

Fake News Detection

A Problem and a Solution



The Problem

The Washington Post
Democracy Dies in Darkness

Opinion: Facebook admits mistake in flagging satire about CNN spinning the news with a washing machine

The Problem

The Babylon Bee

U.S. Worldviews

CNN Purchases Industrial-Sized Washing Machine To Spin News Before Publication

March 1st, 2018 - BabylonBee.com



147.6k Shares [Facebook icon] 114.1k SHARE [Twitter icon] 15.3k SHARE [Email icon] SHARE

Why worry?



user satisfaction



credibility



money

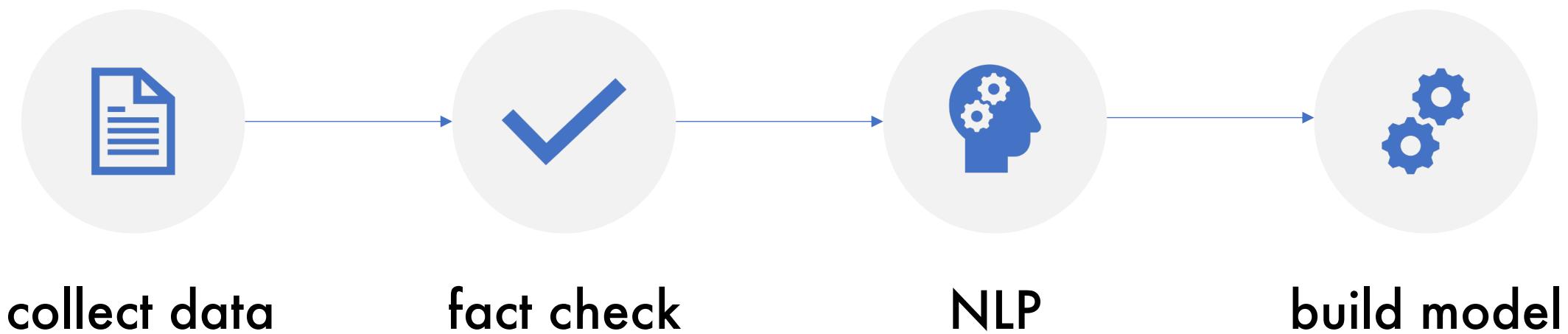


The Solution

Goal: offer Facebook users more accurate truth-rating content warnings on posts

Solution: build classification model that classifies posts into more granular truth-rating categories

