

Capstone Project - The Battle of the Neighborhoods (Week 2)

Applied Data Science Capstone by IBM/Coursera

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Introduction: Business Problem

In this project we will try to find an optimal location for a Wine bar. Specifically, this report will be targeted to stakeholders interested in opening a **Wine Bar** in **Paris**, France.

We will try to detect **locations with low Wine Bar density**. We would also prefer animated area, we will looking for **locations close to existing other type of Bar**.

We will use our data science powers to generate a few most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

1- Data

Based on definition of our problem, factors that will influence our decision are:

- number of existing Wine Bar in the neighborhood
- number of other Bars in the neighborhood

Following data sources will be needed to extract/generate the required information:

- We will use administrative Neighborhoods centers giving by <https://opendata.paris.fr>
- number of Wine Bar, other venues, and their type and location in every Arrondissement will be obtained using **Foursquare API**

2- Methodology

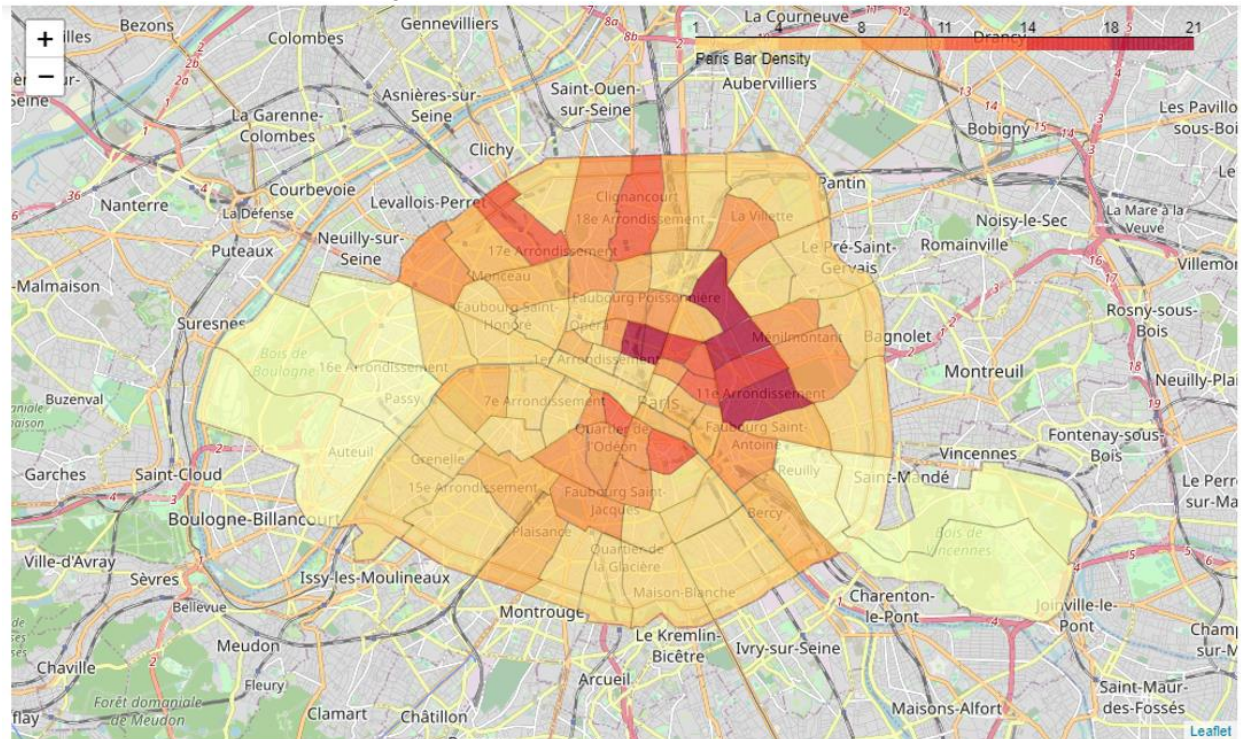
In this project we will direct our efforts on detecting areas of Paris that have **low Wine Bar density**. We would also prefer animated area, we will looking for locations **close to existing other type of Bar**.

