

The Battle of the Neighborhoods

Applied Data Science Capstone by IBM/Coursera

Predicting the best place for opening an Italian restaurant in Paris

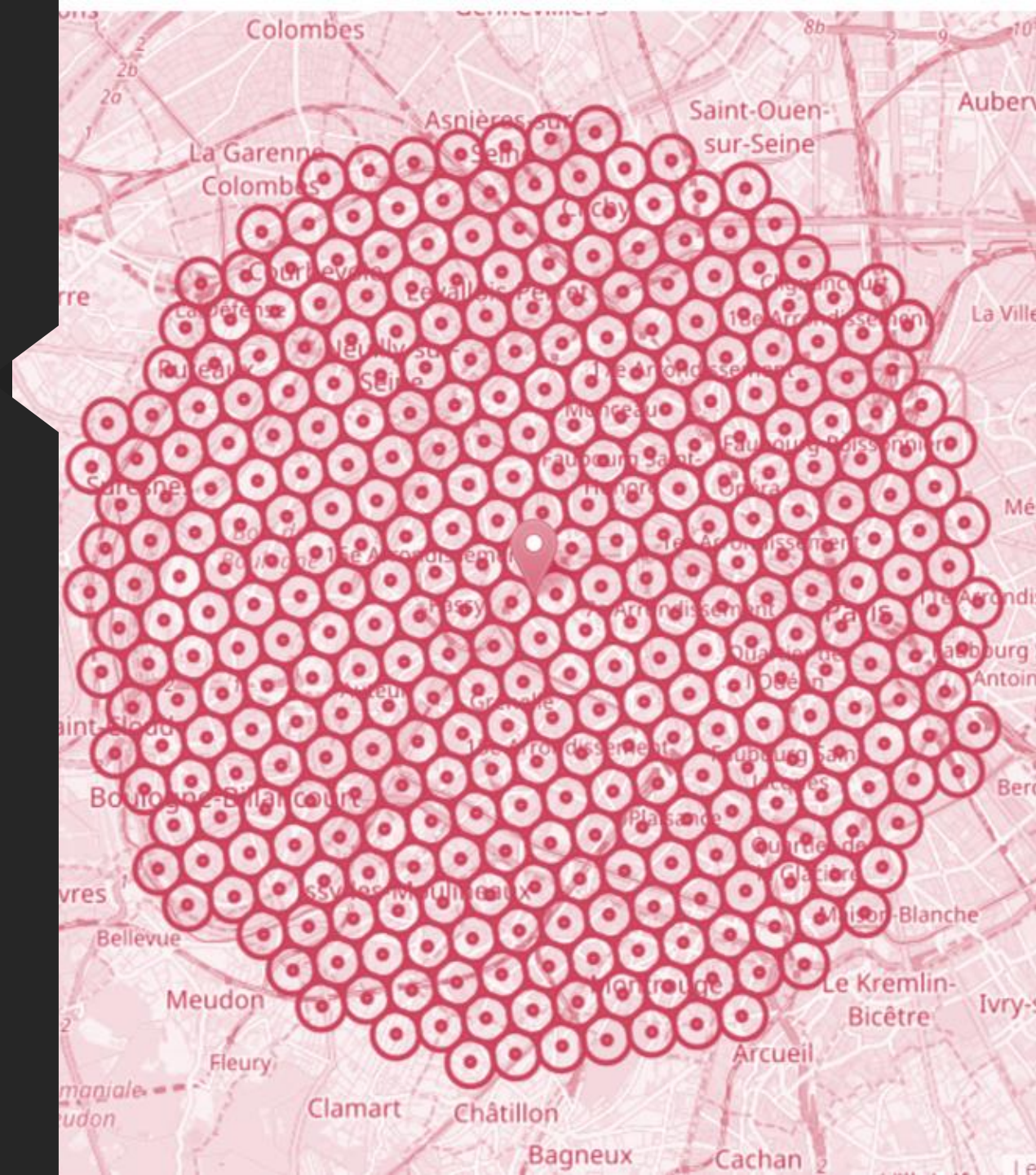
- As we can all assume, Paris has a lot of restaurants. We are planning on opening an **Italian** restaurant, without any of them nearby.
- We will try to find a place where there are fewer of them. Also, that location has to be popular for tourists, because we don't want it to be too far from the city.

