

Coursera Capstone Project

New York Neighborhood recommender

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Structure

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Introduction

Data

- ❖ I used Foursquare API namely venues / explore to find the „hottest“ venues in each neighborhood right now
- ❖ Data Cleaning: I grouped all venue types in a onehot encoding to see which type is the most sought for at this time
- ❖ New York Neighborhoods were the reference
- ❖ The current Neighborhood of the user, I chose Eimsbüttel, Hamburg

Methodology

- ❖ Cluster New York Neighborhoods in 10 general clusters depending on which venues they have to offer and which are the ,hottest‘
- ❖ Find cluster centers
- ❖ Compare cluster centers with the results of your home Neighborhood
- ❖ Output the best matching cluster as recommended Neighborhoods
- ❖ Manually check which features of the recommended Neighborhoods actually fit as validation phase

Results

- ❖ (Table Eimsbüttel)
- ❖ This table shows the venues in Eimsbüttel
- ❖ (Table clusters)
- ❖ This table shows the best matching cluster.
- ❖ (Graph locations)
- ❖ These are the geolocations of the recommendes Neighborhoods.

Results

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Eimsbüttel	Ice Cream Shop	Pharmacy	Sandwich Place	Dessert Shop	Donut Shop	Fast Food Restaurant	Field	Farmers Market	Farm	Eastern European Restaurant

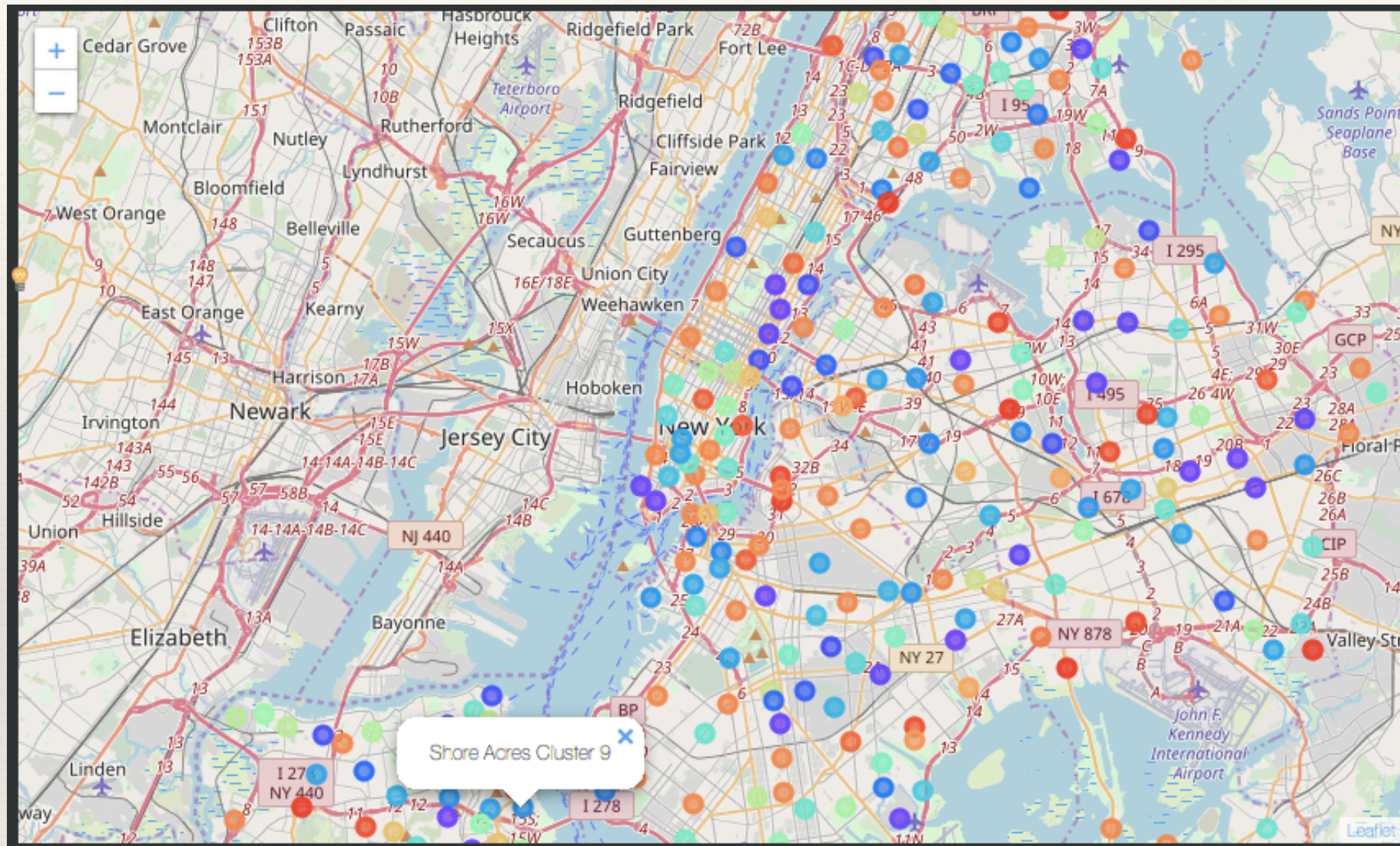
- ❖ This table shows how my home Neighborhood looks like.

