OPENING A PIZZA RESTAURANT IN NYC

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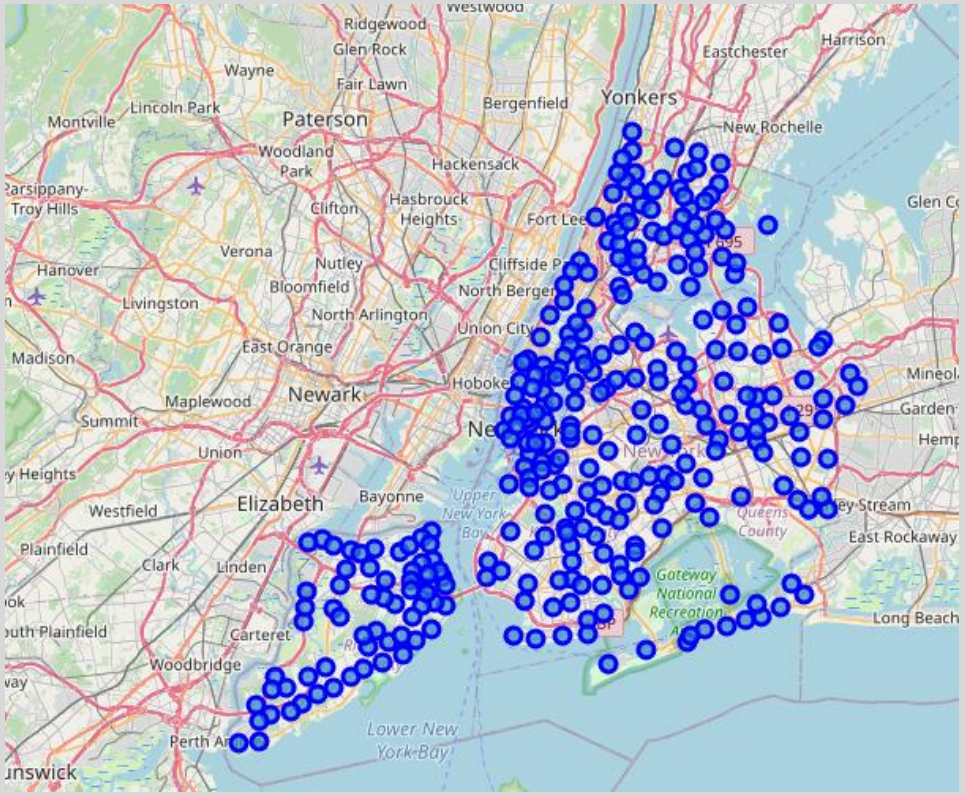
Problem

- 8 million people live in NYC
- There is one pizza restaurant for every 20,000 people
- Want to open a new pizza restaurant in an underserved area
- Need to determine which neighborhoods have the least amount of pizza restaurants as potential locations for new business venture

