Data Mining Project:
Examining Public Perceptions of the Israel-Palestine Conflict in 2023

Presented by:

Amisha Dubey

Kiranmai P.

UNIVERSITY *of* ROCHESTER
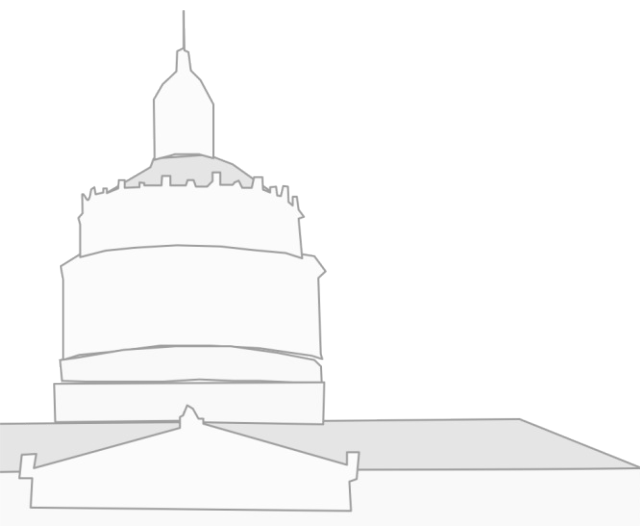
Problem Statement

The Israel-Palestine conflict remains one of the most complex and enduring geopolitical issues of our time, with profound global implications.

In the year 2023, it is crucial to gain a comprehensive understanding of public sentiments, thoughts, and the factors influencing support for either side in this conflict.

To achieve this, our project proposes to employ advanced techniques and methodologies within the field of Natural Language Processing (NLP) to explore the mentality of the public concerning the Israel-Palestine conflict.
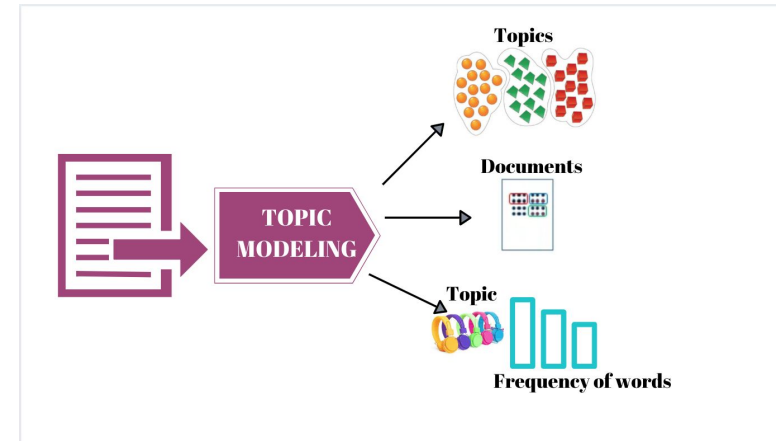
Objectives

1. **Examine Public Mentality and Thoughts:** Our primary objective is to delve into the thoughts and mentalities of the global public regarding the Israel-Palestine conflict in 2023. This exploration will provide insights into the prevailing attitudes, emotions, and concerns associated with the conflict.

2. **Analyse Factors Influencing Support:** We aim to identify and analyze the multifaceted factors that contribute to public support for either Israel or Palestine. This analysis will encompass the influence of historical narratives, media coverage, geopolitical interests, and cultural factors.
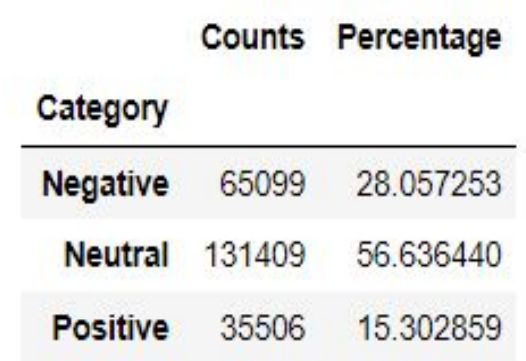
Algorithms implemented

1. Sentiment Analysis using VADER, XLNet
2. Topic Modeling Techniques such as Latent Dirichlet Allocation (LDA)
3. Geopolitical Stance Classification

Analysis

Distribution of Sentiment Categories in Comments

Category	Counts	Percentage
Negative	65099	28.057253
Neutral	131409	56.636440
Positive	35506	15.302859

Visualization of the Sentiment Scores

Wordcloud of all Sentiments

Overall

Neutral

Negative

Positive

Topic Modelling Using LDA

```
Topic #1:
hamas, israel, civilian, people, palestinian, gaza, war, terrorist, israeli, child

Topic #2:
israel, jew, palestinian, land, arab, state, country, palestine, people, jewish

Topic #3:
like, israel, lol, iran, money, russia, dont, hamas, war, people

Topic #4:
video, hospital, hamas, idf, source, like, tunnel, evidence, link, footage

Topic #5:
people, dont, im, like, know, youre, thats, think, good, say
```
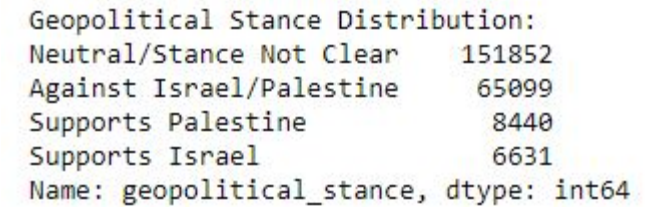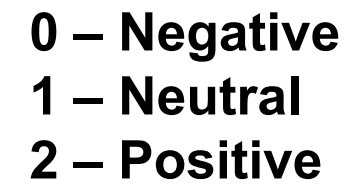
Geopolitical Stance Determination Using Dominant Topics and Sentiment Scores

