EagleEye: A Crowdsourcing social media crime related App

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CSI 431 - Data Mining

Introduction

- Social Media (Twitter, Facebook, Youtube, and the blogosphere)

Motivation

- Can we extract crime information from the social media?

Applications

- Crowdsourcing crime visualization

Applications

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  - Crime information from the social media

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  - Crime information from the social media
  - Crime information directly from the users

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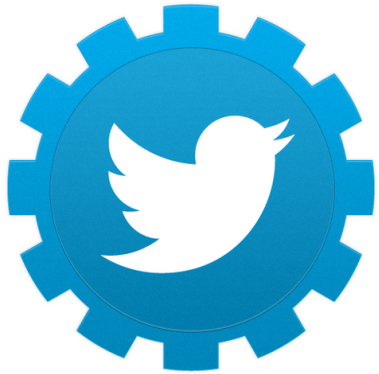
  - A espace safety route is provided to the user
  - The police can be notified

Social Media Crime Information Extraction

1. Crawl tweets from Twitter



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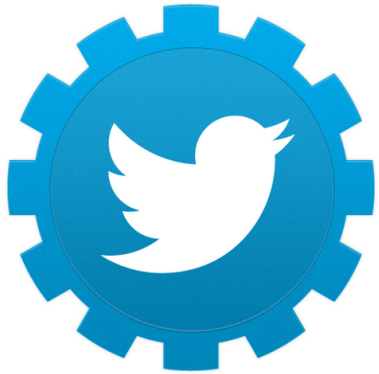
2. Classify tweets in related to crime or not



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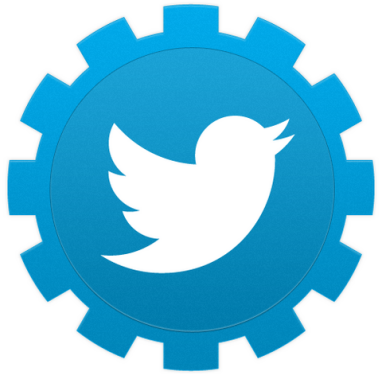

Social Media Crime Information Extraction

1. Crawl tweets from Twitter
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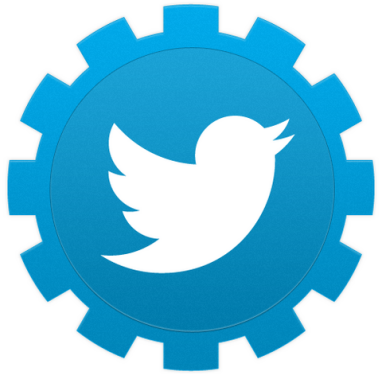
3. Determine the type of crime
4. Extract Location of tweet



Crawl tweets from Twitter

- Streaming API
  - New York city region
  - Keywords related to crime

Classification of tweets

- Training Data
  - 14094 tweets manually labeled (5837 positives, 8257 negatives)
  - Types of Crimes:
    - Robbery, Shooting, Theft, Assault
    - Burglary, Vandalism, Arson, Drug Possession

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- Classifier of type of crimes Statistics
  - Precision: 0.92 (+/- 0.01)
  - Recall: 0.93 (+/- 0.01)
  - F1 Score: 0.93 (+/- 0.01)

Extract Location of Tweet's text

- Preprocessing

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  - Lowercase

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- Match street addresses
- Match state names

Questions ?