

# Location, Location, Location

Where should I (not) open a restaurant?

Yann Miquel

# Introduction

---

I found a location without any restaurant:

Is it a GOOD or a BAD place to open a restaurant?

# Introduction

---

A place without restaurant can be:

- A non-profitable place for a restaurant
- A good opportunity for the 1<sup>st</sup> incumbent (no competition)

# The set-up

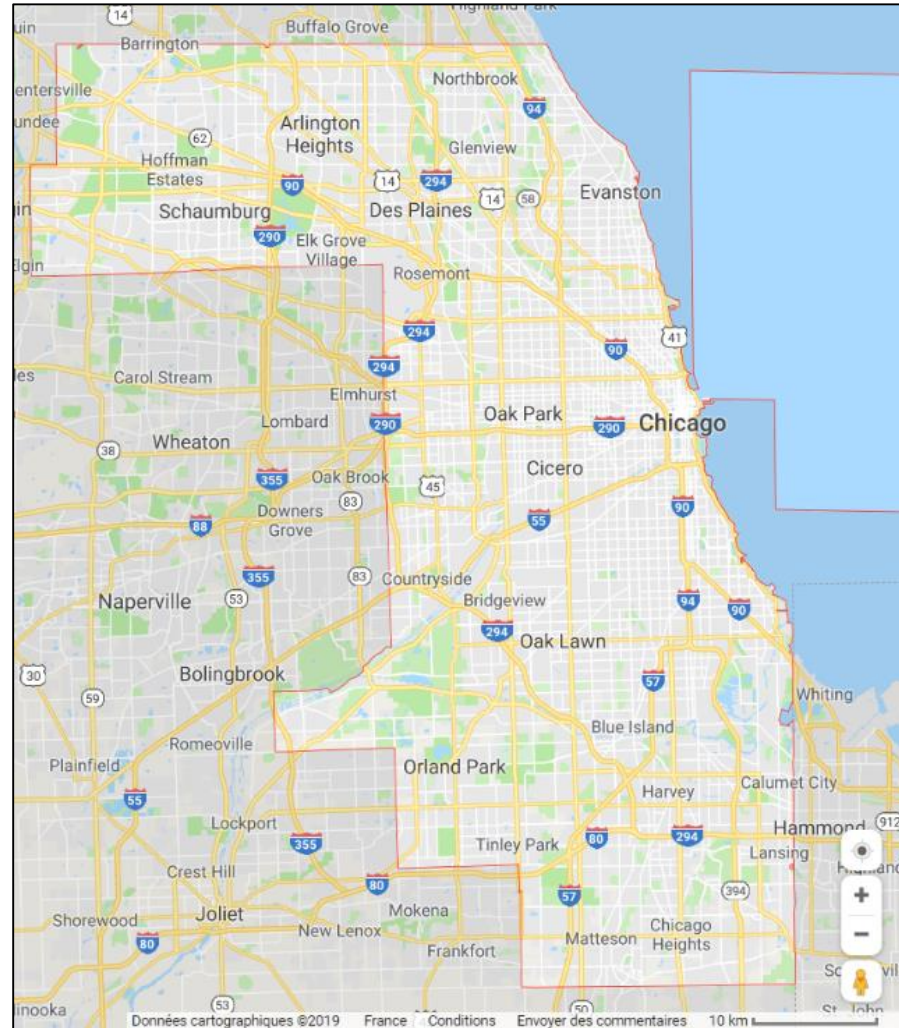
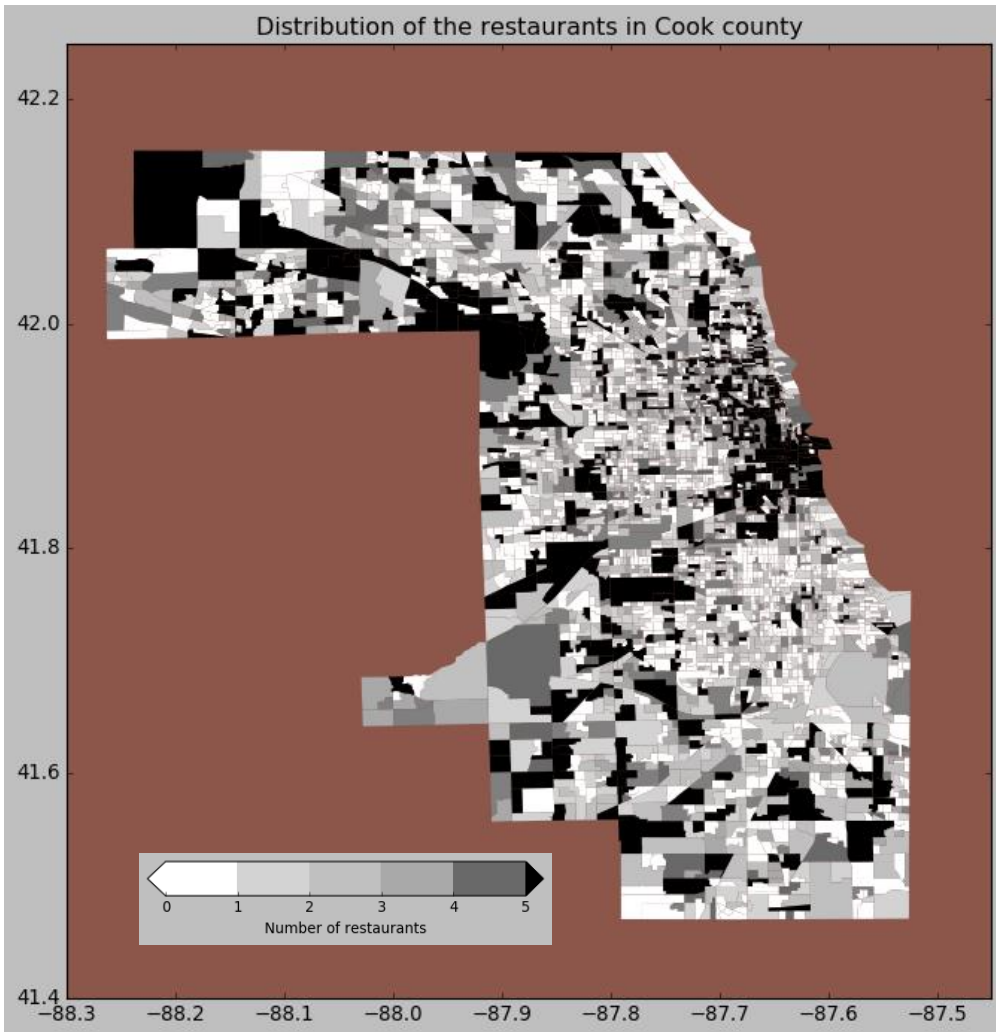
---

