

# Classification of Blighted or Non-Blighted Houses in Detroit

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**2016 summer the Data Incubator Capstone Project**

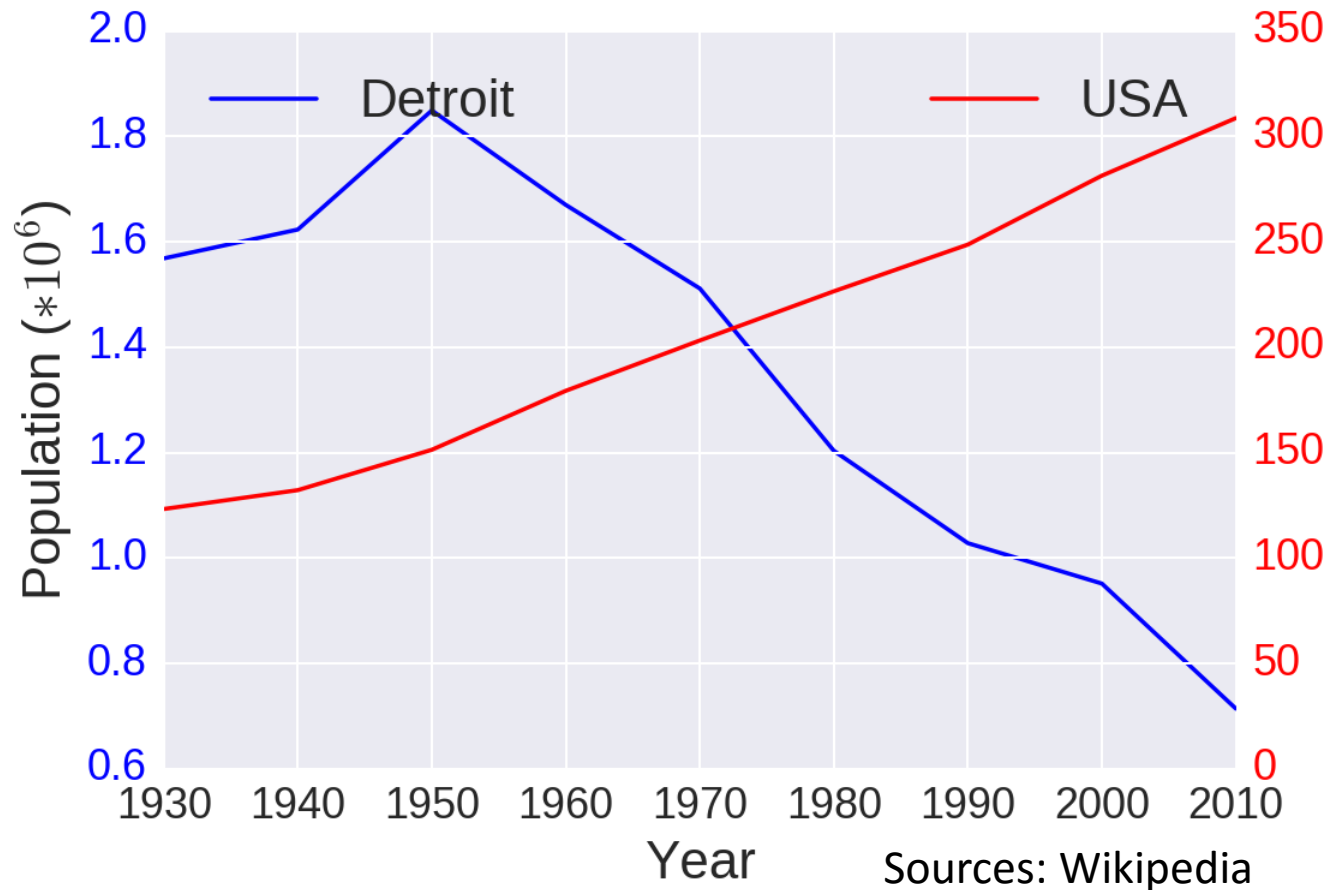
# Detroit

**In the past, prosperous**



**Now in Bankruptcy from 2013**

# Decrease of Detroit's Population



The population in Detroit has dropped **from ~1.8 M in 1950 to ~0.7 M in 2010.**

**Houses or Buildings have been abandoned or blighted.**

# Blighted Houses



5064 Baldwin St (from Google Map)

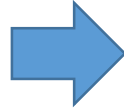
- Threat to public safety
- More blighted houses