In first step we have collected the required data: location and type (category) of every bar in Paris. We have also identified Wine Bar (according to Foursquare categorization).

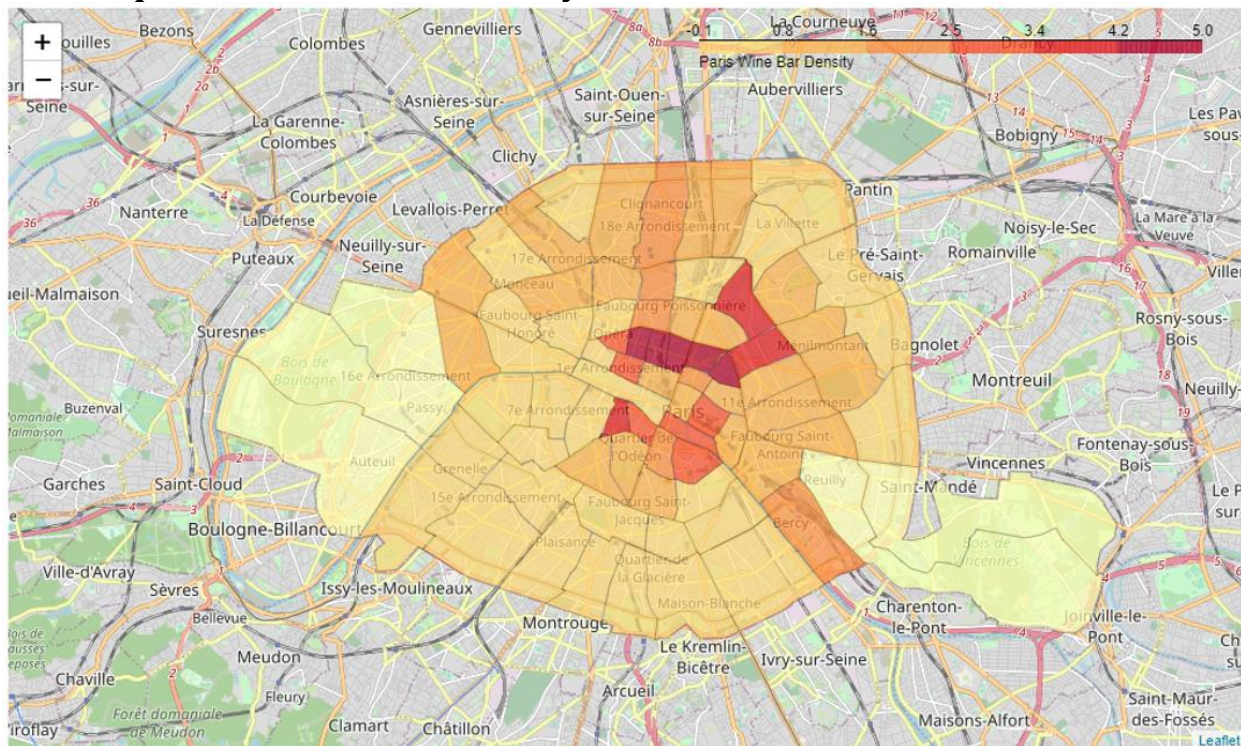
Second step in our analysis will be calculation and exploration of **bar density** across different areas of Paris - we will use heatmaps to identify a few promising and focus our attention on those areas.