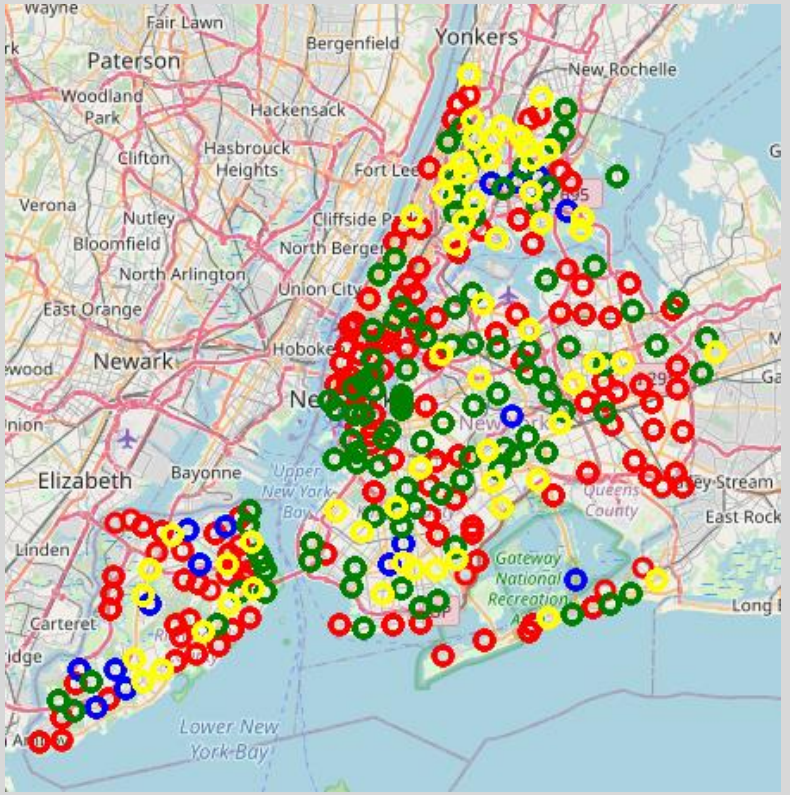
Data Acquisition

- Neighborhood data:
  - Source: NYU Spatial Data Repository https://geo.nyu.edu/catalog/nyu_2451_34572
  - Contains latitude/longitude data plus neighborhood names
  - 306 total rows
  - Map of data points (right)
- Restaurant Data:
  - Source: Foursquare “explore venues” API https://developer.foursquare.com/docs/api-reference/venues/explore/
  - Must fetch venue data for each neighborhood in the NYU dataset
  - 10065 total rows



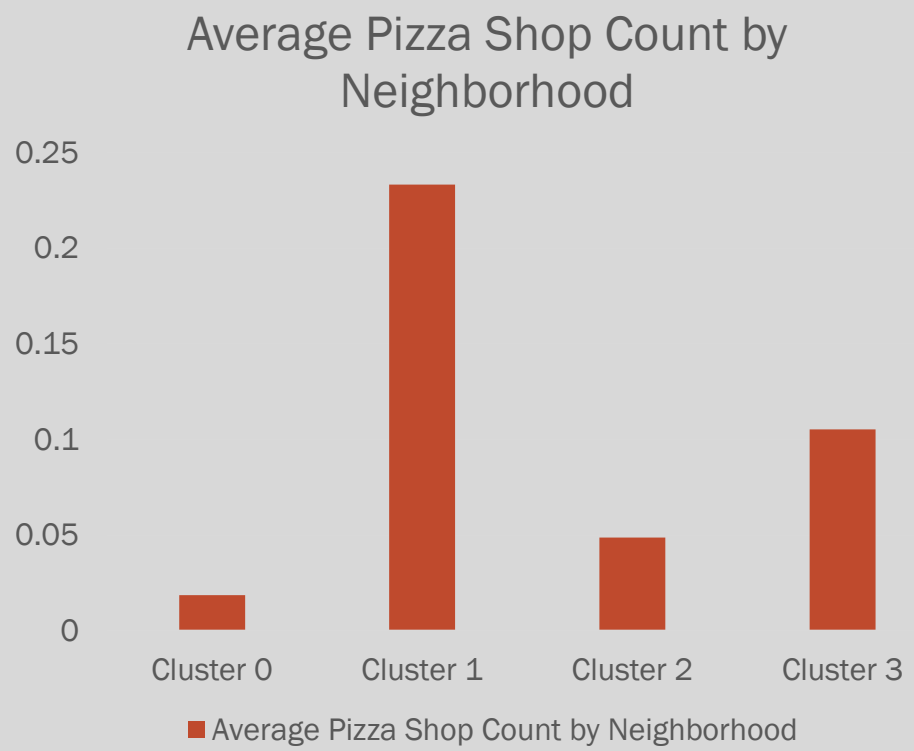
Analysis

- Neighborhoods are grouped using k-means clustering to determine which have the least number of pizza restaurants
- This is done using the Sklearn and Pandas libraries in Python
- The photo on the right are the clustered datapoints overlayed on a map of NYC
- There are 4 clusters



Results

- Of the 4 clusters, clusters 0 and 2 have the least amount of pizza restaurants
- Cluster 0 neighborhoods:
  - Lincoln Square, Jackson Heights, Murray Hill, etc
- Cluster 2 neighborhoods:
  - Mount Eden, Carroll Gardens, Rego Park, etc



Conclusion

- Clusters 0 and 2 are the least dense in terms of pizza restaurant saturation
- I recommend opening a new pizza shop in a neighborhood in either cluster 0 or cluster 2
- Cluster 0 is ideal, with less pizza restaurants than cluster 2.