Methodology



Supporting Insights

There are more posts
with no factual content
than fake news on
political pages

11.9%

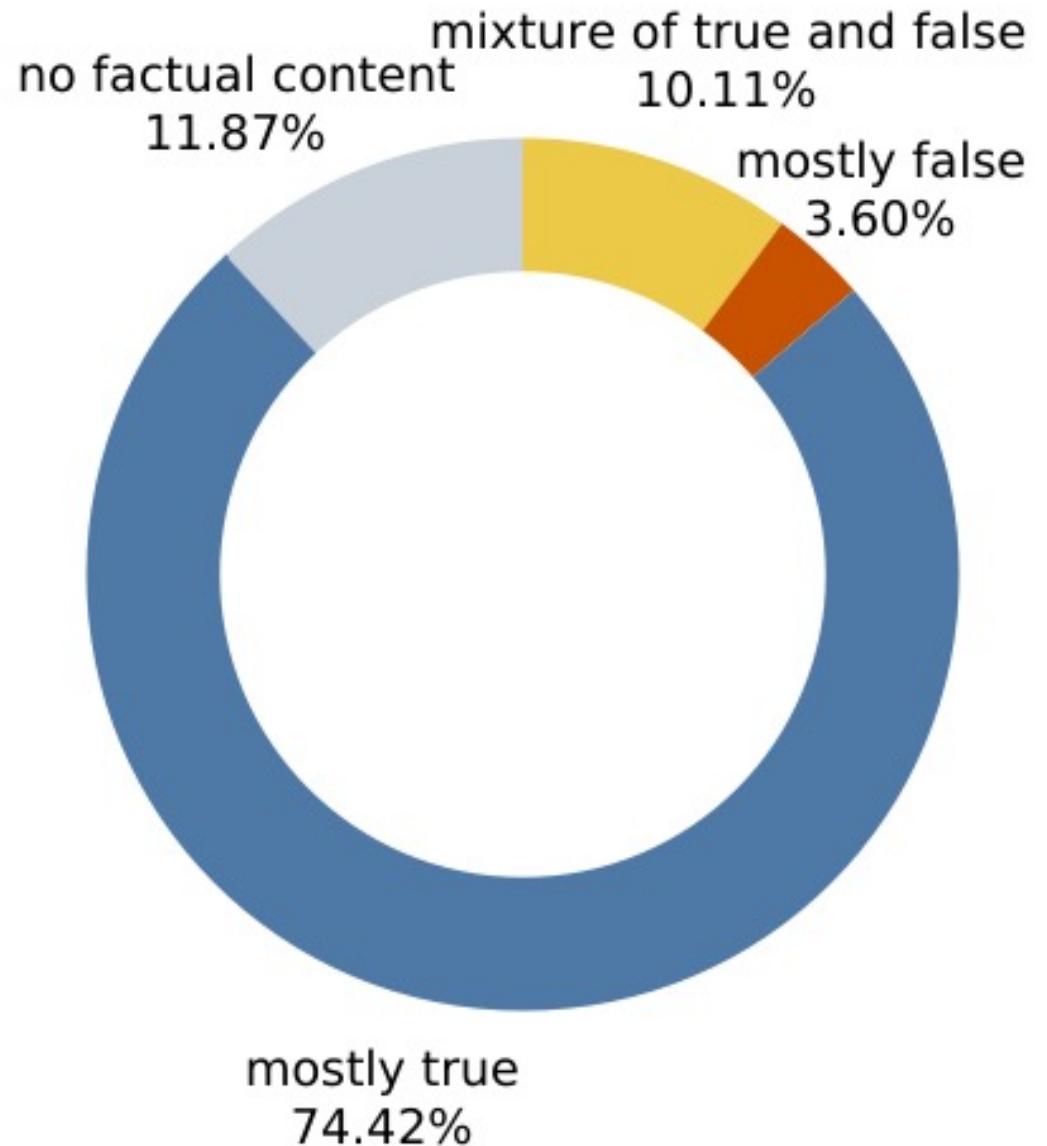
no factual content

3.6%

mostly false

Supporting Insights

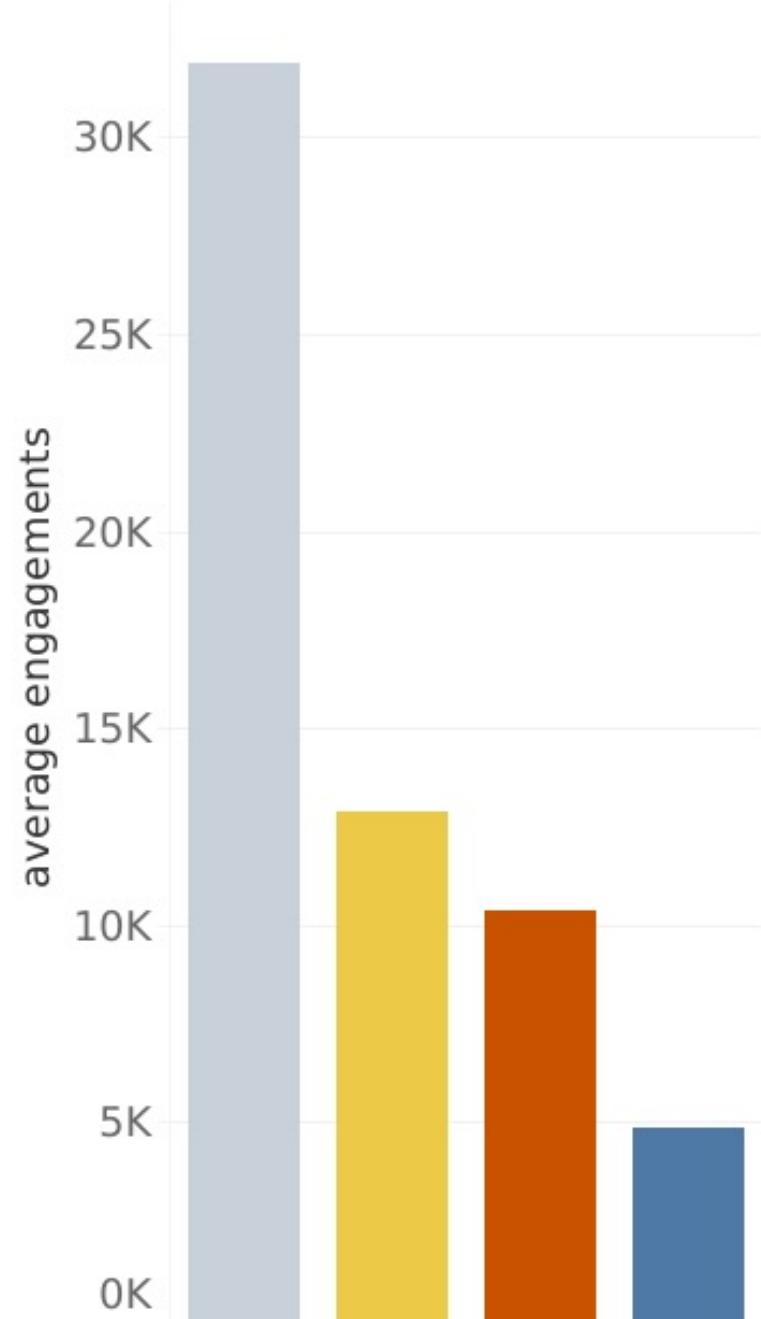
There are more posts with no factual content than fake news on political pages



