Predicting neighborhoods

with exclusively high risk of credit card fraud

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1. Introduction:

1.1. Background:

As economy grow and online payment become prevailing, credit card fraud also finds its way to expand. Theft by use of or counterfeit of credit card, for example, are very common forms of credit card fraud. However, instead of a one-sided game, markets around the world also find their way to fight back. Unfortunately, the winning in some countries leads to the misfortune of their surrounding countries as the case in Europe. According to the report of FICO (a company providing card alert service) in 2017, drop in the successful fraud rate in UK and France has possibly led to the rise of success fraud rates in Austria, Denmark, Norway, Sweden, Poland and Russia. Therefore, capability to predict the neighborhoods with high risk of credit card fraud should be very helpful for financial industries and government of these vulnerable countries to fight against the upcoming fraud.

1.2. Problem

Primary venues of a neighborhood might have great influence on the risk of credit card fraud. For example, neighborhoods with many financial facilities or shopping places could be fraudsters' favorite spots. Therefore, here we aim to build a model to predict the risk of credit card fraud of neighborhoods based on data of venues scraped from the Foursquare API. In this project, we will train the model with San Francisco data, and evaluate the model performance with Chicago data.

1.3. Interest

Successfully predicting the neighborhoods with high risk of credit card fraud could help local government get prepared in advance to protect citizen from the risk. For financial institutions, they could invest more effort in monitoring transactions within the neighborhoods of exclusively high risk to enhance their efficiency of detecting credit card fraud.