Data acquisition and data cleaning

- We have collected our data from the Foursquare API mainly since it had information about latitude, longitude and addresses that we needed
- We have also used <https://france-geojson.gregoireddavid.fr/> in order to obtain information about districts in Paris and label them on our map
- Since most of our data came in correct format, there wasn't much of a cleaning job left to do

Slicing the Paris into little areas

- We have sliced them so that they are equally spaced, centered around city center, and within ~6km from Eiffel Tower



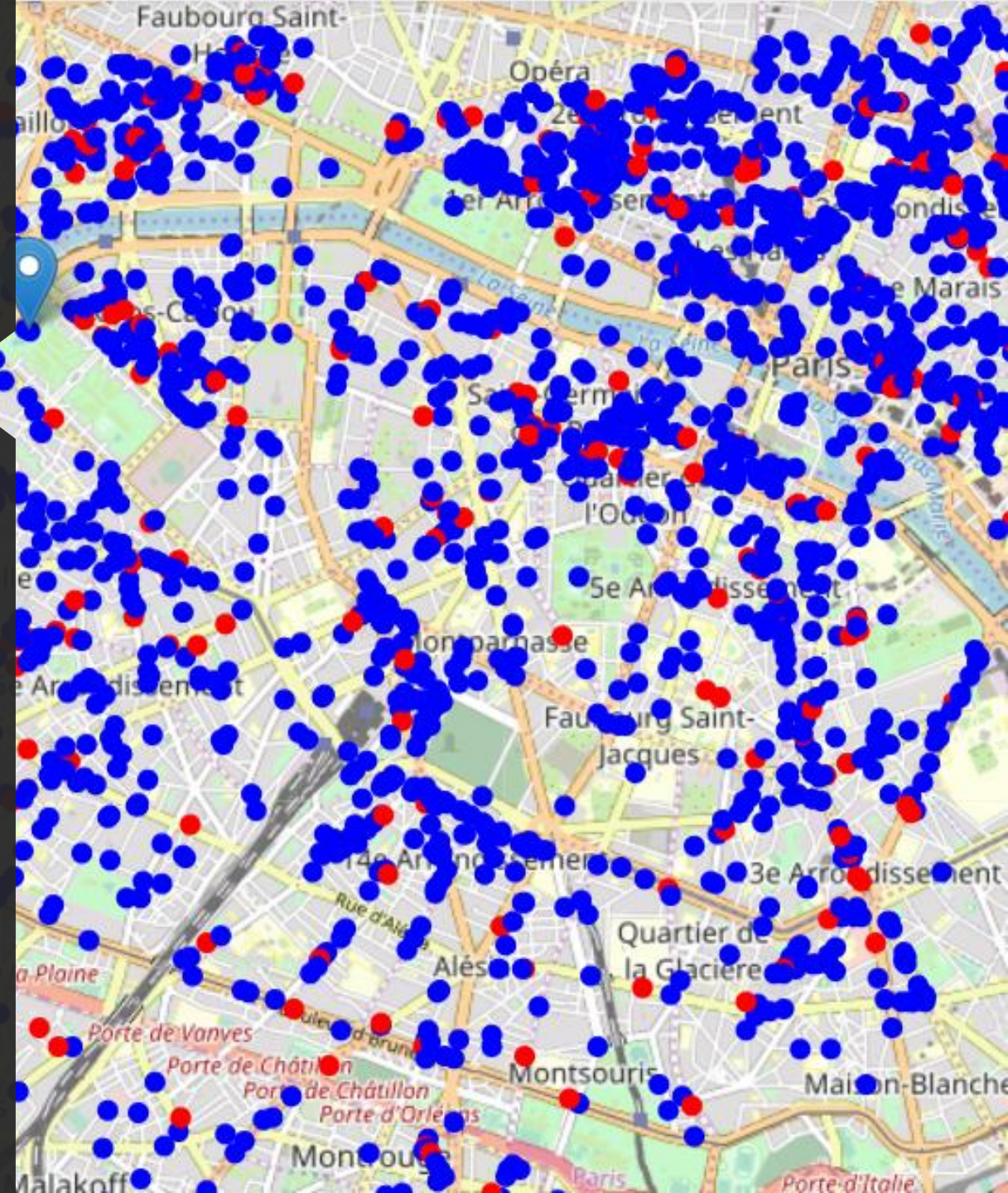
Locations inside our areas

	Address	Latitude	Longitude	X	Y	Distance from center
0	France	48.805421	2.283475	-432670.16604	5.484312e+06	5992.495307
1	Avenue De Paris	48.806315	2.291446	-432070.16604	5.484312e+06	5840.376700
2	France	48.807208	2.299417	-431470.16604	5.484312e+06	5747.173218
