City Longshot Restaurants:
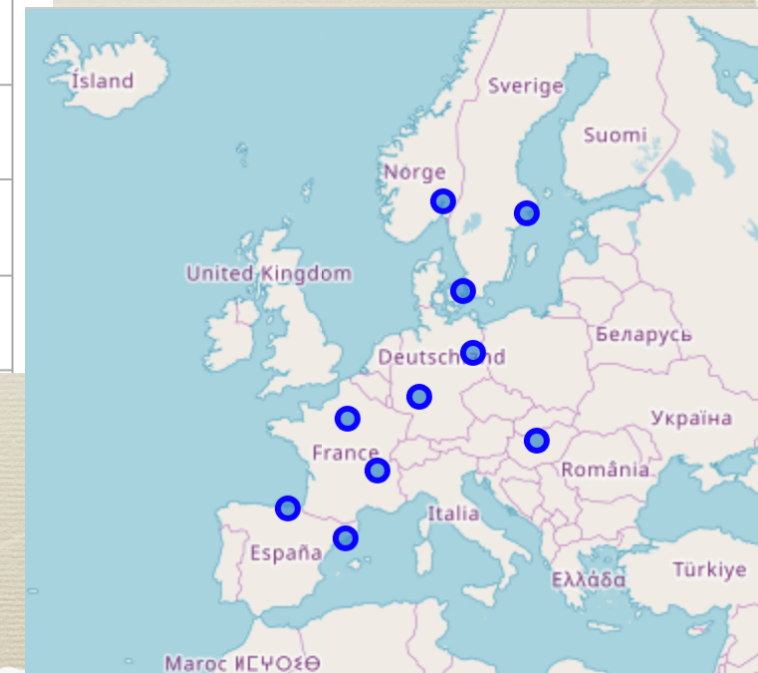## Entering the American Marked

Introduction

* Specialized in opening restaurants in the city centre of big European cities

* Want to expand to the American marked

* Have options to start up in: New York, San Francisco, Chicago, Minneapolis and Los Angeles

* Which one of the American cities is most similar to European ones when it comes to their taste in restaurants?

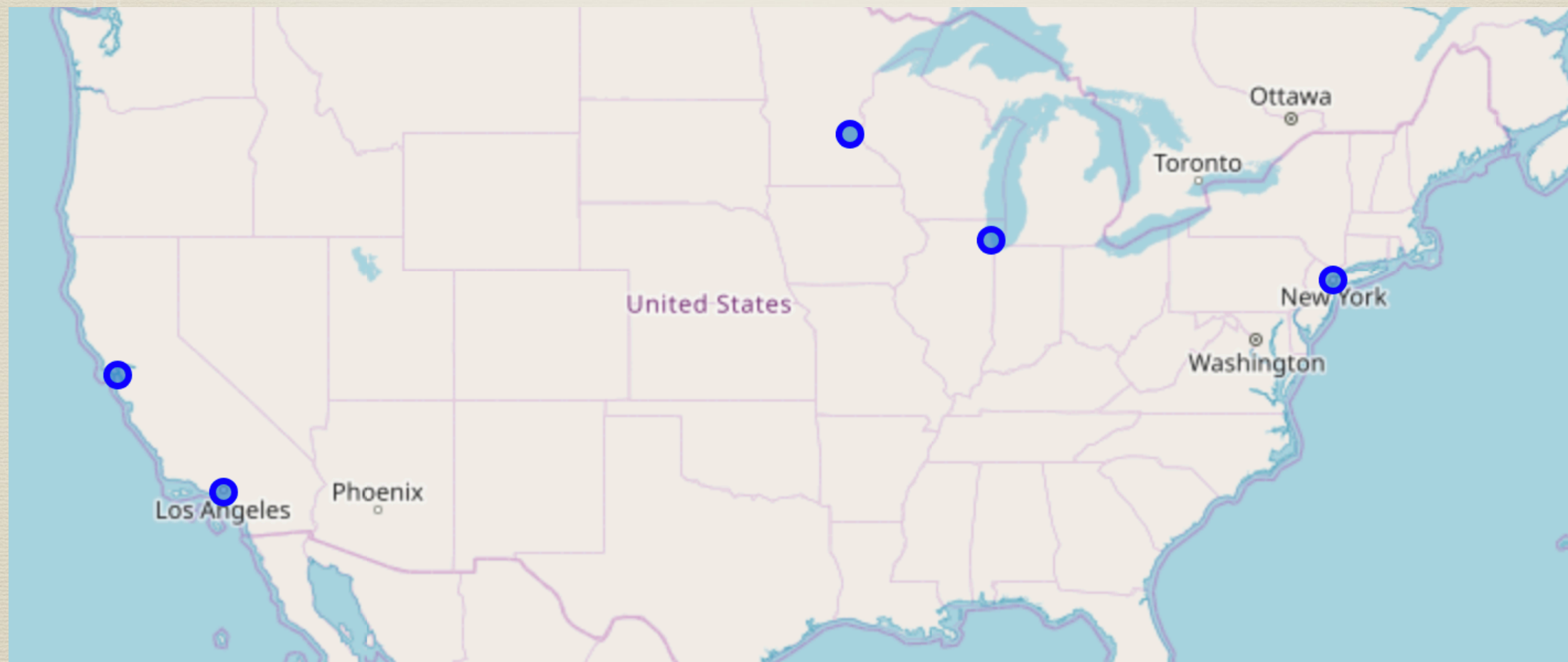* Can we predict, based on our experiences from Europe, which city is the best to put a restaurant in?