Chicago area (Cook county): 3991 locations (Census Block Groups)

Data used:

- Census data: population size, median age, occupation
- Safegraph: visit patterns and GPS coordinates for the Census Blocks
- Foursquare: the number of restaurant in each location

# Restaurants distribution



# Approach

---

I discard the number of restaurants and only code the presence of any restaurant in the area.

Using available information, I forecast the presence of restaurants using 3 models: SVM, Random Forest, and Logistic

I compare the prediction of the model to the actual number of restaurants observed.

# Approach (cont.)

---

The evaluation is done comparing the place without rest. and the place with more than 3 restaurants.

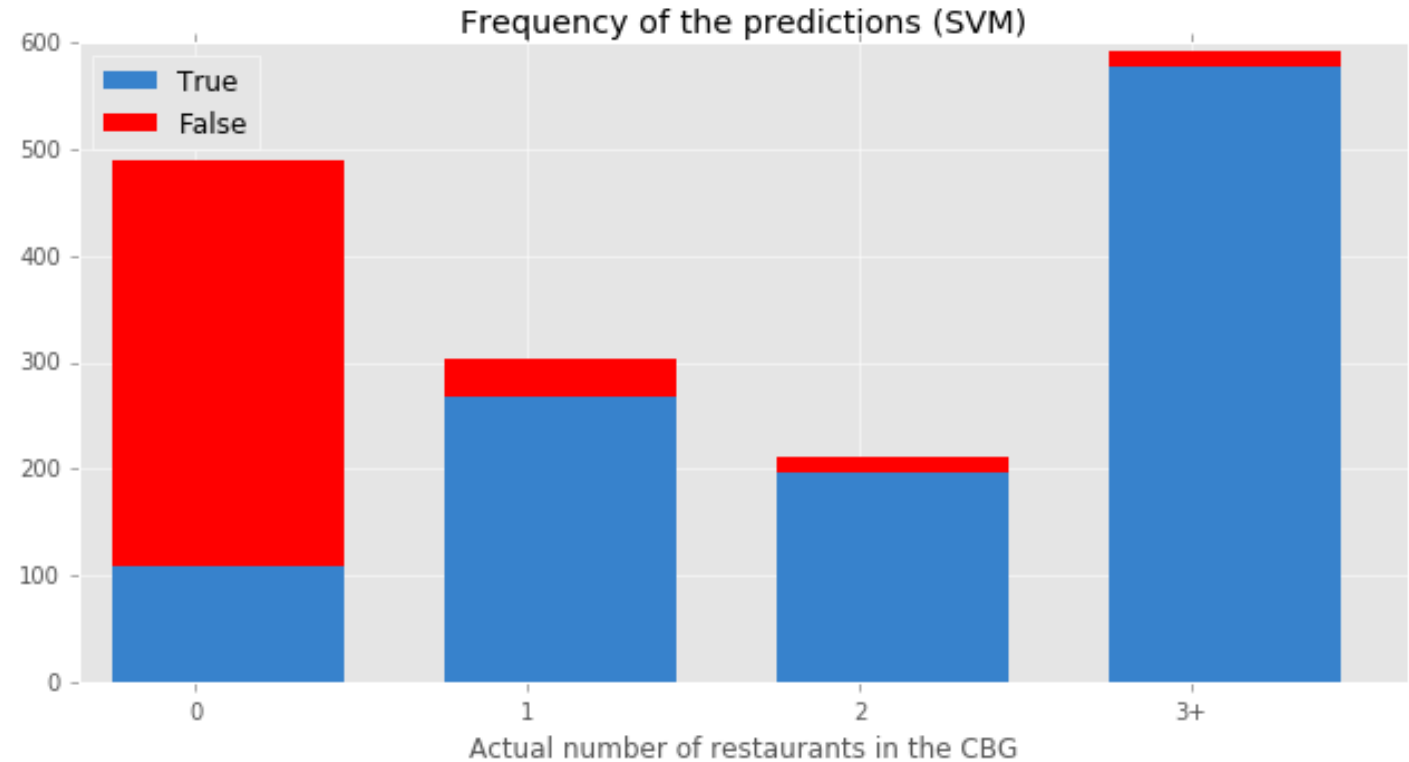
3+ restaurants indicate a true 'good' place for a restaurant.