3	45 avenue Marx Dormoy	48.808101	2.307389	-430870.16604	5.484312e+06	5715.767665
4	35 Rue Molière	48.808993	2.315361	-430270.16604	5.484312e+06	5747.173218
...
359	30 Rue Chanzy	48.907520	2.273587	-431470.16604	5.495744e+06	5747.173218
360	Rue de la Station	48.908416	2.281574	-430870.16604	5.495744e+06	5715.767665
361	France	48.909312	2.289561	-430270.16604	5.495744e+06	5747.173218
362	Place Marguerite Durand	48.910206	2.297549	-429670.16604	5.495744e+06	5840.376700
363	150 Boulevard du Général Leclerc (Allée de l'E...	48.911101	2.305537	-429070.16604	5.495744e+06	5992.495307

- We have gathered information about the locations inside our areas using the Foursquare API
- The data is interpreted in the data frame format for easier manipulating and reading

Restaurants in Paris

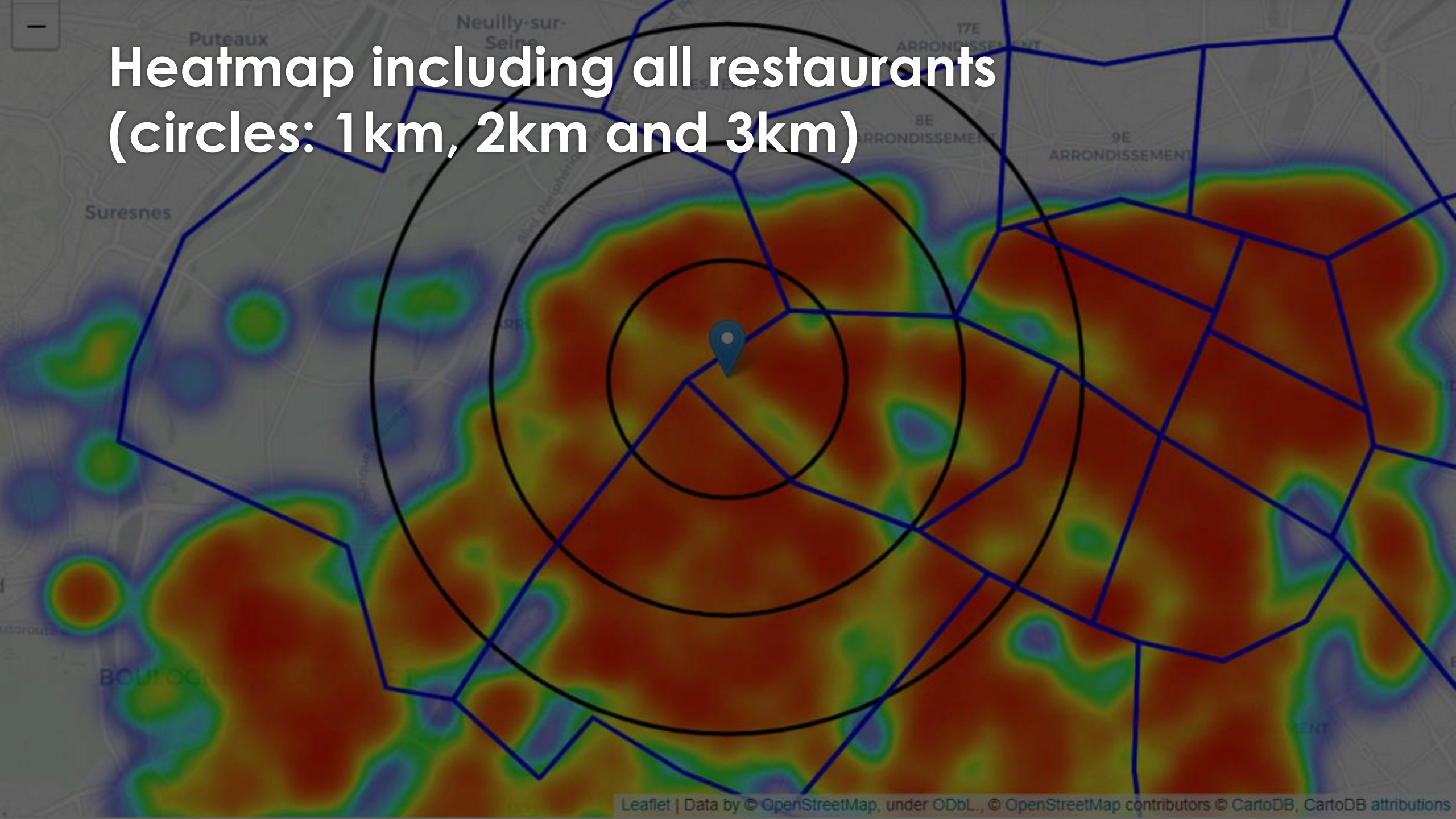
- Blue dots are restaurants other than Italian
- Red ones are Italian restaurants