The Experience from Europe

Cities and their "Success" Score

City	Latitude	Longitude	Score [1-3]
Copenhagen	55.6760968	12.5683371	03.00
Oslo	59.913869	10.752245	03.00
Stockholm	59.329324	18.068581	03.00
Frankfurt	50.110922	8.682127	03.00
Barcelona	41.385064	2.173404	01.00
Bilbao	43.263013	-2.934985	01.00
Budapest	47.49712	19.040235	02.00
Paris	48.856614	2.352222	01.00
Lyon	45.764043	4.835659	01.00
Berlin	52.520007	13.404954	02.00

5 options in America

Analysis

* Construction of one-hot vectors from FourSquare data (1000 meter around city centre)

* K-mean clustering algorithm

Cities	Burger Joint	Scandinavian Restaurant	Steakhouse	French Restaurant	Italian Restaurant	Fast Food Restaurant	American Restaurant	Asian Restaurant	Sushi Restaurant	Indian Restaurant	Mexican Restaurant	Vietnamese Restaurant
Barcelona	4	0	1	0	6	0	1	2	0	0	2	1
Berlin	3	0	1	0	8	0	0	4	1	0	0	11
Bilbao	2	0	2	0	3	1	0	3	1	0	1	0
Budapest	2	0	3	3	13	0	1	0	1	2	1	2
Chicago	4	0	1	2	11	0	4	3	0	1	1	1
Copenhagen	5	18	3	7	3	1	2	2	2	2	1	1
Frankfurt	3	0	3	2	10	0	0	2	2	1	1	1
Los Angeles	0	0	1	3	6	0	1	0	10	1	9	0
Lyon	4	1	2	29	5	4	1	0	2	2	0	0

	City	Group
0	Barcelona	4
1	Berlin	6
2	Bilbao	4
3	Budapest	6
4	Chicago	6
5	Copenhagen	3
6	Frankfurt	6
7	Los Angeles	5
8	Lyon	1
9	Minneapolis	2
10	New York	2
11	Oslo	3
12	Paris	1
13	San Francisco	2
14	Stockholm	3

Analysis

X	Cities	Description	Avg. Score
Group 1:	Paris, Lyon	French Cities	1.0
Group 2:	Minneapolis, New York, San Francisco	American Cities Group 1	NaN
Group 3:	Stockholm, Copenhagen, Oslo	Scandinavian Cities	3.0
Group 4:	Bilbao, Barcelona	Spanish Cities	1.0
Group 5:	Los Angeles	American Cities Group 2	NaN
Group 6:	Budapest, Chicago, Berlin, Frankfurt	Mixed Group with one American City	2.33

* Successfully placed cities into categories dividing Spanish, French and Scandinavian cities.

* Only one american city in a non-American cluster (Chicago)

* Might be most similar to an European City, when it comes to the taste in Restaurants?

k=5 Nearest Neighbour

	Score Pred.	City
0	2.2	New York
1	1.8	San Francisco
2	2.2	Los Angeles
3	1.8	Chicago
4	2.0	Minneapolis

* Is the parameter space densely populated?

* Are the American cities close enough to their nearest neighbours?

* Need more investigations of the parameter space

Conclusion

* The (k=6) clustering algorithm gave meaningful results and divided french, American, spanish and Scandinavian cities.

* According to the clustering algorithm Chicago seemed more similar to some European cities

* According to the nearest neighbour algorith New York and Los Angeles are predicted to have the highest success score of 2.2

* Need further investigations