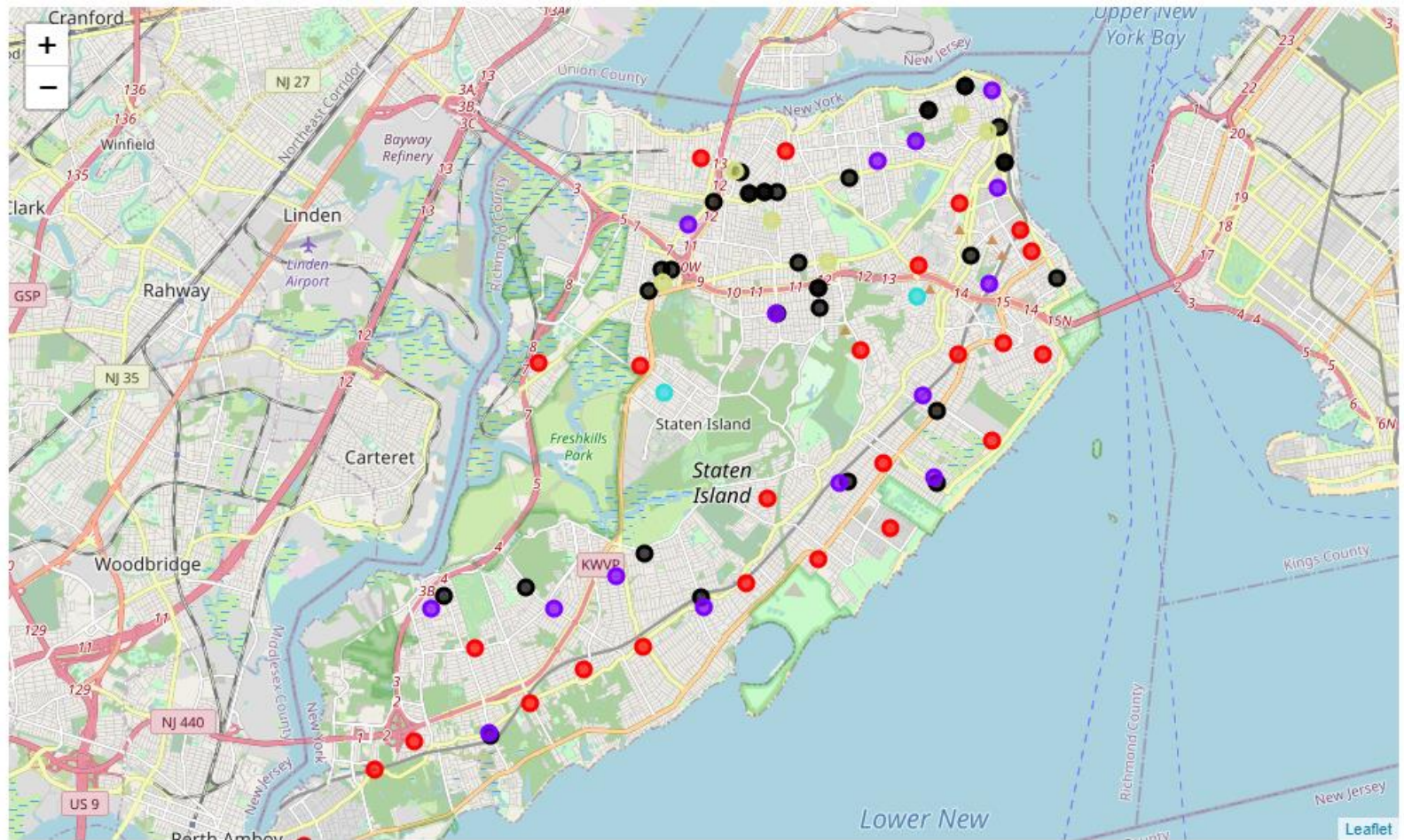
- The "Elbow" method to determine the best number of k
- Inflection point in the curve SSE vs. K scatter point plot



