Emotion Analysis of Tweets During the 2019 Indian Election

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Objective:

To analyze, visualize, and interpret the sentiment and emotions expressed in a random set of tweets to understand the public opinion.

Use case:

2019 Indian General Election - Tweets related to the main candidates, Narendra Modi and Rahul Gandhi.

Sample Tweets

Anilcherukara

@sakshijoshii Cave built at Modi's interest.

He knew once he had to sit here...
#BuddhaPurni
#Kedarnath
#ModiFlopPre
#LokSabhaEle

VishwasSutrakar

I clearly remember In May 2004, the #Sensex tanked a hefty 20% in two days after the election result, brought in UPA, which removed #BJP. By December it had rallied 50% from the post sell-off low

This time story is d
cut

ShrimantManey

West Bengal - Out of 9 seats going for poll tomorrow, BJP hopes good show at Two seats incl North Kolkata where TMC's Sudip Bandopadhyay is sitting MP. Good New
Bhattacharya

VinayPujari5

#LokSabhaElections2019 #BJP #narendramodi #NamoAgain
#ElectionsWith
india out of a

nitinuprabhu

Eagerly waiting to see which W
swearing ceremony in 2019. #L

kundu_avra

@TimesNow @ncbn @Mayawati We are a khicdi country. I mean aren't we? Just look at India. Total khichdi. I'm ok with a khichdi Government. As a wise person said "I prefer the chaos of the khichdi than the order of the BJP". I am totally with the person here.

#LokSabhaElections2019

2019-05-18 13:03:19+00:00

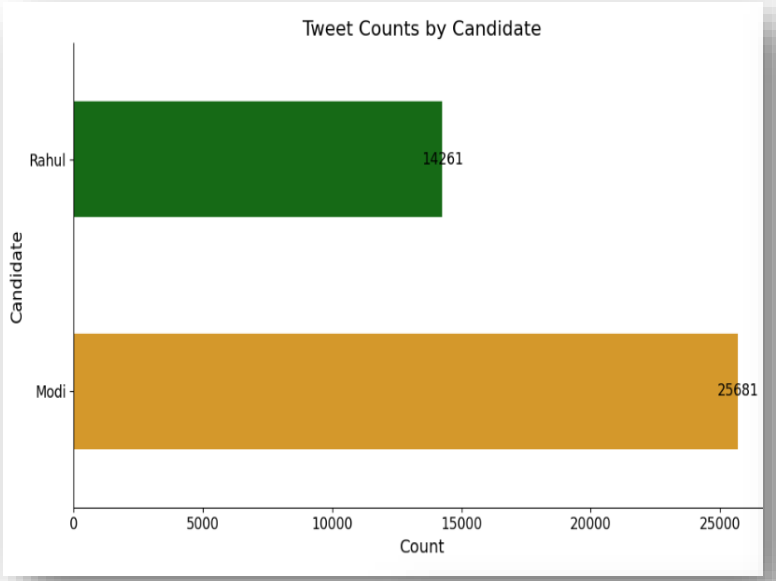
Dataset Overview & Preprocessing

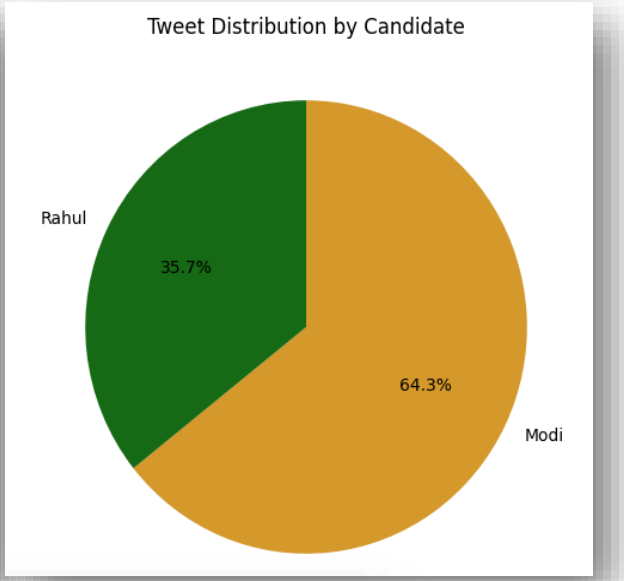
- Dataset is around 40K tweets.
- Connected to two prominent candidates:
  - Narendra Modi &
  - Rahul Ghandi.
- The Dataset Preparation.

