

The Battle of the Neighborhoods

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Business Problem

- In this project I will look at the best possible place to open a pizza place in Madrid. The goal would be to find an area without any or few pizza restaurants in the area combined with a high population density.

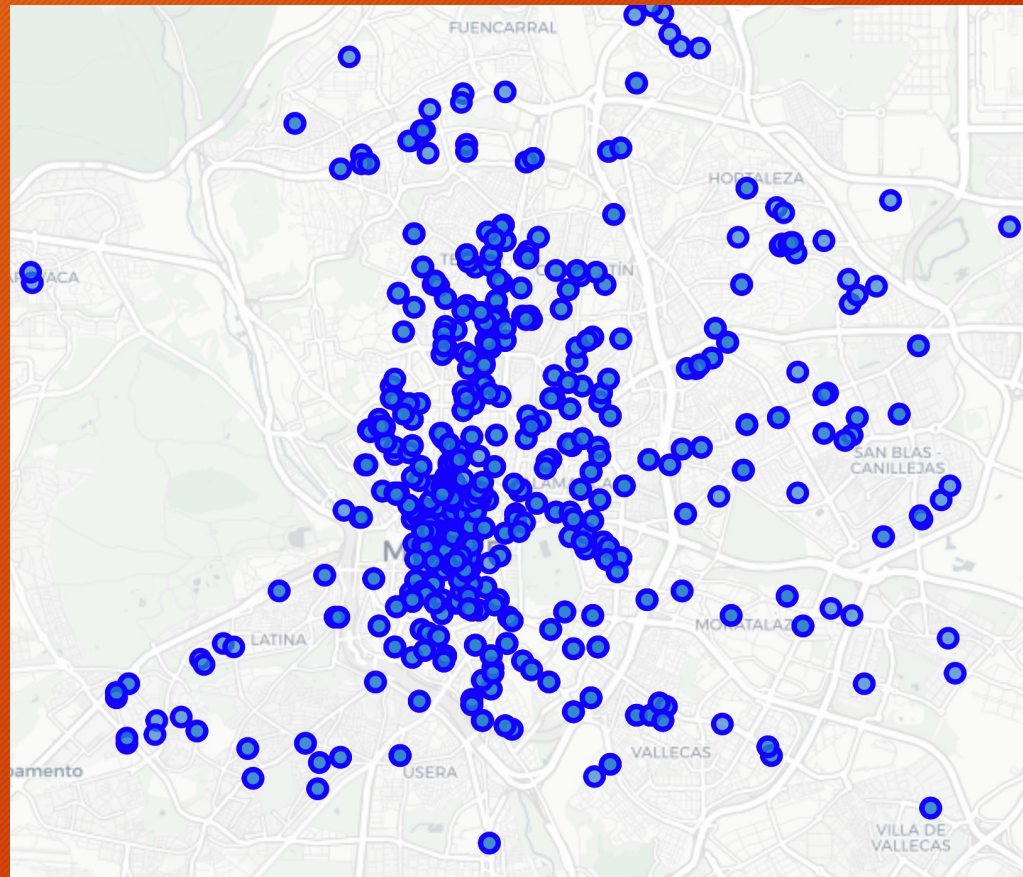
Data

- List of neighbourhoods in Madrid including population and area.
 - Source: <http://www-2.munimadrid.es/CSE6/control/seleccionDatos?numSerie=14010100012>
- Coordinates for each neighbourhood.
 - Source: Geocoder library for Python.
- Pizza restaurants in each neighbourhood.
 - Source: Foursquare API.

