STUDY OF RELOCATION TO THE GREATER PARIS AREA

Coursera IBM Data Science Specialization Capstone Project

May 2019

- High price of accommodation in Central Paris

- People seek to relocate to the Greater Paris Area

- Need to relocate where living conditions are approximately similar to Central Paris

- The purpose of this study is to assist people relocating to the Greater Paris area, provide them information where they can find approximately the same venues as in the city center.

INTRODUCTION – BUSINESS PROBLEM

- **Stage 1** – Acquisition of postal codes, boroughs, neighborhoods and geographic coordinates:
  - For Paris: https://fr.geneawiki.com/index.php/Liste_des_quartiers_de_Paris
  - For suburbs: https://www.annuaire-administration.com/code-postal/region/ile-de-france.html
- **Stage 2** – Acquisition of venues with FourSquare
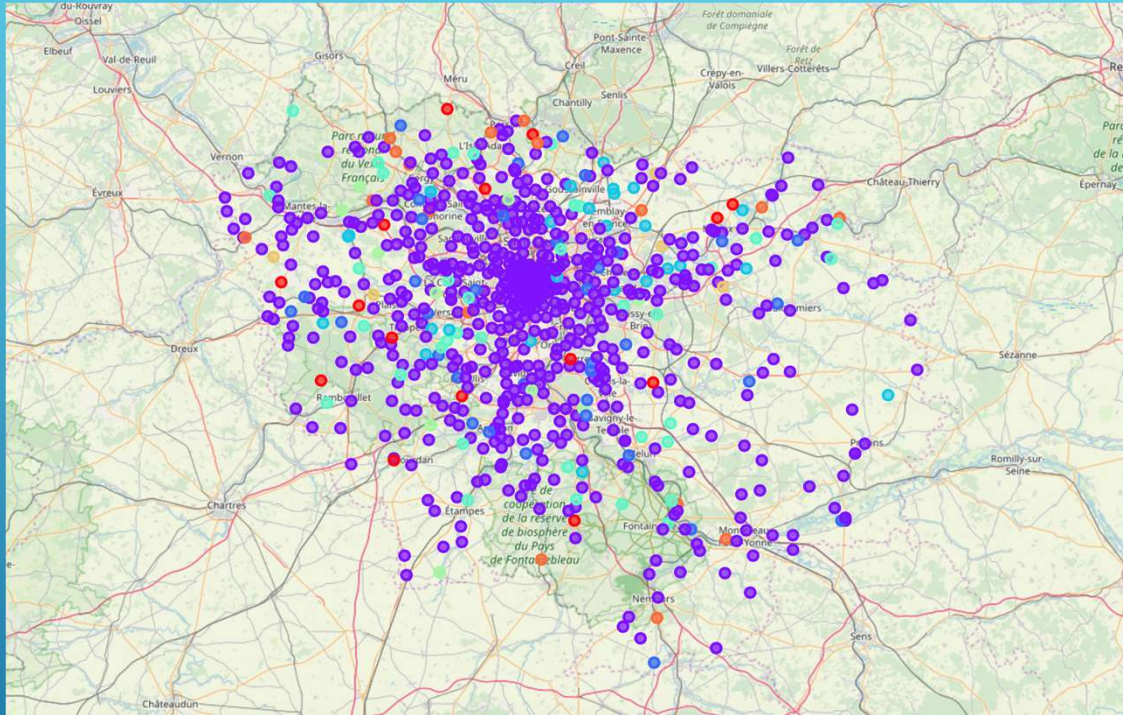
DATA ACQUISITION

GREATER PARIS AREA NEIGHBORHOODS

- Data was prepared using the following methods:
- One-hot encoding of venue types in each neighborhood
- Grouping rows by neighborhood and taking the mean of the frequency of occurrence of each category of venues
- Putting most common venues in a Pandas data frame

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Ablis	Photography Studio	Zoo Exhibit	Eastern European Restaurant	Empanada Restaurant	English Restaurant	Ethiopian Restaurant	Event Service	Event Space	Exhibit	Fabric Shop
1	Ablon-sur-Seine	Bank	Train Station	Hotel	Pharmacy	Zoo Exhibit	Falafel Restaurant	Empanada Restaurant	English Restaurant	Ethiopian Restaurant	Event Service
2	Achères	Sports Club	Locksmith	Italian Restaurant	Plaza	Beach	Farm	Empanada Restaurant	English Restaurant	Ethiopian Restaurant	Event Service
3	Aigremont	Sporting Goods Shop	Golf Course	Pharmacy	Roof Deck	Falafel Restaurant	Electronics Store	Empanada Restaurant	English Restaurant	Ethiopian Restaurant	Event Service
4	Alfortville	Park	Restaurant	Music Venue	Flea Market	Supermarket	Middle Eastern Restaurant	Bus Stop	Outdoor Sculpture	Bakery	Caribbean Restaurant

DATA ANALYSIS METHODOLOGY

- Neighborhoods were clustered into 8 clusters based on **the mean frequency of occurrence of venue types**

- Method of clustering: K-Means Algorithm

DATA CLUSTERING INTO 8 CLUSTERS

TYPES OF VENUES IN THE GREATER PARIS AREA

Number	Title
0	Restaurants of any type of cuisine
1	French Restaurants and other catering facilities
2	Supermarkets
3	Hotels
4	French Restaurants (related to cluster 1)
5	Bakeries
6	Auto Workshops
7	Train Stations (public transport)

RESULTS – CLUSTER MEANING

- Our clusters contain neighborhoods in Paris and in the Greater Paris area.

- In order to guide a person when relocating, I extracted the Greater Paris neighborhoods from each cluster.

- The person can find among them a neighborhood corresponding to his or her preferences based on the venues in the neighborhood this person is relocating from.

RESULTS – CLUSTER COMPARISON

- This study allowed me to compare neighborhoods in Central Paris with Neighborhoods in the Greater Paris Area using venue types for comparison.

- The results can be used as a guide by persons relocating from the Central Paris Area to the suburbs in order to find living conditions similar to those they used to have in the Central Paris.

- Taking into account that many people are currently relocating from central city areas to the suburbs and this trend is becoming wide-spread this study can be extended to other big international cities and the areas around them.

CONCLUSIONS