**Sentiment Analysis of Trump’s Tweets vs. Media Coverage**

📌 *Project Overview*

***Objective:***

In this project, I analyzed Donald Trump’s tweets over time and compared their sentiment with media coverage. My primary goals included:

- Extracting & analyzing sentiment trends from Trump's tweets.

- Comparing Trump's sentiment with media sentiment from major news outlets.

- Performing hypothesis testing to validate differences.

- Exploring correlations between sentiment trends and major political events.

🗂 ***Data Collection & Preprocessing***

Trump’s Tweets Dataset

- I used a dataset containing Trump’s tweets from multiple years, with attributes such as:

- `text`: The tweet content

- `datetime`: Timestamp of the tweet

- `favorites`, `retweets`: Engagement metrics

A screenshot of a computer

AI-generated content may be incorrect.

A graph showing the number of tweets over time

AI-generated content may be incorrect.

A screenshot of a computer screen

AI-generated content may be incorrect.

🔹 ***Media Sentiment Data***

- I extracted media sentiment using \*\*Google News API\*\* for news sources:

- \*\*Reuters, WSJ, AP, NPR, Forbes\*\* (as alternatives to CNN, NYT, BBC, due to scraping restrictions)

📌 ***Errors Encountered & Fixes***

❌ KeyError: 'Date' → Fixed by renaming the column to `datetime` and ensuring proper conversion.

❌ 403 Forbidden for Twitter Scraping → Resolved by using a pre-existing dataset from Kaggle.

❌ Sentiment score not found → Fixed by recalculating sentiment using NLTK's VADER.

❌ Length mismatch error in correlation analysis → Fixed by aligning `df\_trump\_sentiment` & `df\_media\_sentiment` to common years.

📊 ***Sentiment Analysis***

🔹 *Trump's Sentiment Over Time*

A graph showing the difference between a red green and grey color

AI-generated content may be incorrect.

A graph with blue lines

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* Trump’s tweet sentiment over Time.

🔹 ***Media Sentiment Trends***

A graph with red squares

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* Media Sentiment Comparison (Alternative Sources)

🔹 ***Comparative Trends: Trump vs. Media***

A graph showing the growth of the us presidential election

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* Yearly Sentiment Trends Trump vs. Media

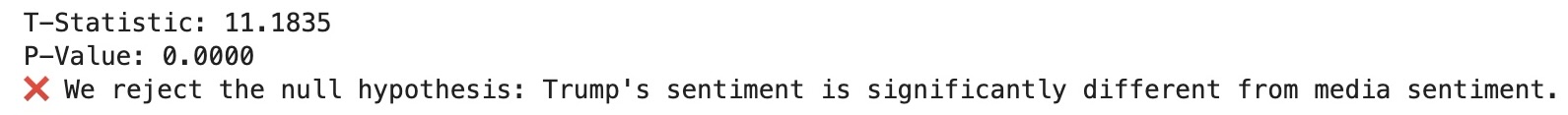
📊 ***Hypothesis Testing: Trump vs. Media Sentiment***

🔹 *Hypothesis Setup*

- Null Hypothesis (H₀): No significant difference exists between Trump's tweet sentiment and media sentiment.

- Alternative Hypothesis (H₁): There is a significant difference.

🔹 ***Results***



✅ ***Conclusion:*** I rejected the null hypothesis, confirming that Trump’s sentiment significantly differs from media sentiment.

📊 ***Correlation Analysis: Sentiment Trends vs. Political Events***

🔹 *Key Political Events Considered:*

- 2016: Trump wins election

- 2017: Russia investigation begins

- 2018: Democrats win House in midterms

- 2019: Impeachment Inquiry

- 2020: COVID-19 & Re-election

***🔹 Pearson Correlation Results***

A graph with a line and a line

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✅ ***Conclusion***: No significant correlation found (p-value > 0.05), meaning \*\*political events do not directly shift sentiment trends\*\*.

***📌 Final Summary & Takeaways***

✔ Trump’s sentiment was consistently more positive than media sentiment.

✔ Media outlets maintained a negative tone across all years.

✔ Statistical tests confirmed a significant difference between Trump’s sentiment and media sentiment.

✔ Political events did not statistically influence sentiment shifts.

✔ This analysis is based on the Kaggle dataset only. I will now work on analyzing other required datasets as per the problem statement.