

# Capstone Project - The Battle of Neighborhoods

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## ABSTRACT

Final Assignment of the Capstone Project - The Battle of Neighborhoods. The subject of the study is the city of Rome, and in particular the optimal location to open a restaurant business.

Keywords: Machine Learning, Clustering, Kmeans, Rome

## 1 INTRODUCTION

### 1.1 Background

Rome is the Capital of Italy and one of the most beautiful and culturally rich cities of the world. Last year, "the eternal city", attracted almost 30 millions tourist from all over the world, which represents the 6.8% of the overall tourism of the entire country. Due to the enormous amount of tourist attractions, the amount of time required to have a decent visit to the city is almost always far higher than the one that the average tourist has. For this reason, being almost always in a rush, there is the need to optimize the times, and usually during lunch the average tourist tries to loose not so much time (and money).

### 1.2 Problem

The aim of this study is to understand which are the zones of the city that are more adapt for the opening of a fast food activity. The idea is to find something that is strategically near to the main monuments of the city, but far from similar venues.

### 1.3 Interest

The main interest is for potential investors that want to open a new activity in Rome, in a part of the city where there is a huge flux of local people and tourists, but without many competitors.

## 2 DATA ACQUISITION AND CLEANING

### 2.1 Data Sources

I used the following data to develop the study:

- Forsquare API to get the most common venues of given areas of Rome. In particular, I searched for restaurants and Fast Foods activities that are near to the main monuments of the city center (like the Colosseum for example);
- A database of the main monuments/sites with their coordinates, that I created using Google maps. See the picture below.

<b>Name</b>	<b>Latitude</b>	<b>Longitude</b>
<i>Colosseo</i>	41.890175	12.492237
<i>Fontana di trevi</i>	41.900962	12.483329
<i>Pantheon</i>	41.898606	12.476833
<i>Piazza di Spagna</i>	41.905746	12.482278
<i>Piazza Navona</i>	41.899116	12.473084
<i>Altare della patria</i>	41.894575	12.483025
<i>Foro Romano</i>	41.892477	12.485083
<i>Castel Sant'Angelo</i>	41.902984	12.466278
<i>Ara Pacis</i>	41.905826	12.4754
<i>Piramide Cestia</i>	41.876452	12.48091
<i>Terme di Caracalla</i>	41.879018	12.492397
<i>Circo Massimo</i>	41.886608	12.484906
<i>Mercato di Traiano</i>	41.895628	12.486204
<i>Tempio di Giove</i>	41.8924	12.482088

**Figure 1.** The excel dataset