Yelp Review Data Prediction Part I

Cecily Liu Tingting Liang Richard Yuan

Content

- Overview
- Text
  - Language
  - Cleaning Procedure
  - Length of Characters
  - Special Punctuation
- Categories
- Future work plan

Data Overview

- **Overall:** 1546379 obs. of 8 variables
  - stars; name; text; date; city; longitude; latitude; categories

- **Names & location & date**: not considered

- **Categories:** 606 in train data and 611 in total
- **Text:** 464938 words in total after first step data cleaning

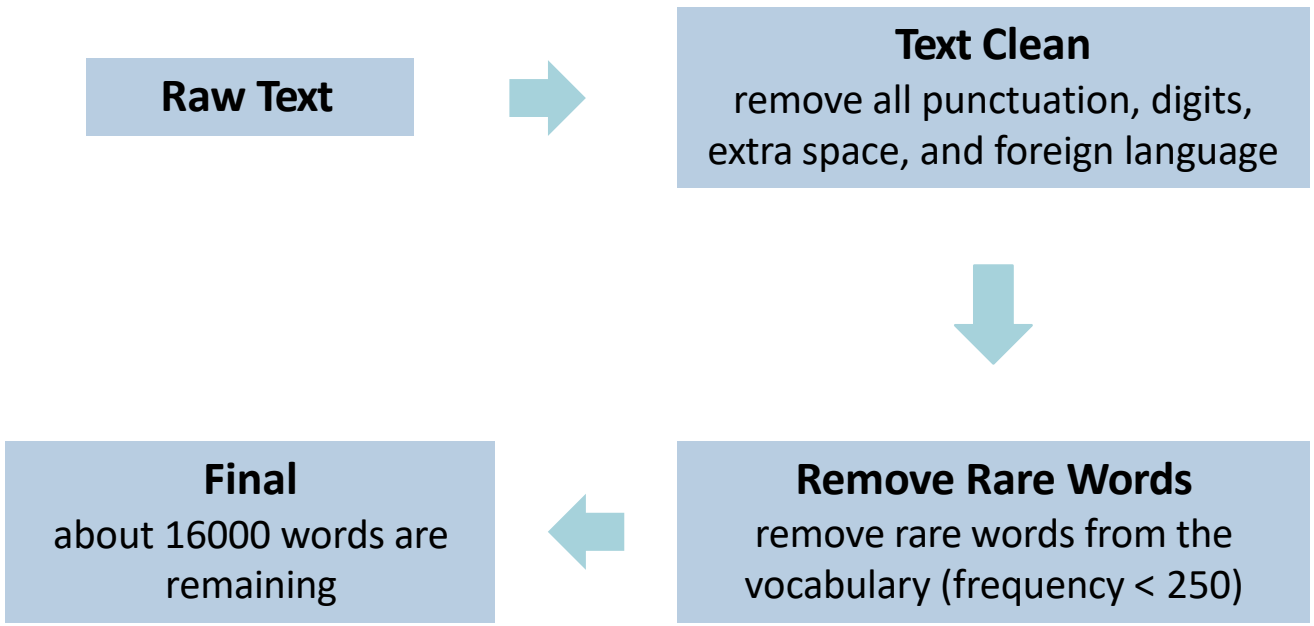
- **Focus on text and categories**

Text - Language

Language	English	German	French	Spanish	Italian	Japanese
Counts	1524126	13547	7190	553	187	143

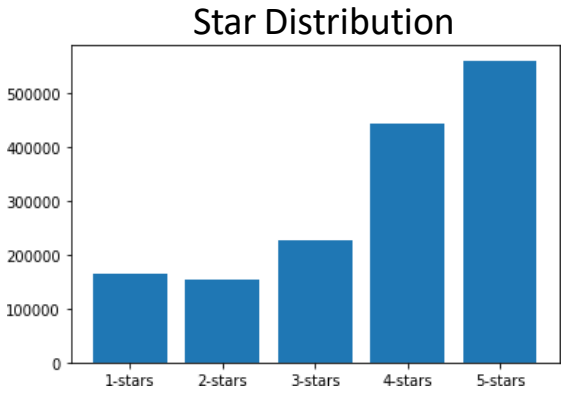
- Foreign Language: 32
- English: 98.56%