Geopolitical Stance Distribution

Geopolitical Stance Distribution:
Neutral/Stance Not Clear   151852
Against Israel/Palestine   65099
Supports Palestine   8440
Supports Israel   6631
Name: geopolitical_stance, dtype: int64

UNIVERSITY *of* ROCHESTER

Model Performance Comparison for Vader

XLNet Results

0 – Negative
1 – Neutral
2 – Positive

Inferences

Geopolitical Stance Distribution:

- **Neutral/Stance Not Clear:** The majority of the data falls into this category with a count of 286,000. This suggests that a significant portion of the dataset does not express a clear geopolitical stance on the Israel-Palestine issue.

- **Against Israel/Palestine:** There are 123,092 instances where the stance is against Israel/Palestine. This indicates a substantial portion of the data expressing a negative sentiment or opposition towards Israel, Palestine, or both.

- **Supports Palestine:** There are 13,911 instances where the stance supports Palestine. This represents a smaller but notable segment of the data that expresses support for the Palestinian side of the conflict.

- **Supports Israel:** There are 13,722 instances where the stance supports Israel. Similar to supporting Palestine, supporting Israel is also expressed by a smaller but significant portion of the dataset.

In summary, the majority of the data does not express a clear stance. Among those that do, there is a considerable diversity of opinions, with a slightly higher number of instances leaning against Israel/Palestine.

Why Neutral or Unclear Stance is Disturbing:

- **Humanitarian Crisis:** The war has led to a significant humanitarian crisis, with a large number of civilian casualties, including children. A neutral stance might indicate a lack of active engagement for a peaceful resolution, potentially perpetuating the crisis.

- **Potential for Change:** A neutral stance might imply a failure to actively work towards a resolution. With so many lives at stake, not actively supporting efforts for peace could be seen as a missed opportunity to make a positive impact.

- **Moral Responsibility:** Some argue that in the face of significant human suffering, individuals and nations have a moral responsibility to take a stand against violence and advocate for peaceful solutions. A neutral stance might be perceived as shirking this responsibility.

- **Perpetuation of War:** A lack of active engagement might inadvertently support the status quo, allowing the war to continue without significant international pressure for resolution. This can lead to more lives being lost and the prolongation of suffering.

- **Missed Opportunities for Diplomacy:** International pressure and diplomacy can play a crucial role in war resolution. By not picking a side, opportunities for diplomatic efforts and negotiations might be missed, hindering the chances of finding a peaceful resolution.
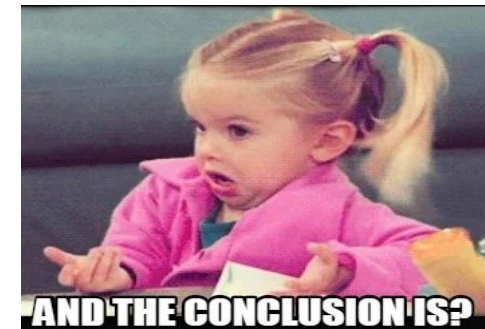
- **Failure to Address Root Causes:** Taking a neutral stance means avoiding addressing the underlying issues that fuel the war, such as territorial disputes and human rights violations. Without addressing these root causes, long-term peace and stability are impossible to achieve.

- **Lack of Moral Clarity:** In situations with clear human rights violations, a neutral stance can be seen as a lack of moral clarity and a failure to stand up against injustice.

In summary, a neutral or complacent stance in the Israel-Palestine war might be perceived as problematic because it can contribute to the continuation of the war and the suffering of those involved. Many advocate for active engagement, dialogue, and efforts toward a peaceful resolution to prevent further loss of lives, especially among vulnerable populations like children.

UNIVERSITY *of* **ROCHESTER**

Conclusion:

- Through this project, we were able to know people had a neutral opinion regarding the war through Vader Analysis.
- In contrast, XLNet model depicted that people had a negative opinion against the war.
- Through LDA Analysis, we also figured out that the war had a drastic impact on children (education).

Future Scope:

- In future, we plan to implement and compare models like and PySentimiento and compare its performance with Neural network and logistic regression.
- Further, it may be beneficial to explore multi-lingual models that encompass additional widely spoken languages like Arabic, German, Turkish, Hindi and others.
- Integrating these languages could enhance our ability to analyze and comprehend data related to conflicts from a more comprehensive global standpoint.

References

- Daily Public Opinion on Israel-Palestine War, Comments from reddit on posts related to the current war. Updated Daily, Kaggle
- Arsal Imtiaz, Danish Khan, Hanjia Lyu, Jiebo Luo, Taking sides: Public Opinion over the Israel-Palestine Conflict in 2021, arXiv:2201.05961v2 [cs.SI] 23 July 2022
- James Ryan, Sam Helfont, Carol Rollie Flynn, Joshua Krasna, Sean Yom, Leon Hadar, A Dangerous New Phase in the Israeli-Palestinian Conflict, Foreign Policy Research Institute

Thank you!

UNIVERSITY *of* ROCHESTER