

**COURSERA APPLIED DATA SCIENCE CAPSTONE PROJECT**  
**The analysis of the opportunity of a click and collect restaurant in Paris**  
*Using web-scraping, Foursquare API, Folium map & machine learning*

This project corresponds to the capstone project of the IBM data science certification. This project offers a good view of what a data scientist does in real life. The goal is to identify a business problem and to solve it with location data, using specifically the online data platform of Foursquare.

In this project, I will respond to a business client issue that would like to open a click and collect restaurant in Paris in the context of the Covid-19 crisis. I want to make a strategic recommendation on which Parisian neighbourhood is the best choice for starting one.

**My analysis process will be in 5 axes:**

- I. I will firstly define the business problem,
- II. Then, I will describe the data sources,
- III. And, I will structure and clean the data that I will analyse,
- IV. I will make the analyse,
- V. And finally, I will make a conclusion and a final recommendation in order to solve the problem.  
This recommendation will help the client to make her final decision.

## I. THE BUSINESS PROBLEM

### Description of the problem and discussion of the background

#### *A. Business decision to whether it is a good idea to open a click and collect restaurant in Paris in 2021*

As the French political and economic capital, Paris concentrates almost 20% of the French population and 30% of the wealth created in France. As the city of lights, Paris also centralizes culture, arts and gastronomy. In this specific case, I would like to estimate if Paris represents the ideal city to start a foodservice business even in the current context. Thus, providing consulting and data science services, I have been contacted by an entrepreneur who would like to open a click and collect restaurant in Paris. As an influencer, she has developed a social media activity based on healthy, rapid and affordable cooking. Due to high demand, she is thinking about extending her activity in 2021 by delivering meals to her followers based in Paris. In the context of the Covid-19 crisis, she would like to know if this project is profitable and what are the most interesting districts in Paris to open her business.

Indeed, the click and collect solution is one of different digital solutions business people have massively developed during the crisis. The business model will be as follows: my client will rely on online pre-commands via her own website that will be promoted and relayed by her social media accounts (Instagram, Youtube and Facebook). She will use a solution like *Clickeat* that provides a system of online commands for click & collect and delivery. Then, she will prepare the meals and finally will deliver it via outsourced partners, so her clients can eat their food at home or at work. She will follow and adapt the model of *Out Fry* from *Tasty* in Paris. Also, with this agile model, she will optimize the management of her stock and will prevent waste. So, the idea will be to create a “ghost restaurant”: a place where the meals will be prepared and then delivered to the consumer.

Furthermore, her ambition presents different challenges. She would like to find a place in the center of highly dense Paris in order to optimize the access to every district and the time of delivery. However, in the geographical target, the real estate cost and the global foodservice competition are very high. Consequently, I will try to take into consideration these factors too in the analysis if possible.

#### *B. Target Audience & interest*

Different people could be interested in this project that will present the profitability, the advantages and the disadvantages of this specific business.

- Business people or entrepreneurs specialized in the catering and the foodservice industry, that want to see the viability of this type of project, and potentially, to adapt their business model taken into question by the current crisis
- Investors interested about this industry and new type of business emerging with the Covid-19 context
- Data scientists and business analysts who want to learn how to use Foursquare and machine learning techniques

## I. THE DATA

### Description of the data and how it will be used to solve the problem

#### *A. Data sources*

For this project, I will mainly combine data of Paris' districts on Wikipedia and data about venues in these districts using the Foursquare API.

- **Source 1: Wikipedia page “Quarters of Paris”**
  - Link: [https://en.wikipedia.org/wiki/Quarters\\_of\\_Paris](https://en.wikipedia.org/wiki/Quarters_of_Paris)
  - This page lists Paris' 20 administrative districts (or arrondissements), the 4 quartiers/districts attached to each, their population in 1999 (too old, it won't be used for the analysis) and their area in hectares.
- **Source 2: Foursquare API**
  - Link: [https://cocl.us/Geospatial\\_data](https://cocl.us/Geospatial_data) (.csv file)
  - The API gives information about location and different venues in Paris. I will obtain names, categories and locations (longitude and latitude) about venues.
- **Other potential source if needed during the analysis: List of click and collect restaurants in Paris on “7 de table”**
  - Link: <https://www.7detable.com/article/nos-cantines/click-and-collect-vente-a-emporter-les-restaurants-qui-continuent-malgre-tout/3174>