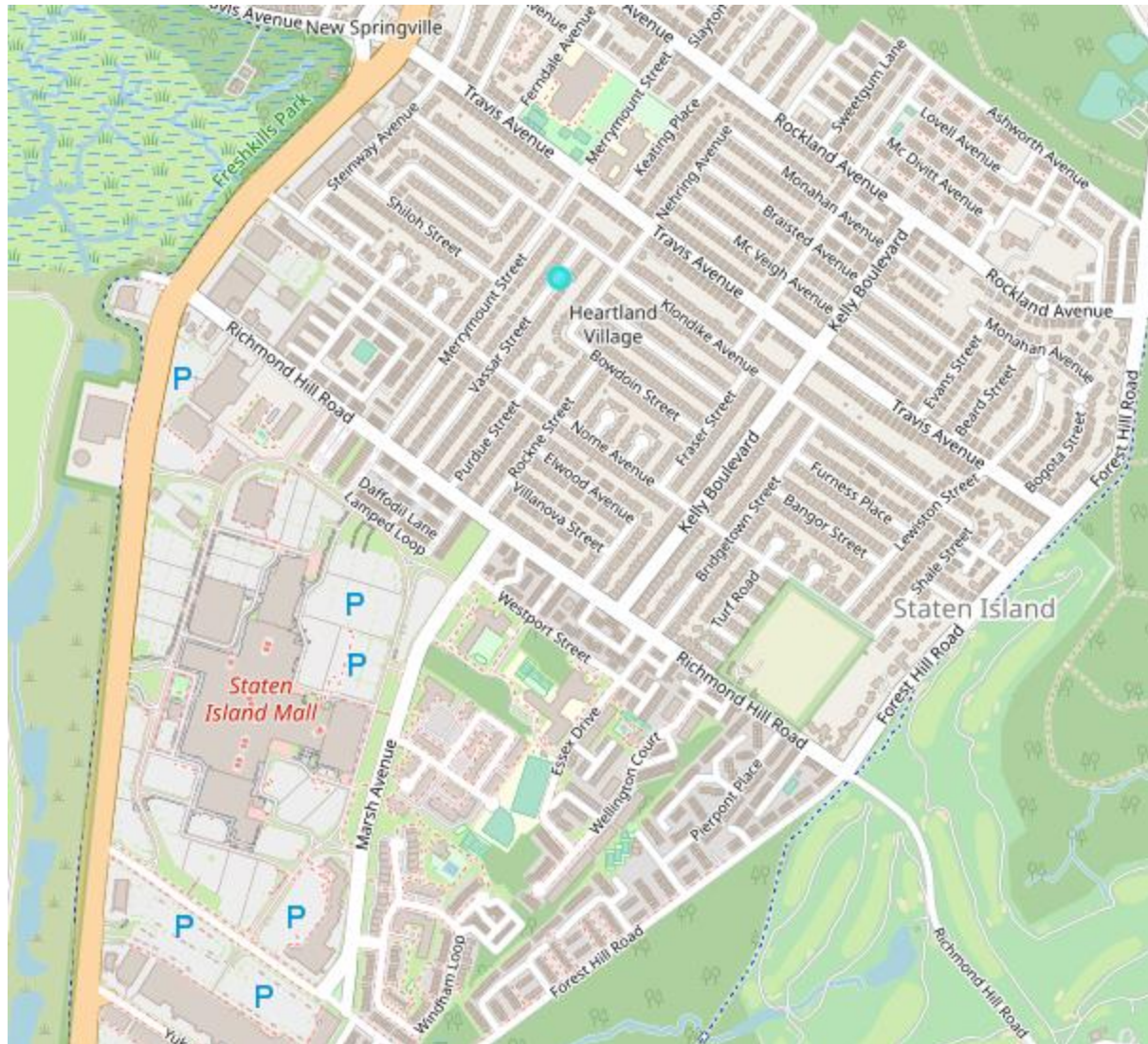
Asian population by neighborhood