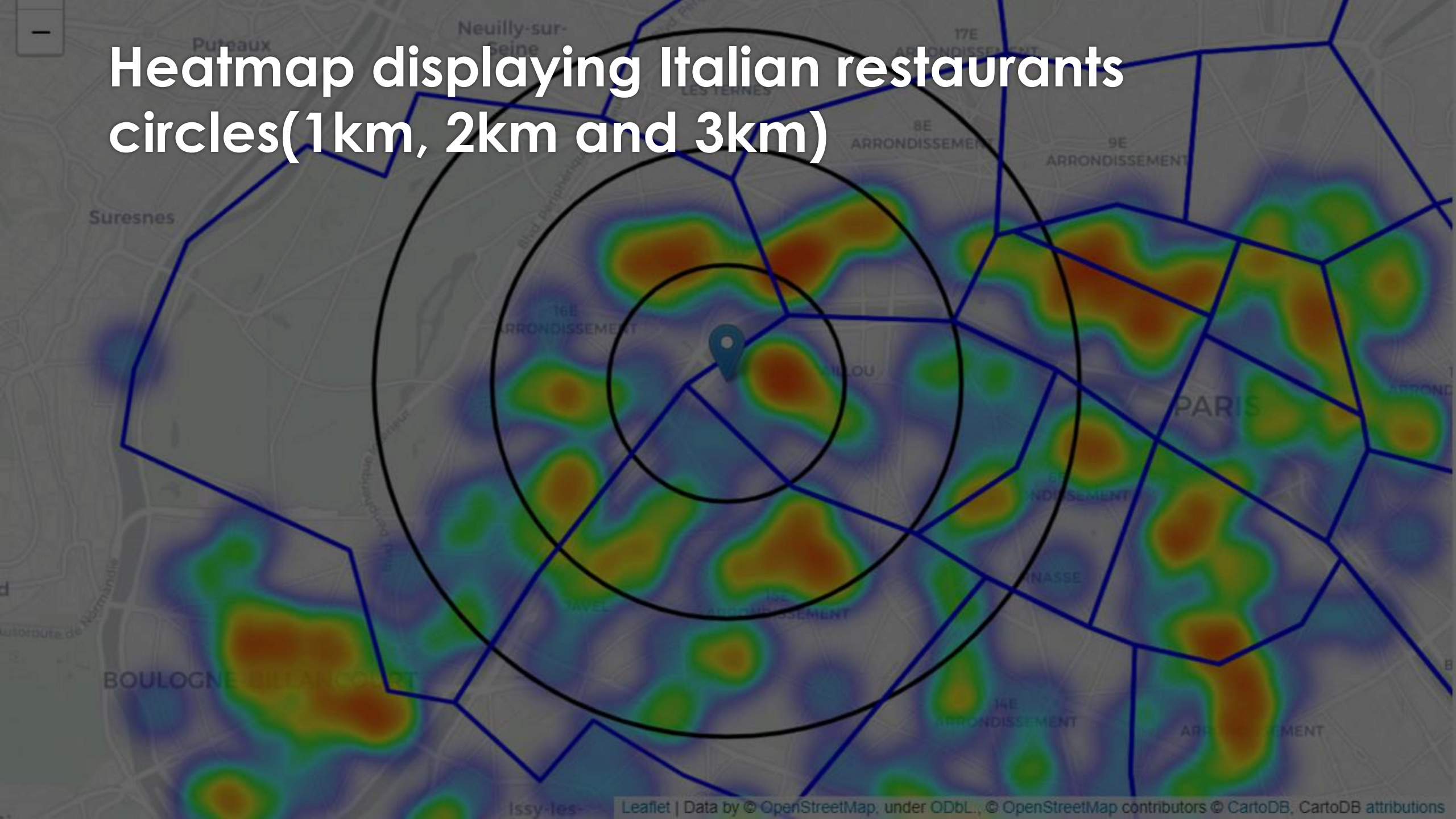
	Address	Latitude	Longitude	X	Y	Distance from center	Restaurants in area
0	France	48.805421	2.283475	-432670.16604	5.484312e+06	5992.495307	1
1	Avenue De Paris	48.806315	2.291446	-432070.16604	5.484312e+06	5840.376700	1
2	France	48.807208	2.299417	-431470.16604	5.484312e+06	5747.173218	3
3	45 avenue Marx Dormoy	48.808101	2.307389	-430870.16604	5.484312e+06	5715.767665	0
4	35 Rue Molière	48.808993	2.315361	-430270.16604	5.484312e+06	5747.173218	3
5	60 avenue Marx Dormoy	48.809885	2.323333	-429670.16604	5.484312e+06	5840.376700	1
6	C.C La Vache Noire (Place de la Vache Noire)	48.810776	2.331306	-429070.16604	5.484312e+06	5992.495307	9
7	92140 Clamart	48.808639	2.270346	-433570.16604	5.484832e+06	5855.766389	2
8	France	48.809534	2.278317	-432970.16604	5.484832e+06	5604.462508	1
9	France	48.810428	2.286288	-432370.16604	5.484832e+06	5408.326913	1