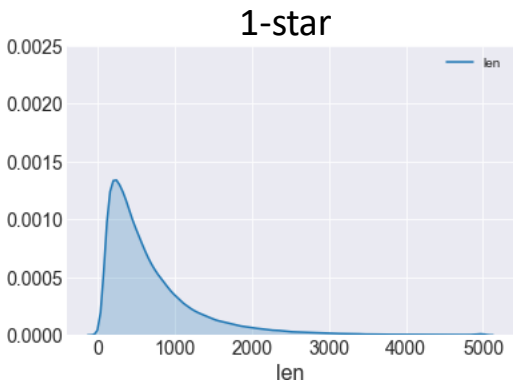
Text - Cleaning Procedure

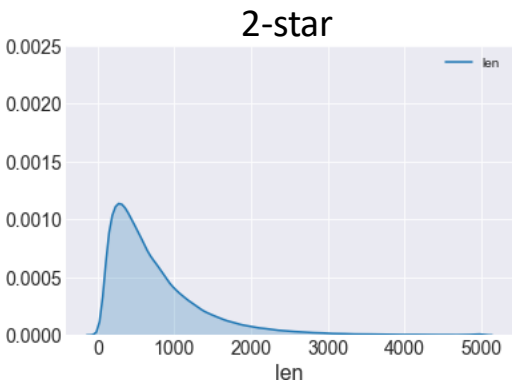


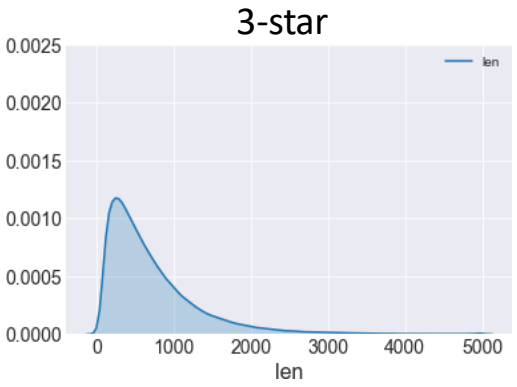
Text - Length of Characters

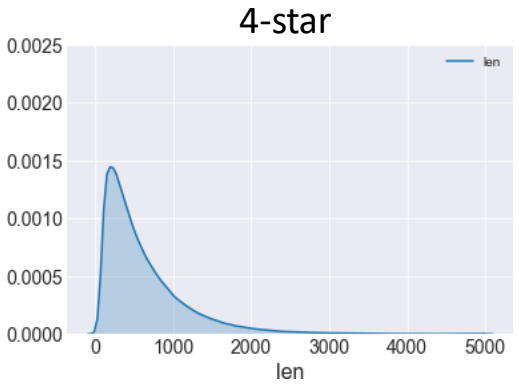
- **Star Distribution & Text Length Based on Rating**

