CAPSTONE PROJECT
Italian take away in the heart of Amsterdam

1. Introduction

1.1 Background

Italian food is famous worldwide and many people travelling around the world often look for Italian restaurants, especially if travelling in Europe.

This is true also for the locals, who increasingly often want to try something different from their daily diet.

However, as I've been told by the Italian owner of a "Pizzeria" in a small village in the Netherlands, if you want to make the Italian food appreciated by locals, you need to adapt it a little to the locals' taste.

I quite disagree with this sentence, as I am a strong supporter of each country's tradition and for example, I would never try a revisited Japanese dish. But I understand that the globalization got us used to have all at hand and the possibility of trying new experiences prevailed on the real sense of the experience itself.

Aside from these philosophical thoughts, which are not properly linked to data science and to this project but might help in getting my point of view on the problem, the project topic is introduced in the next paragraph.

1.2 The problem

Italians are used to have a structured lunch with more than course, while most people especially in northern Europe usually have a rapid lunch with a sandwich or a slice of pizza. In general, Italian restaurants outside Italy provide for the customers to have a sit and take some time to eat and have a conviviality moment. But this sometimes does not fit with the real needs. Thus, instead of trying to adapt Italian dishes' taste to that of the locals, one could think of trying to serve the Italian food in a more "local style".

The aim of the project is to predict the best location for an Italian take away in the heart of Amsterdam. The shop will be a place where you can buy sandwiches or lunch boxes all made with 100% imported Italian raw materials.

Data that might contribute to determining the best position for the shop might include the proximity to the business and financial districts of the city but also the distance from universities or parks where people could decide to consume the food.

The most promising neighbourhoods will be found based on these criteria and using the data science instruments. Advantages of each area will be finally expressed so that the best possible final location can be chosen by stakeholders.

1.3 Interest

This study is targeted to stakeholders who want to open an Italian restaurant in Amsterdam trying to conciliate the Italian food authenticity with the local culture in an innovative way. Lots of tourists and local workers could be interested in having the possibility of eating some fresh and genuine Italian food during their lunch without having to give up to an open-air break.

2. Data acquisition and usage

Based on the problem definition, factors that will influence the decisions are:
- o number of existing restaurants in the neighbourhood (any type of restaurant)
- o number of and distance to Italian restaurants in the neighbourhood (if any)
- o distance of neighbourhood from city centre
- o distance of neighbourhood from universities and financial district
- o distance of neighbourhood from main parks and green areas

Regularly spaced grid of locations, centred around the city centre, will be used to define the neighbourhoods. To extract and generate the required information, the following data sources will be used:

- o centres of candidate areas will be generated using algorithms and approximate addresses of these areas centre will be obtained using **geopy**, a Python client for several popular geocoding web services
- o the number of restaurants, their type and location in each neighbourhood will be obtained using **Foursquare API**
- o the coordinates of Amsterdam centre will be obtained using **geopy** and the address for the geocoding will be set as that of the well-known Dam Square.

Latitude and longitude coordinates for centroids of the candidate neighbourhoods will be obtained by creating a grid of cells covering the area of interest which is approximately 3x3 kilometres centred around Dam Square.

All data extracted from Foursquare will be cleaned and processed with some basic explanatory data analysis in order to find the best neighbourhood in which stakeholders can invest in an Italian take away, given all the conditions specified.