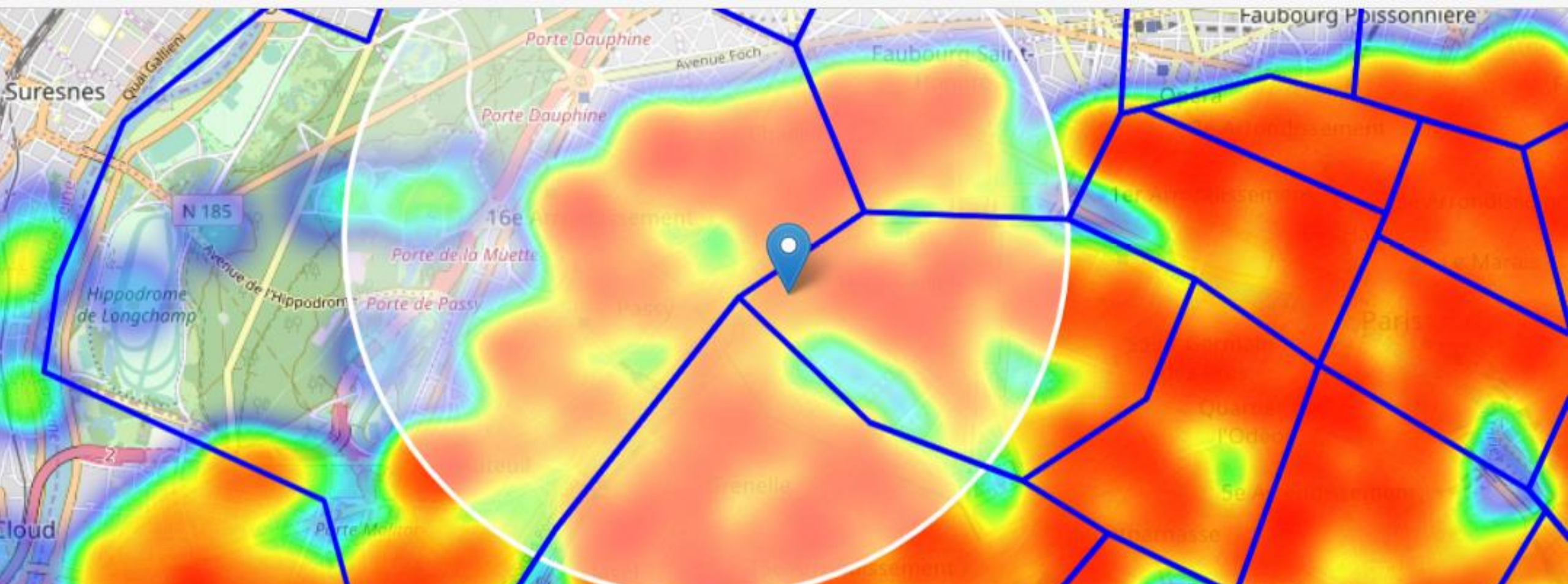
Restaurants nearby our locations

Heatmap including all restaurants
(circles: 1km, 2km and 3km)



Heatmap displaying Italian restaurants circles(1km, 2km and 3km)