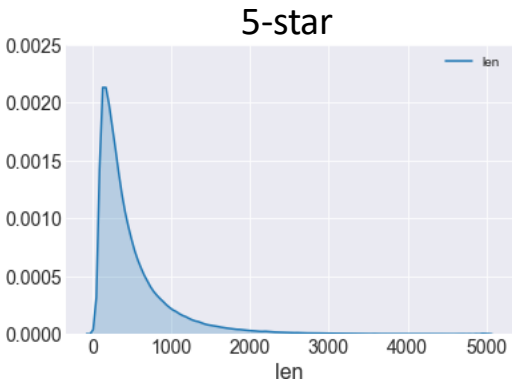






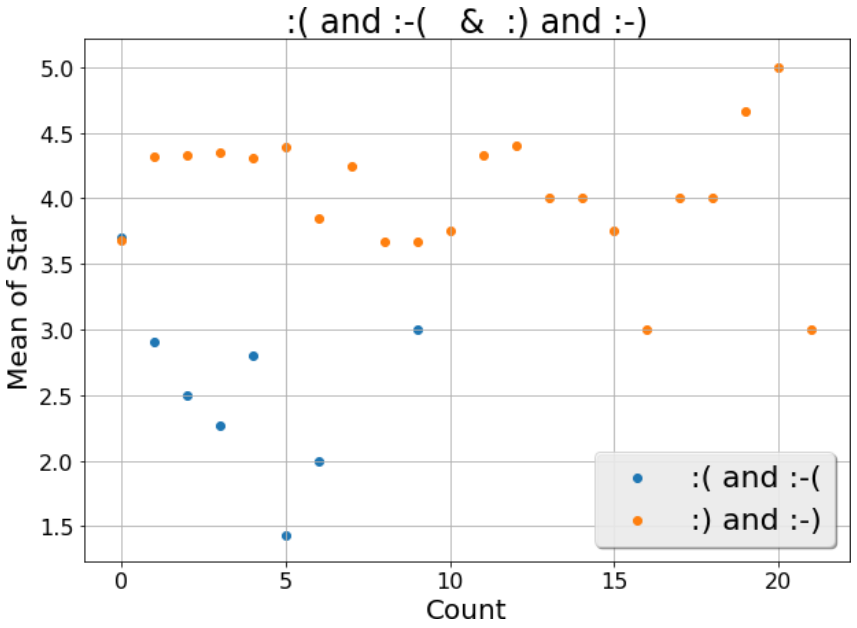


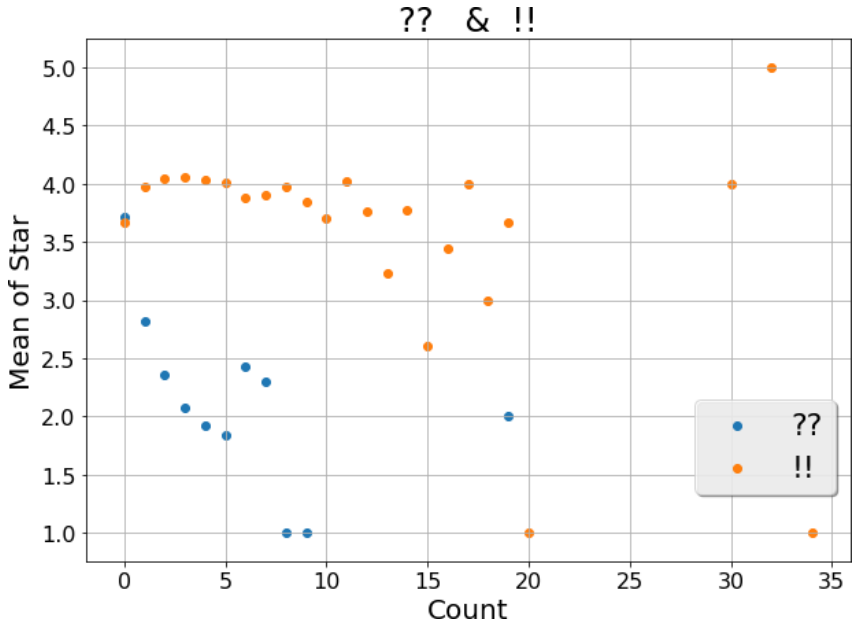




Text - Special Punctuation

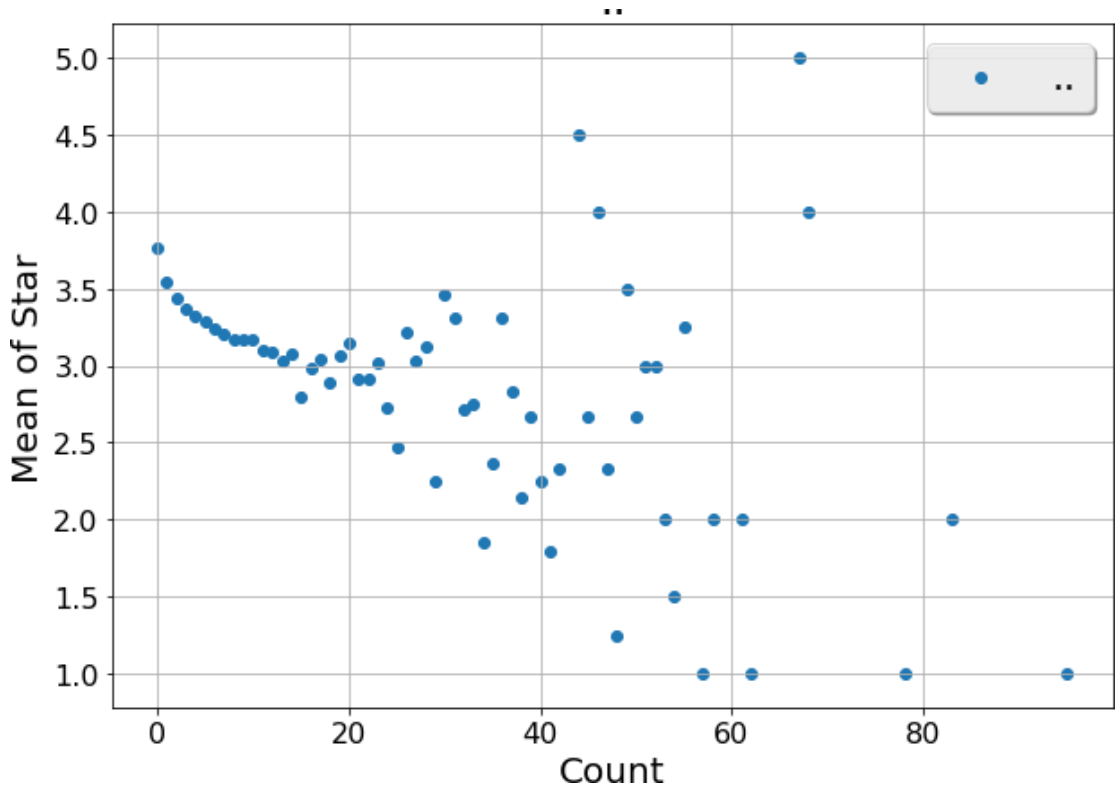
Special Punctuation	..	!!	??	:) & :-)	:(& :-(
Counts	692215	253755	23956	47460	9332