Results

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
9	Williamsbridge	Caribbean Restaurant	Soup Place	Bar	Nightclub	Women's Store	Egyptian Restaurant	Filipino Restaurant	Field	Fast Food Restaurant	Farmers Market
33	Morris Park	Deli / Bodega	Pizza Place	Italian Restaurant	Burger Joint	Eastern European Restaurant	Filipino Restaurant	Field	Fast Food Restaurant	Farmers Market	Farm
67	Red Hook	Bakery	Wine Shop	New American Restaurant	American Restaurant	Sandwich Place	Factory	Egyptian Restaurant	Electronics Store	Empanada Restaurant	Event Space
130	Woodside	Thai Restaurant	Bakery	Fast Food Restaurant	Pub	Latin American Restaurant	Event Space	Eastern European Restaurant	Egyptian Restaurant	Electronics Store	Empanada Restaurant
136	Kew Gardens	Pizza Place	Indian Restaurant	South American Restaurant	Juice Bar	Trail	Women's Store	Event Space	Egyptian Restaurant	Electronics Store	Empanada Restaurant
162	Queens Village	Mobile Phone Shop	Fast Food Restaurant	Sandwich Place	Discount Store	Martial Arts Dojo	Field	Farmers Market	Farm	Eastern European Restaurant	Falafel Restaurant
185	Hillcrest	Ice Cream Shop	Mobile Phone Shop	College Basketball Court	College Academic Building	Dim Sum Restaurant	Farm	Empanada Restaurant	Event Space	Factory	Falafel Restaurant
220	Sunnyside	Pizza Place	Market	Bakery	Spa	Peruvian Restaurant	American Restaurant	Seafood Restaurant	Grocery Store	Gym	Electronics Store
238	Butler Manor	Baseball Field	Convenience Store	Pool	Bus Stop	Egyptian Restaurant	Fish & Chips Shop	Filipino Restaurant	Field	Fast Food Restaurant	Farmers Market
241	Arden Heights	Pizza Place	Pharmacy	Coffee Shop	Playground	Cycle Studio	Cupcake Shop	Filipino Restaurant	Field	Fast Food Restaurant	Farmers Market
252	Shore Acres	Italian Restaurant	Bar	Gastropub	Women's Store	Egyptian Restaurant	Fish & Chips Shop	Filipino Restaurant	Field	Fast Food Restaurant	Farmers Market
282	Broadway Junction	Ice Cream Shop	Sandwich Place	Fried Chicken Joint	Burger Joint	Caribbean Restaurant	Department Store	Electronics Store	Filipino Restaurant	Field	Fast Food Restaurant

❖ This table shows the best matching cluster.

Results



- ❖ This table shows where the best matches lie. Watch out for all the blue-ish ones.

Discussion

- ❖ The recommended areas share more properties with Eimsbüttel.
- ❖ We see family friendly Neighborhoods with parks and water close by with just as many varied restaurants for grown-ups.

Conclusion

- ❖ It is a way of recommending. Many features not included still fitted implicitly by just looking at the venues.
- ❖ Foursquare data has proven to be plenty and accurate.
- ❖ Further research should be done in time series to answer the questions:
 - ❖ How well is Morning / Noon / Nightlife compared with this methodology?
 - ❖ How about the seasons?
 - ❖ Plus: How can we add living costs as a factor?
 - ❖ Thank you for your time!