Selected area that we are interested in



Clustering available locations

Distance from Eiffel Tower

○ Here we can see distance of available places that have fulfilled the criteria

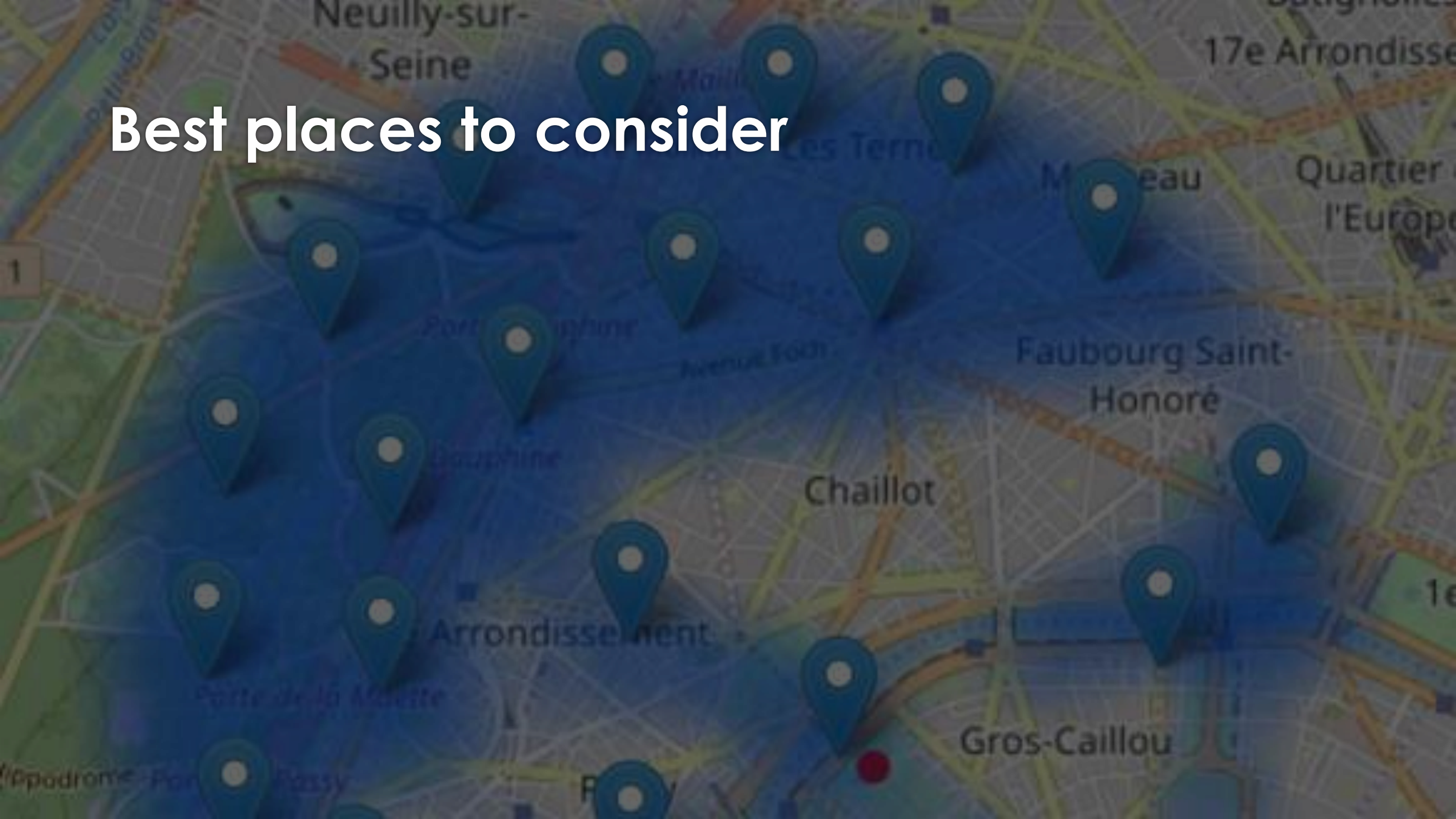
○ Criteria:

1. No more than four restaurants in radius of 250 meters
2. No Italian restaurants in radius of 200 meters

=====
Addresses of centers of areas recommended for further analysis
=====

57 boulevard de Montmorency (Bois de Boulogne)	=> 2.6km from Eiffel Tower
France	=> 1.9km from Eiffel Tower
8 avenue Dutuit	=> 1.8km from Eiffel Tower
Chemin de ceinture du Lac Inférieur	=> 2.9km from Eiffel Tower
58 avenue de Wagram	=> 2.4km from Eiffel Tower
5 avenue Anatole France (Tour Eiffel, 1er étage)	=> 0.1km from Eiffel Tower
14 rue de Monceau	=> 2.2km from Eiffel Tower
14 Boulevard de la Tour, Maubourg	=> 1.2km from Eiffel Tower
21 rue de Sablonville (Rue Montrosier)	=> 2.7km from Eiffel Tower
1 boulevard Lannes	=> 2.0km from Eiffel Tower
22 rue Cortambert	=> 1.1km from Eiffel Tower
Porte de la Muette	=> 2.0km from Eiffel Tower
Place Charles de Gaulle (Avenue des Champs-Élysées)	=> 1.8km from Eiffel Tower
8 avenue du Mahatma Gandhi	=> 2.8km from Eiffel Tower
Avenue du Mahatma Gandhi (Bois de Boulogne)	=> 2.8km from Eiffel Tower
Bois de Boulogne	=> 2.8km from Eiffel Tower
France	=> 2.5km from Eiffel Tower
Maison de la Radio (116 avenue du Président Kennedy)	=> 1.1km from Eiffel Tower
10 Square du Dr Blanche	=> 2.2km from Eiffel Tower
Chemin de ceinture du Lac Inférieur	=> 2.2km from Eiffel Tower

Best places to consider



Thank you!

Luka Sarić,
IT Consultant at Devoteam Serbia