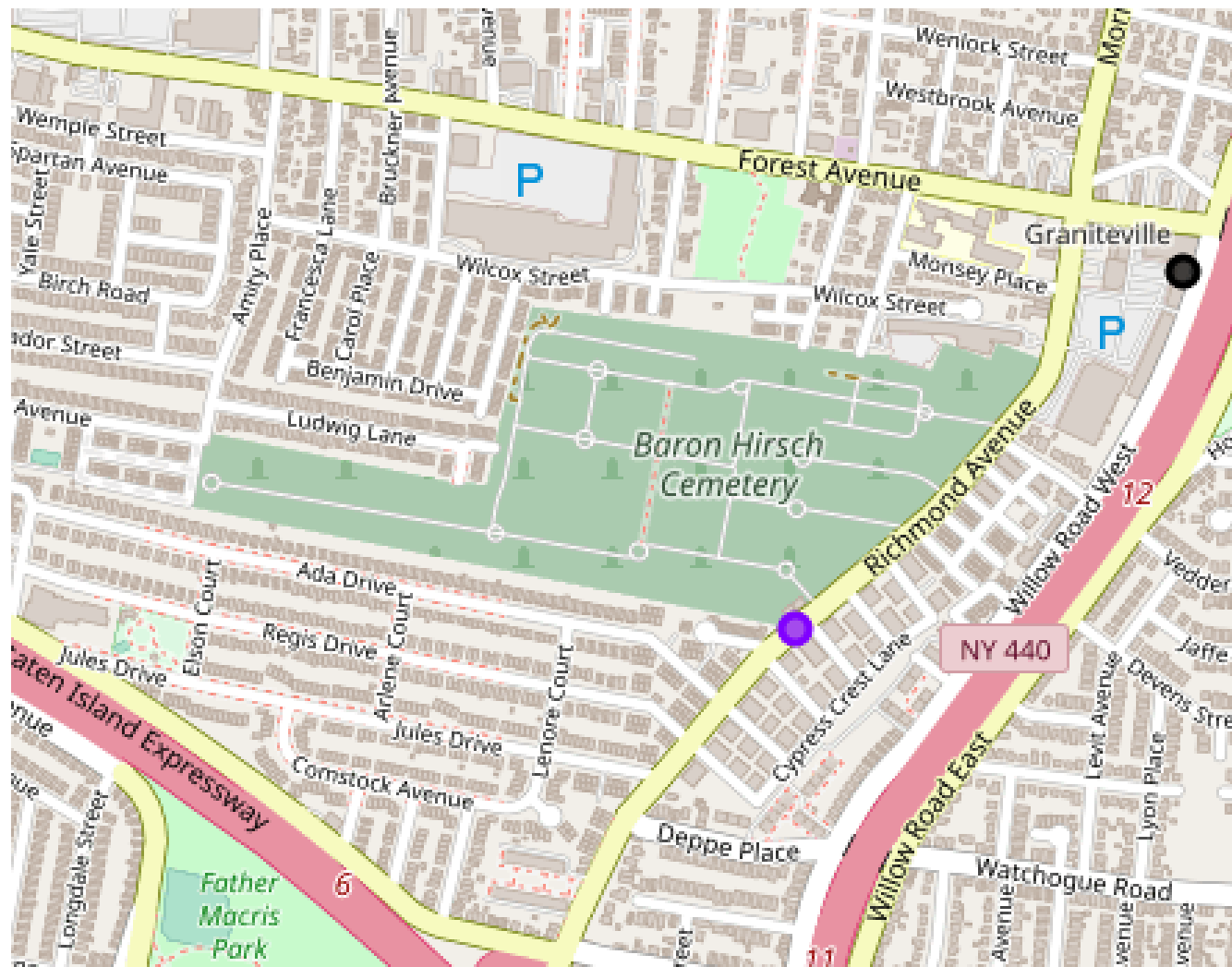
Neighborhood clustering and Chinese restaurants