Neighbourhood Data

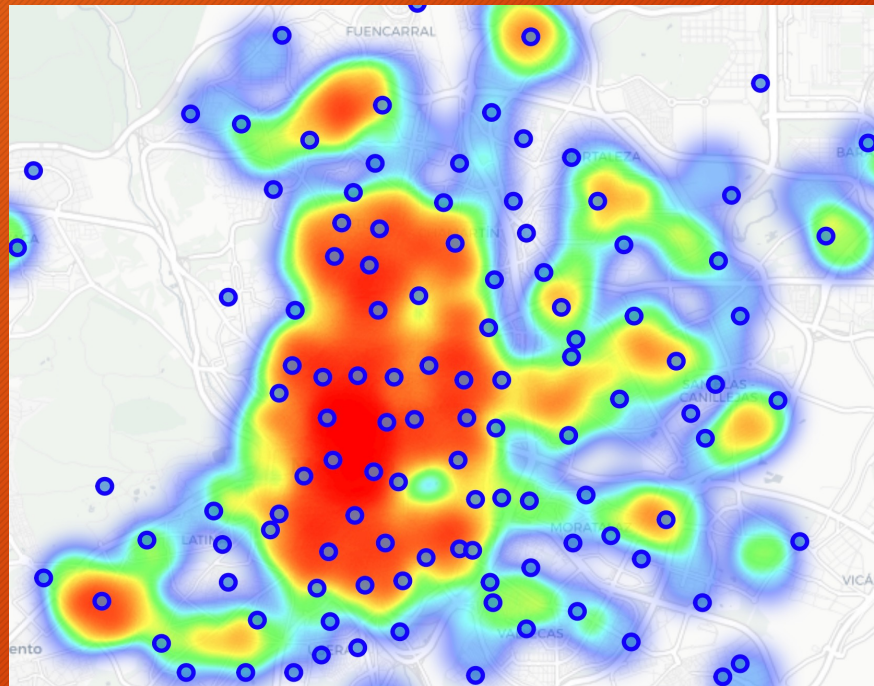
District	Neighbourhood	Area (Ha)	Population	Density
Centro	Palacio	146.99	23593	160.507518
Centro	Embajadores	103.37	47048	455.141724
Centro	Cortes	59.19	10771	181.973306
Centro	Justicia	73.94	18021	243.724642
Centro	Universidad	94.80	33418	352.510549
...
Barajas	Alameda de Osuna	197.03	19820	100.593818
Barajas	Aeropuerto	2962.61	1900	0.641326
Barajas	Casco Histórico de Barajas	54.94	7683	139.843466
Barajas	Timón	509.45	12853	25.229169
Barajas	Corralejos	468.25	7754	16.559530

Pizzerias in Madrid



Analysis

- Heat map to identify promising locations without pizza restaurants.



Analysis

- Sorting the neighbourhoods by number of pizzerias

Neighbourhood	Venue
Mirasierra	1
Corralejos	1
San Fermín	1
San Isidro	1
Ensanche de Vallecas	1
...	...
Embajadores	55
Justicia	63
Cortes	80
Universidad	84
Sol	92

Analysis

- we can calculate the number of pizzerias per population density, which will tell us the places where it would be more interesting to open a pizza place.

	District	Neighbourhood	Density	Venue	Population Density/Pizzerias
20	Retiro	Los Jerónimos	36.959715	40.0	0.923993
9	Arganzuela	Atocha	16.460514	15.0	1.097368
63	Centro	Sol	171.165506	92.0	1.860495
69	Centro	Cortes	181.973306	80.0	2.274666
56	Centro	Palacio	160.507518	45.0	3.566834
...
3	Fuencarral-El Pardo	El Goloso	7.187532	0.0	inf
2	Vicálvaro	El Cañaveral	2.267762	0.0	inf
1	Barajas	Aeropuerto	0.641326	0.0	inf
39	Ciudad Lineal	Colina	116.473111	0.0	inf
0	Fuencarral-El Pardo	El Pardo	0.185091	0.0	inf

Results and Discussion

- A good ratio Population Density/Pizzerias that will tell us, the higher the ratio, the more interesting is to open a pizzeria. Of course once we have that information and we have selected the most interesting neighbourhoods, it is important to look into the heat map to precisely select a location without competition nearby.