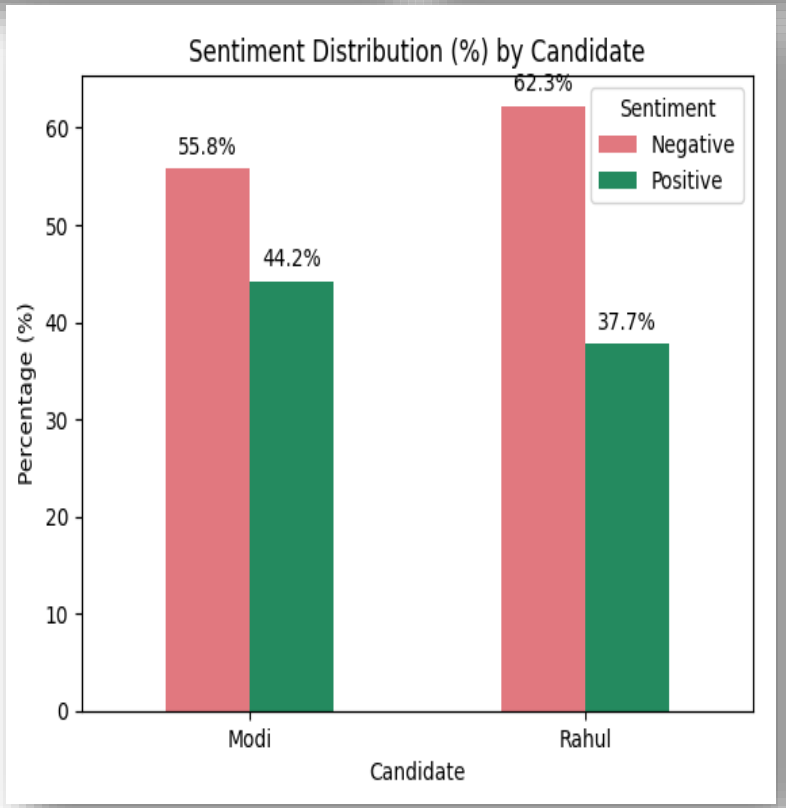
EDA - Exploratory Data Analysis

- Performed Sentiment Analysis on labeled data.

- Analytical Breakdowns:
  - Tweet Counts by Candidate
  - Tweet Distribution by Candidate
  - Sentiment Distribution ratio by Candidates







Addressing Data Imbalance

- Observation of Imbalance

Narendra Modi	Rahul Gandhi:
25,681 tweets	14,261 tweets

- Addressing Imbalance
  - Utilized Under-sampling Method

```
Majority Class: Modi
Minority Class count: 14261
```