**Blight Removal Project began in 2014.**

# Data

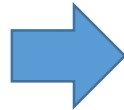
## Publically available

- a. Demolition permits
- b. Blight violation tickets



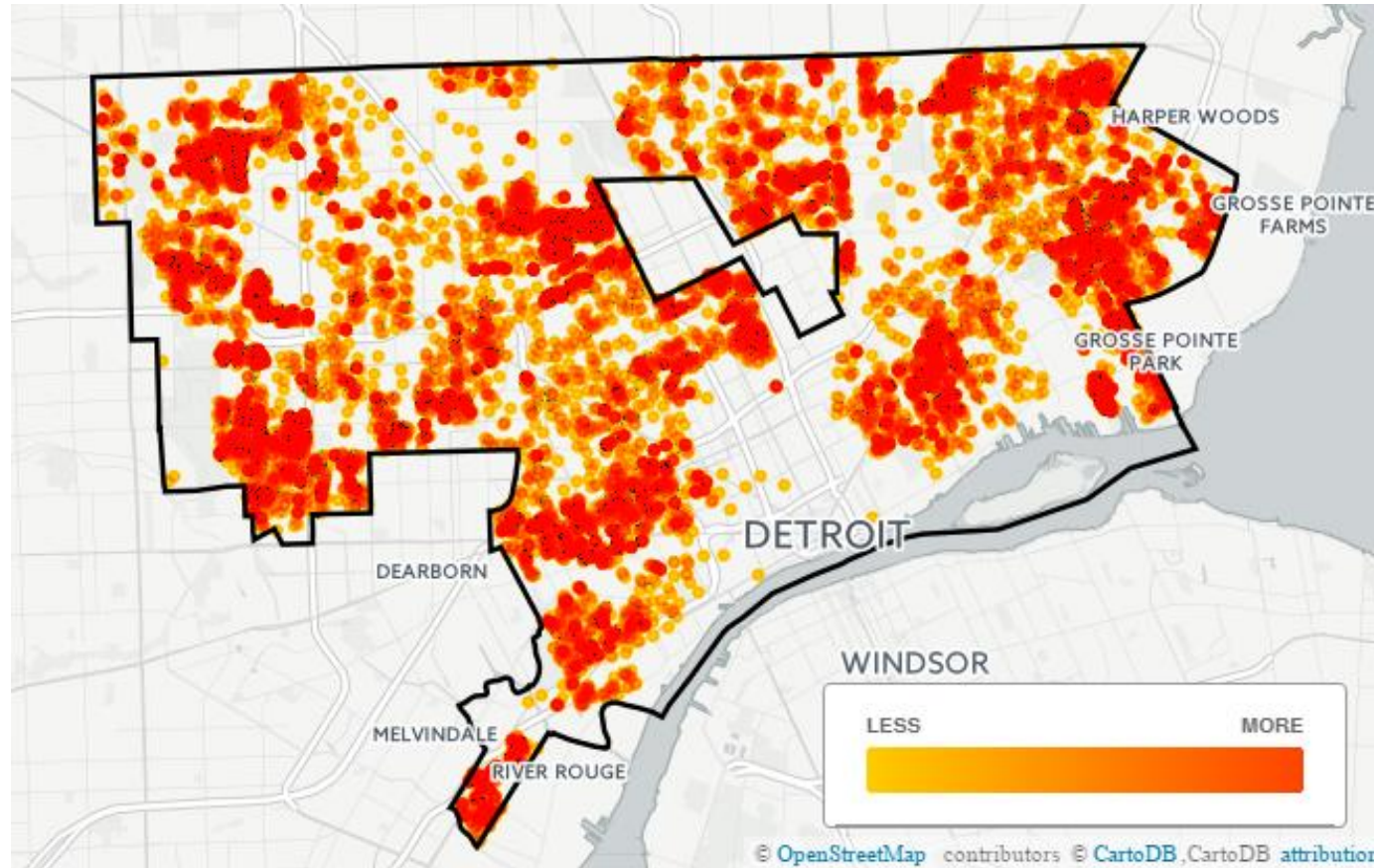
**Building IDs with Address,  
Latitude, and Longitude**