# Results - SVM

A lot of false predictions for the CBG without any restaurant.

Precision = 73%

A good recall score for the CBG with more than 3 restaurants (97.5%)



The idea:

To use this model to predict where NOT to open a restaurant.

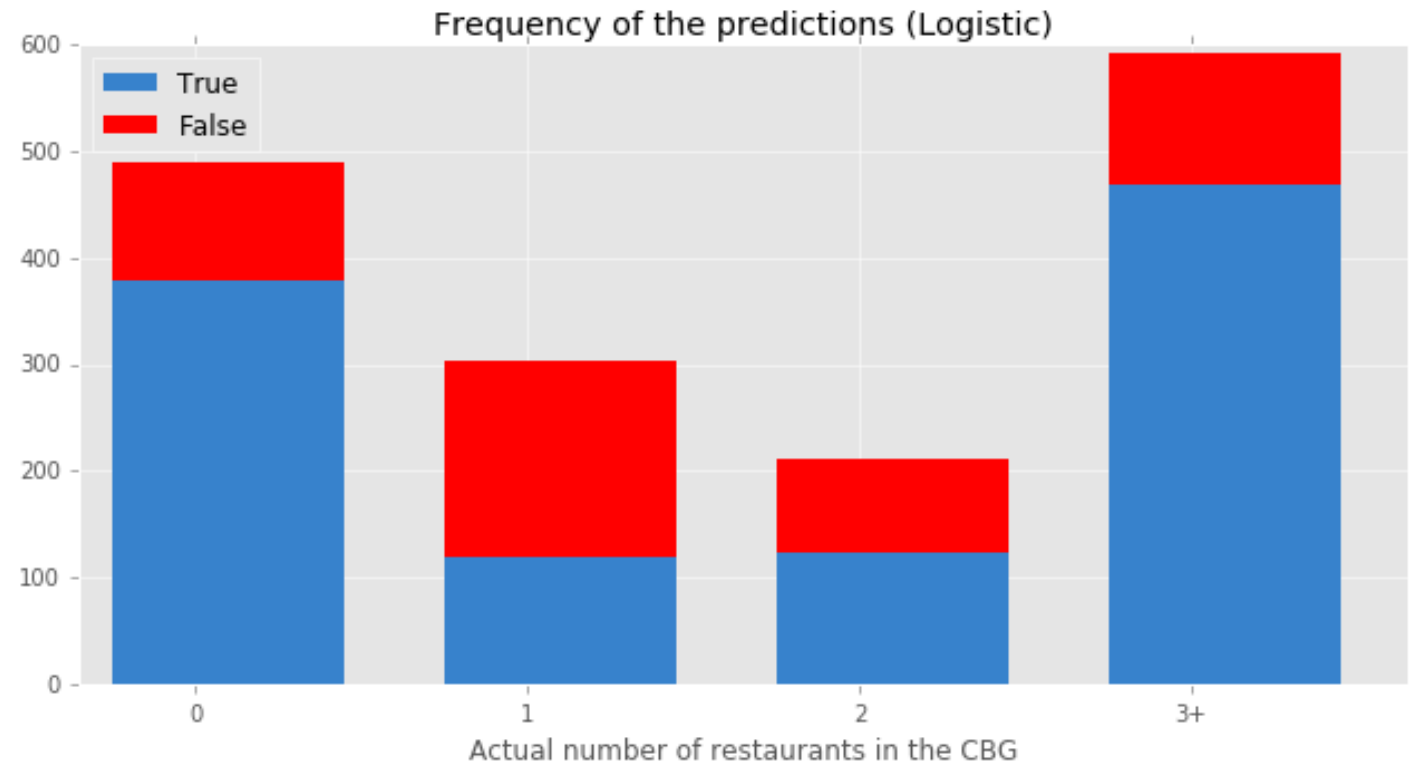


# Results – Logistic

Much better to predict a negative outcome than the SVM

Precision = 86%