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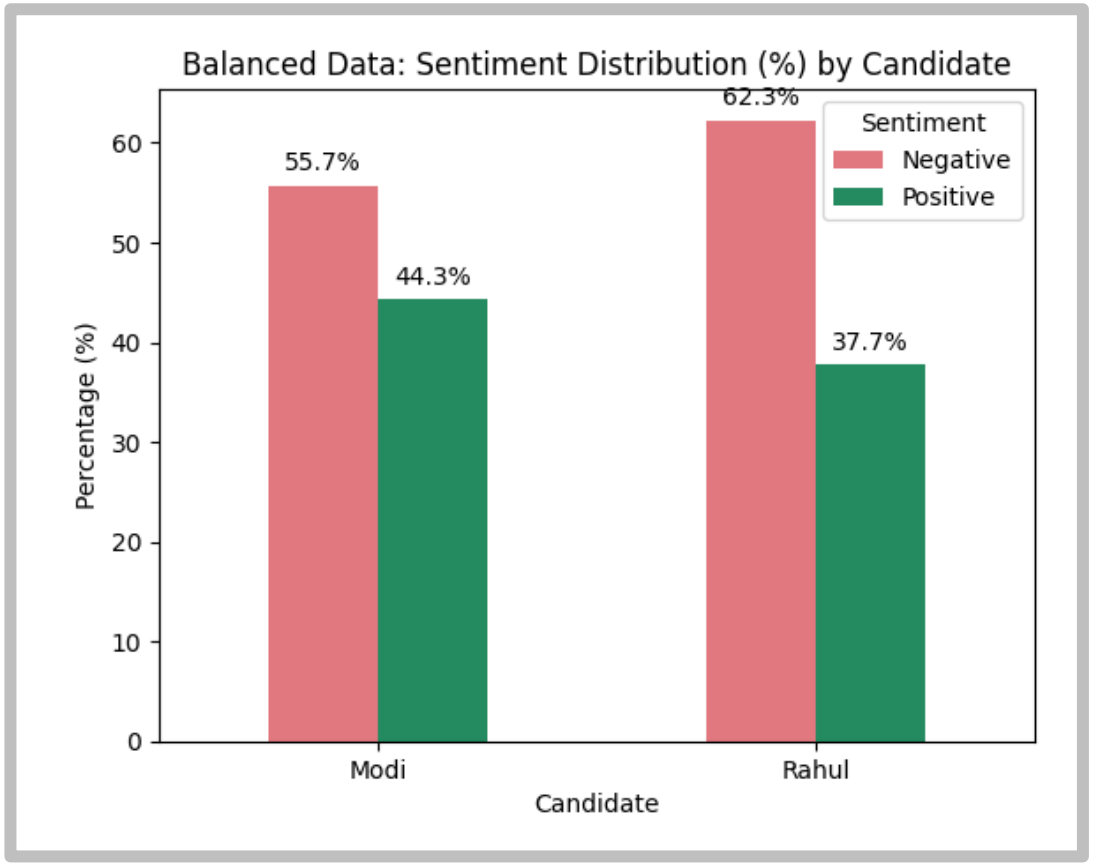
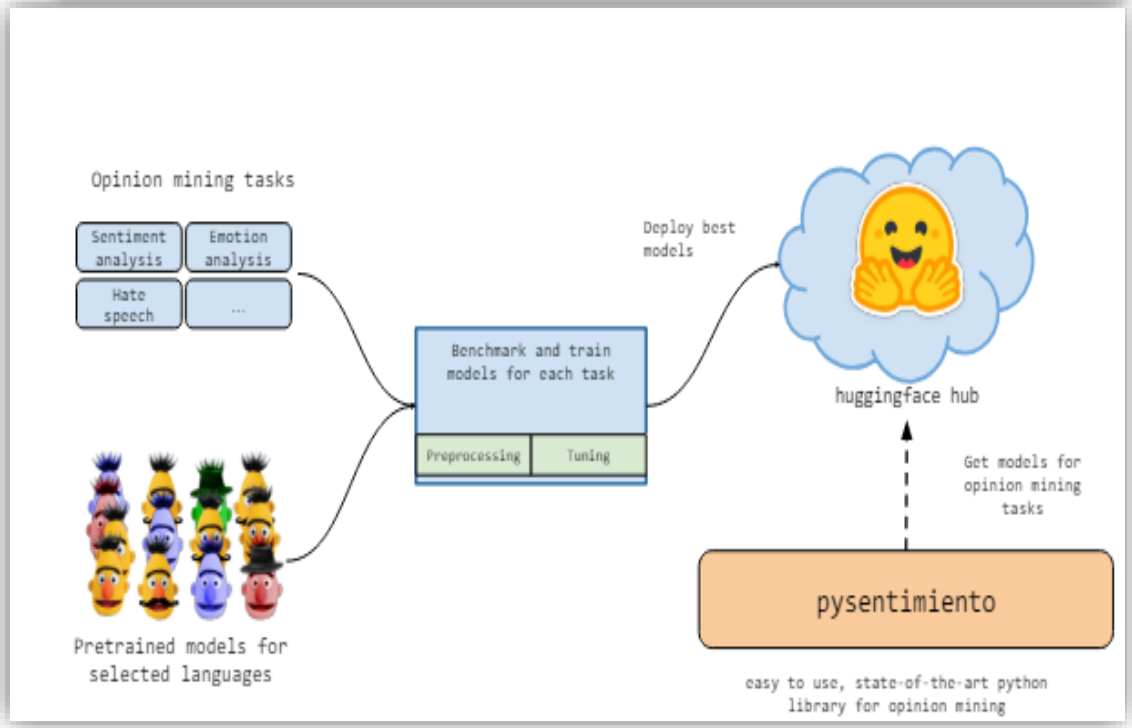
*** Balanced Data: Distribution of Sentiment by Candidates
Sentiment  Negative  Positive
Candidate
Modi           7948      6313
Rahul          8878      5383
*** Totals:
Candidate
Modi      14261
Rahul     14261
```



pysentimiento: A Python Toolkit for Opinion Mining and Social NLP tasks

Juan Manuel Pérez[1*], Mariela Rajngewerc[2,3], Juan Carlos Giudici[1], Damián A. Furman[1], Franco Luque[2], Laura Alonso Alemany[2] and Maria Vanina Martinez[4*]



Analysis Methodology

pysentimiento

Pre-trained transformer model

- Can Analyze the sentiment
