

Business problem

My client wants to open a new yoga studio in Paris. The task is to find the best location for it: A neighborhood where there is least existing competition, but potential demand for yoga studio.

Data

The properties of different quartiers as well as the existing yoga studios are searched using the Foursquare Paris data. The city of Paris is divided into 20 arrondissements. However, many of the arrondissements are so large in area that in finding the potential location for a yoga studio it is more appropriate to analyse the Foursquare data on quarter level: https://en.wikipedia.org/wiki/Quarters_of_Paris. There are in total 80 quartiers in Paris (4 in each arrondissements). We scraped the Quarters table from Wikipedia. The geospatial coordinates of the quarters were retrieved using Geolocator.

Methodology

Our approach is to find quarters that are similar in properties – in our case, trending venues – than the quarters with the most yoga studios in them, but in order to avoid competition, we look for quarters that do not yet have yoga studios, or do have very few of those.

We searched the 10 most trending venues at the radius of 500 m from the reference coordinates of each of the quarters. 500 m can be considered a distance you can take in order to go to one's favourite yoga studio. We then divided the quarters into 5 clusters based on their 10 most trending Foursquare venues. We used k-means clustering.

As some of the quarters are small in area, the 500-m circles may in some cases overlap, meaning that same venues may be included in several quarters. This does not matter in our case, as the cluster of the nearby services is most important for the analysis. Also, there may be areas that are not covered by any of those 500-m radius circles.

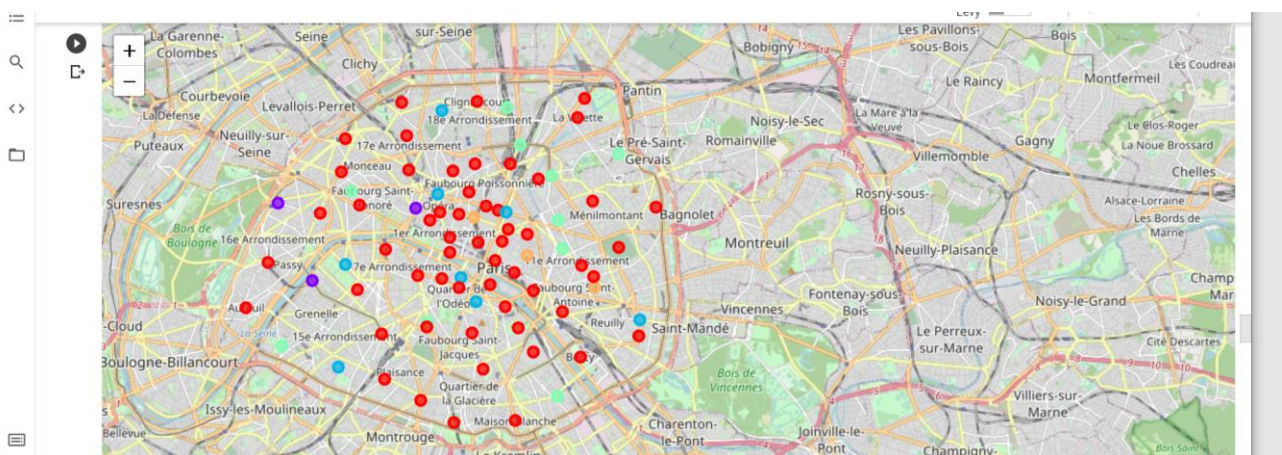


Figure 1. Parisian quarters in five clusters based on their 10 most trending venues.

Results

Based on the Foursquare venues, there are four yoga studios in Paris. They are located in quartiers Notre-Dame, Sorbonne, Folie-Méricourt and Saint-Ambroise.

Conclusions

Based on clustering the Parisian quartiers by their 10 most common venues and finding the cluster where half of the Parisian yoga studios are located, we came up with the following list of quartiers, where there are no yoga studios yet, to look for a suitable space for a new yoga studio. It is to be noted that according to the dataset used, the number of yoga studios in Paris is small and the analysis therefore not very accurate. There may be potential locations elsewhere in the city, too.

Quartier	Arrondissement
Notre-Dame-des-Champs	6e arrondissementdit « du Luxembourg »
Faubourg-du-Roule	8e arrondissementdit « de l'Élysée »
Gare	13e arrondissementdit « des Gobelins »
Javel	15e arrondissementdit « de Vaugirard »
Goutte-d'Or	18e arrondissementdit « des Buttes-Montmartre »
Chapelle	18e arrondissementdit « des Buttes-Montmartre »
Amérique	19e arrondissementdit « des Buttes-Chaumont »
Combat	19e arrondissementdit « des Buttes-Chaumont »