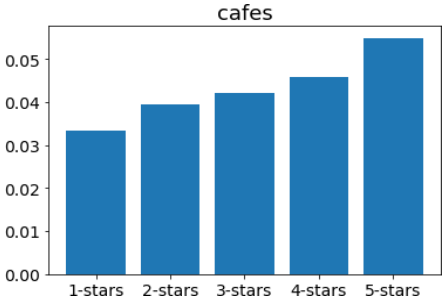
Text - Special Punctuation

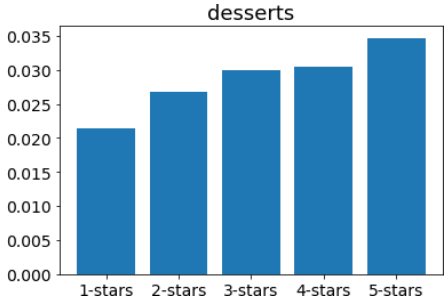
Special Punctuation	..	!!	??	:) & :-)	:(& :-(
Counts	692215	253755	23956	47460	9332

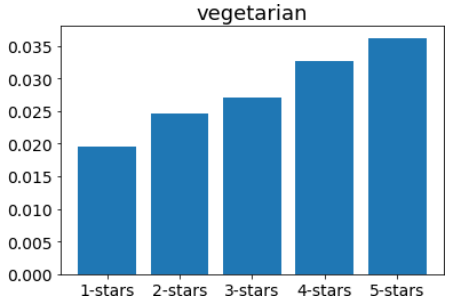


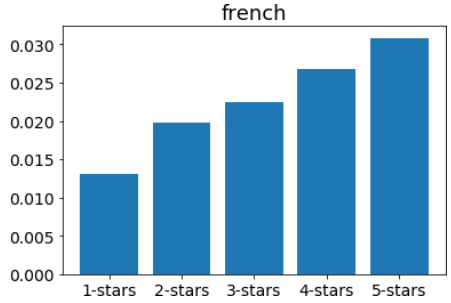
Categories

Positive Categories

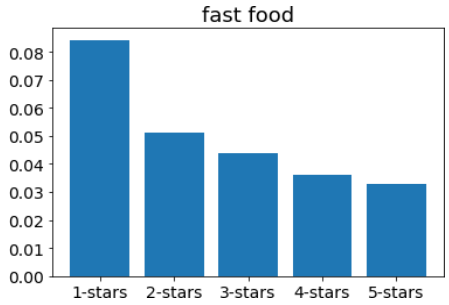


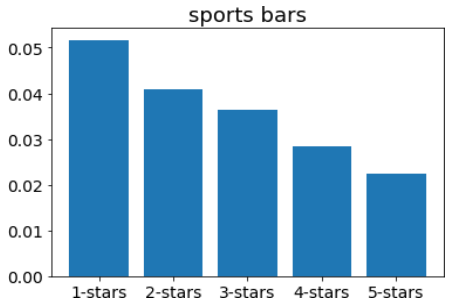


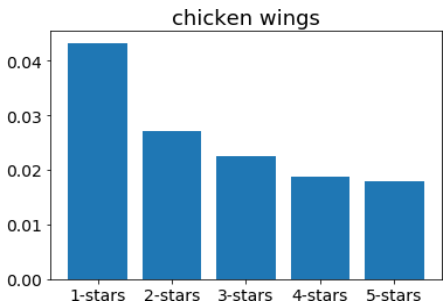


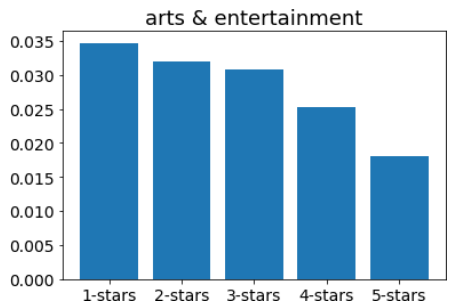


Negative Categories









Categories - Word Frequency

Positive Categories Examples

Vegan & Vegetarian

French

Categories - Word Frequency

Negative Categories Examples

Fast Food

Chicken Wings

Future work

- **Linear model**
  - LASSO: select important words
  - Add interaction terms of adverbs(prep) and adjectives:

    e.g: not : good

    very : good

    however : fast
- **Neural network**
  - A good method to do natural language processing

Thank You!