Capstone Battle of Neighborhoods: Pharmacies in Lausanne

Data

Lausanne is the capital city and biggest city of the canton (state) of Vaud, Switzerland. Lausanne has an area of aprx 41 square kilometers. With the population of about 140,000, it is the fourth largest city in Switzerland. The data used to solve the problem outlined in this project is geolocation data on pharmacies in Lausanne collected from FourSquare. As Lausanne is located in a French-speaking region of Switzerland, the queries were adapted to search names in French. Data on pharmacies is a dataframe containing at least a location of each pharmacy.

Machine learning technique Heatmap plugin using Kernel Density Estimation will be used to create a density map of pharmacies in Lausanne.

Ideally, data on pharmacies revenue and profitability would be important to inform decisions. Unfortunately, such data are not available and therefore assumption is made that all pharmacies have acceptable revenue and profitability. Therefore, there will be no attempt to optimize – ie consolidate – pharmacies in high-density areas. Areas with high-density of pharmacies will be considered as successful neighbourhoods (locations) for benchmarking.

Based on the density map, the neighbourhoods with low density of pharmacies will be selected for further analysis. Selected neighbourhoods will be compared to successful neighbourhoods (high-density as defined above). The data on selected neighbourhoods will be obtained from FourSquare.

k-means Clustering will be used to cluster neighborhoods to inform the decision where to open new pharmacy.