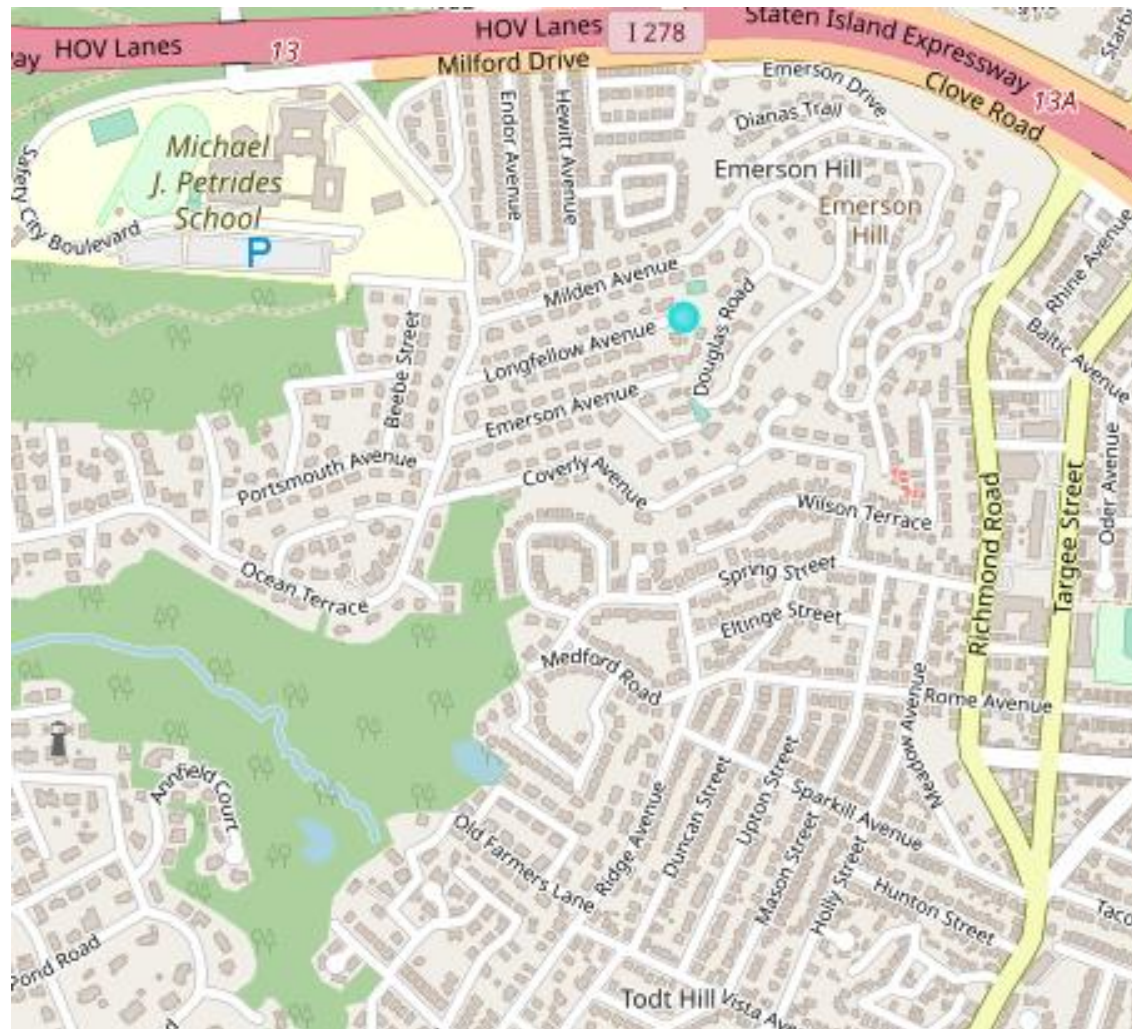
Heartland Village



Graniteville



Emerson Hill



Conclusion

- Top recommendation is Heartland Village. It has the highest Asian population and no Chinese restaurant serving the area. A location close to Staten Island Mall is the best place to set up the new Chinese restaurant.
- Graniteville has the third most Asian population, only one Chinese restaurant, and it has a broader potential customer base.
- Emerson Hill has the second most Asian population and none of the Chinese restaurants. However, is a residential neighborhood with few other business and point of attractions.