A worst recall score for the CBG with more than 3 restaurants (79%)



The idea:

To use this model to predict where to open a restaurant.

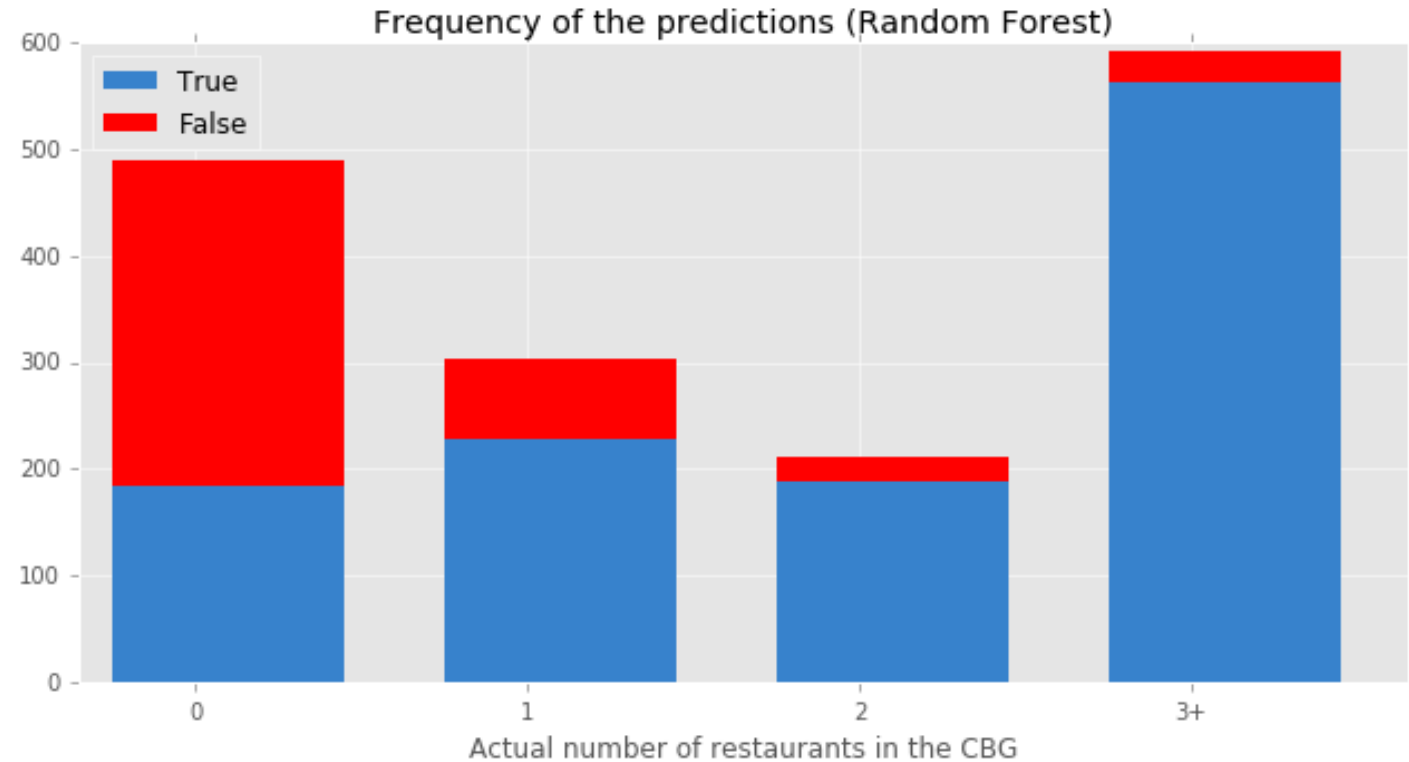
# Results – Random Forest

The in-between model:

Slightly better to predict a negative outcome than the SVM

Precision = 76%

A good recall score for the CBG with more than 3 restaurants (95%)



The idea:

To use this model to confirm the predictions of the other two.