3- Analysis

3.1 Visualise Bar Density

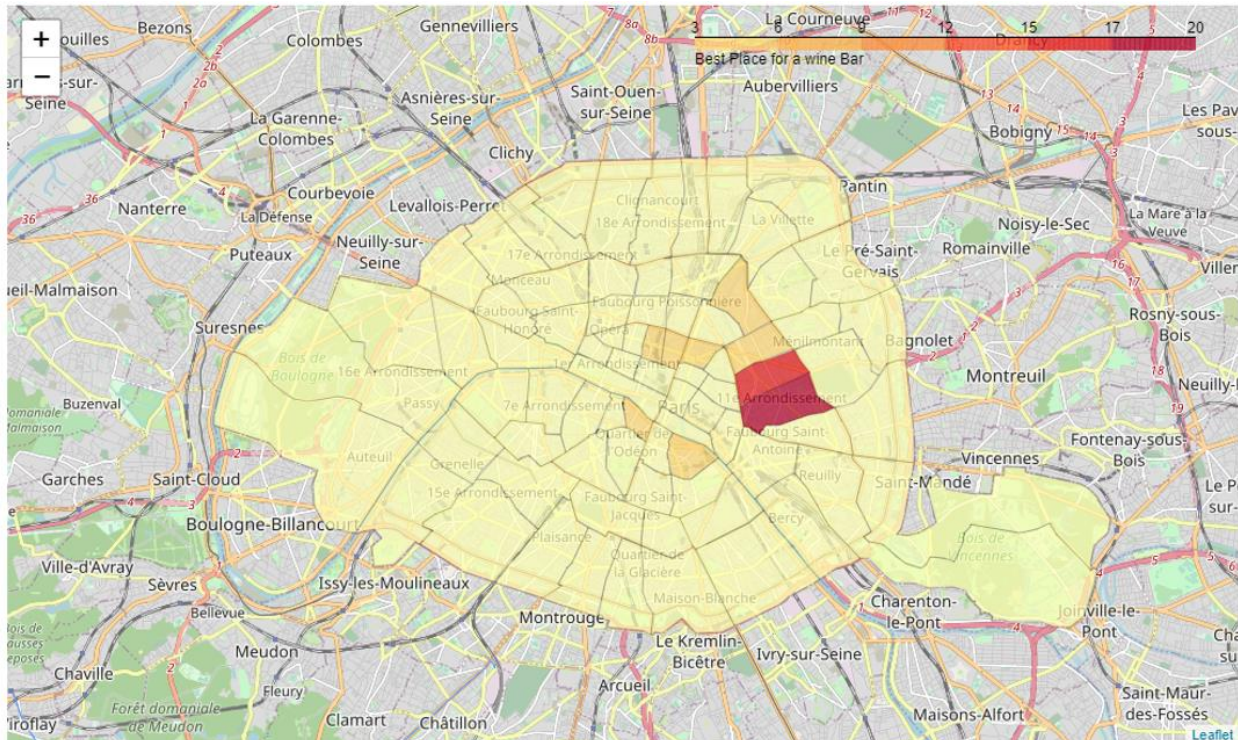


3.2 Compare it to Wine Bar Density



3.3 Create a unique KPI to visualise best place

It was very interesting to visualize Total Bar density and Wine Bar Density but it's not very easy to look at 2 maps. We should limit Wine Bar density on High Total Wine Bar density. Let filter panda dataframe on Total Wine Bar count above 14 and create a new ratio KPI.



Great ! We clearly have 2 very interesting Neighborhood : Roquette and Saint Ambroise.

4- Results and Discussion

Our analysis shows that although there is a great number of Bar in Paris : 506 Bar and Pub including 91 wine bar. There is bar in all Neighborhood but they are concentrate in the city center. Wine Bar after a first analysis looks concentrate in the same area. By the way if we use ratio rather than number of Bar and number of wine Bar we can more easily check the best neighborhoods for a neq Wine bar !

Roquette and Saint Ambroise looks the best place to open a new Wine bar.

5- Conclusion

Purpose of this project was to identify Paris areas with high number of Bar but low number of wine bar in order to aid stakeholders in narrowing down the search for optimal location for a wine bar. By calculating bar density distribution from Foursquare data we have first identified general boroughs that justify further analysis.

Final decision on optimal restaurant location will be made by stakeholders based on specific characteristics of neighborhoods and locations in every recommended zone, taking into consideration additional factors like attractiveness of each location (proximity to park or water), levels of noise / proximity to major roads, real estate availability, prices, social and economic dynamics of every neighborhood etc.

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