- Understand the emotional tone.

Emotions

- **Joy**
- **Surprise**
- **Sadness**
- **Anger**
- **Disgust**
- **Fear**

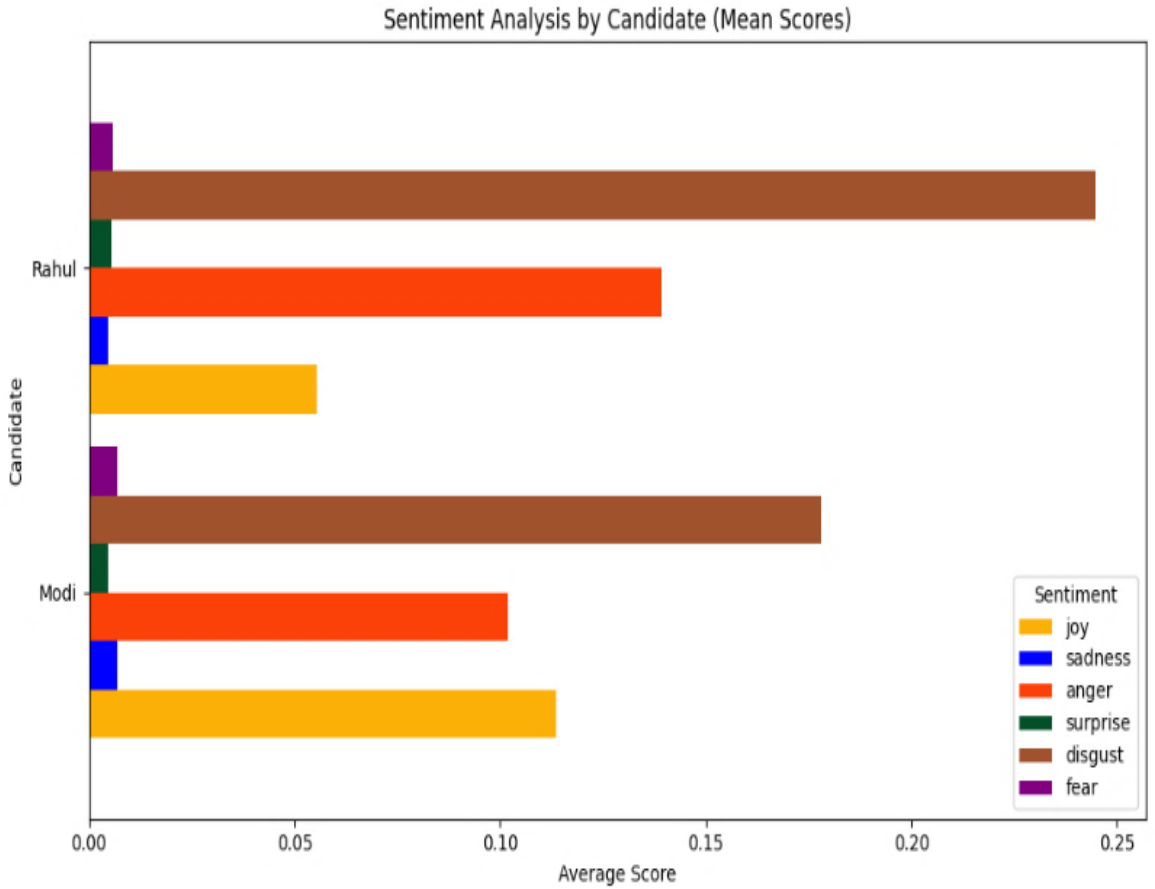
Applications

Valuable for tasks such as:

- Customer feedback analysis
- Social media monitoring

Emotion Distribution

- Modi-related Comments:
  - Primarily associated with **joy**, **sadness**, & **fear**
- Rahul-related Comments:
  - Higher associations with anger, surprise, & disgust
- Significant Ratios:
  - Notable differences in the ratios of disgust, anger, **and joy**
  - Highlights varying emotional responses caused by each figure.



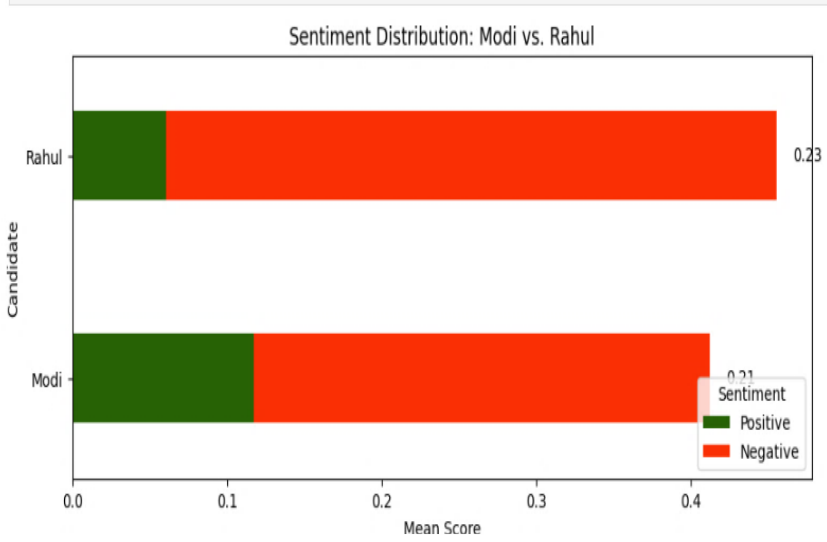
Emotion Classification

Further Analysis ...

- **Positive Emotions**
  - **Joy**
  - **Surprise**

- **Negative Emotions**
  - **Sadness**
  - **Anger**
  - **Disgust**
  - **Fear**

Emotion Classification Insights



Mean Score %	Positive	Negative
Modi	25%	75%
Rahul	15%	85%

Positive Emotions

Modi exhibits slightly higher positive emotions in comments compared to Rahul.

Rahul has a significantly higher proportion of negative emotional comments overall.

“This knowledge can be incredibly valuable for political strategists, social scientists, and anyone interested in the dynamics of public opinion.”

More Details: github.com/udithac/llm

Thank you so much!

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