- c. Crime
- d. 311 calls



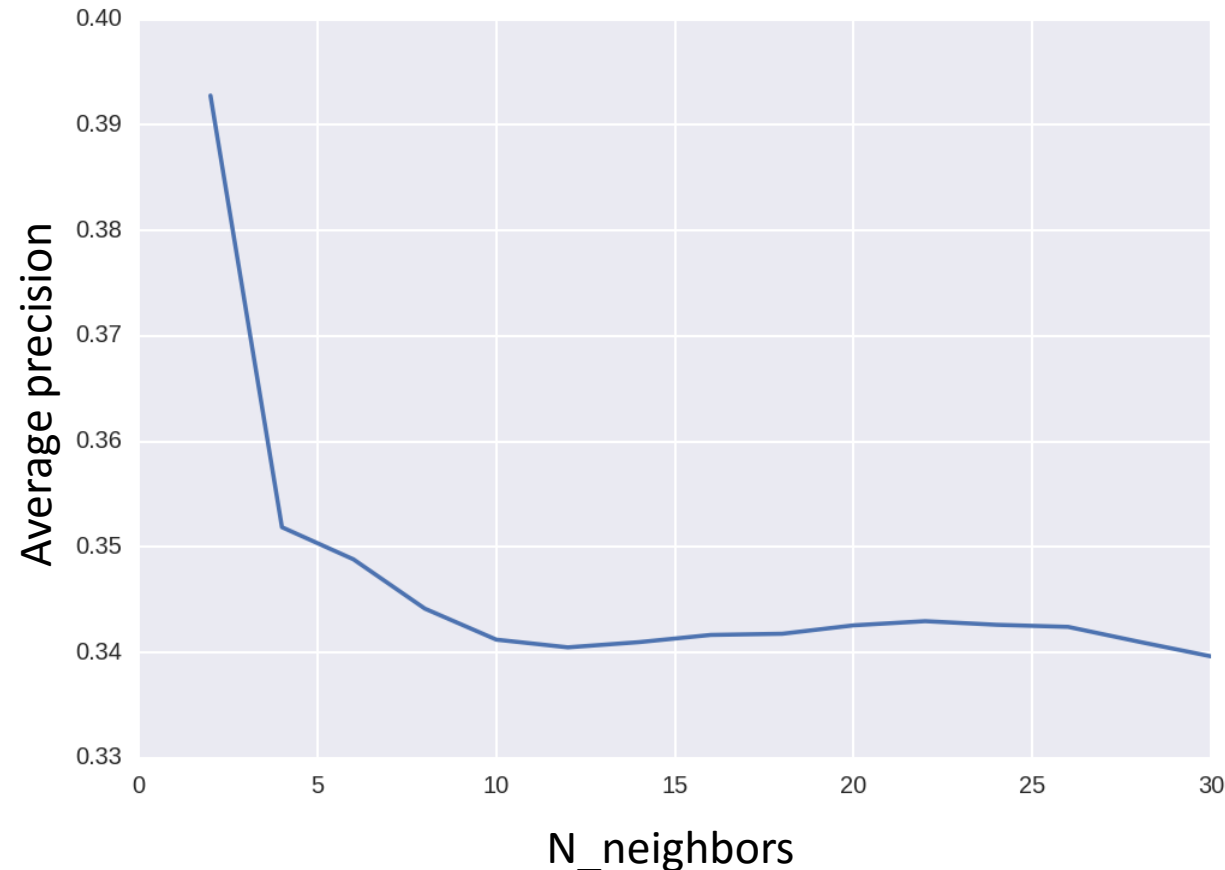
**Features for Building IDs**

# Intensity Map of Blighted buildings



**Blighted buildings are distributed in most area of the city but they are localized in certain regions.**

# K-Nearest Neighbor Classifier with Latitude and Longitude



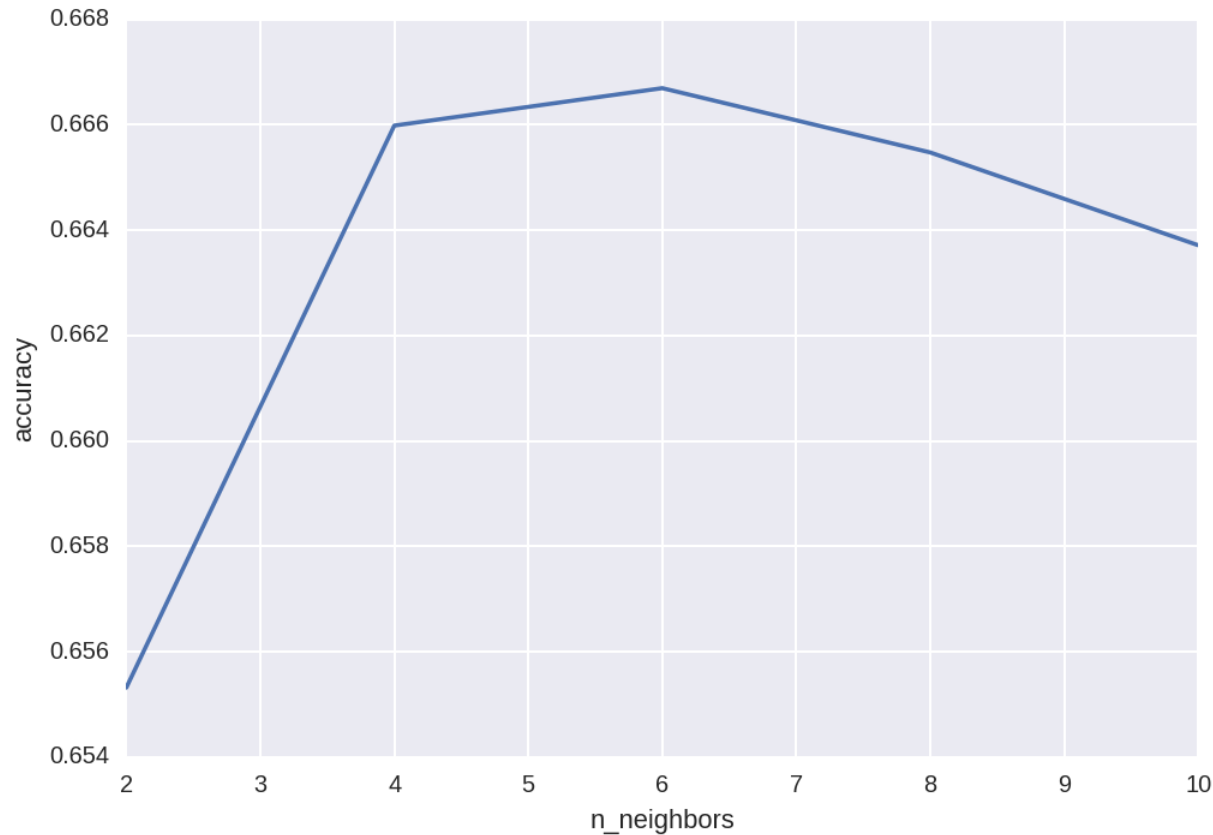
**Poor Precision !**

**Precision < 0.5.**

**Blighted houses are mixed with  
Non-Blighted houses.**

# K-Nearest Neighbor Classifier

Latitude, Longitude, the number of Violation Tickets, the number of Crimes, the number of 311 calls



**Better Precision !**

Best: n\_neighbors = 6

Test data

precision = ~0.7



# Next plan

- **Add more features**
- **Test different algorithms such logistic regression with regularization**

**Thank you very much!**

**Kwang Ho Hur**