Supporting Insights

Posts with no factual content receive the highest engagements

- Rating
- no factual content
 - mixture of true and false
 - mostly false
 - mostly true



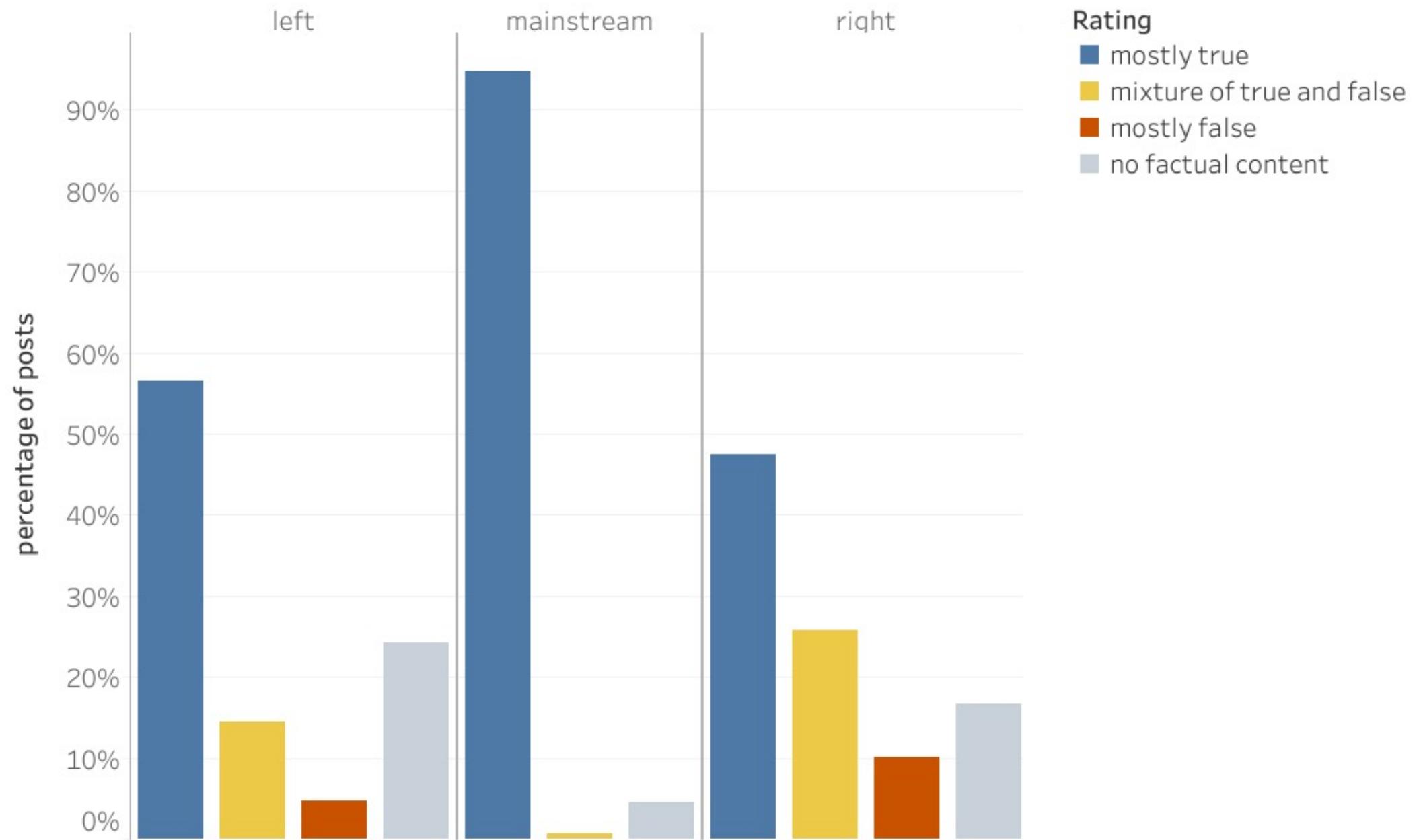
Helpful Insights

Partisan media pages
share more posts with no
factual content

24.6%
left

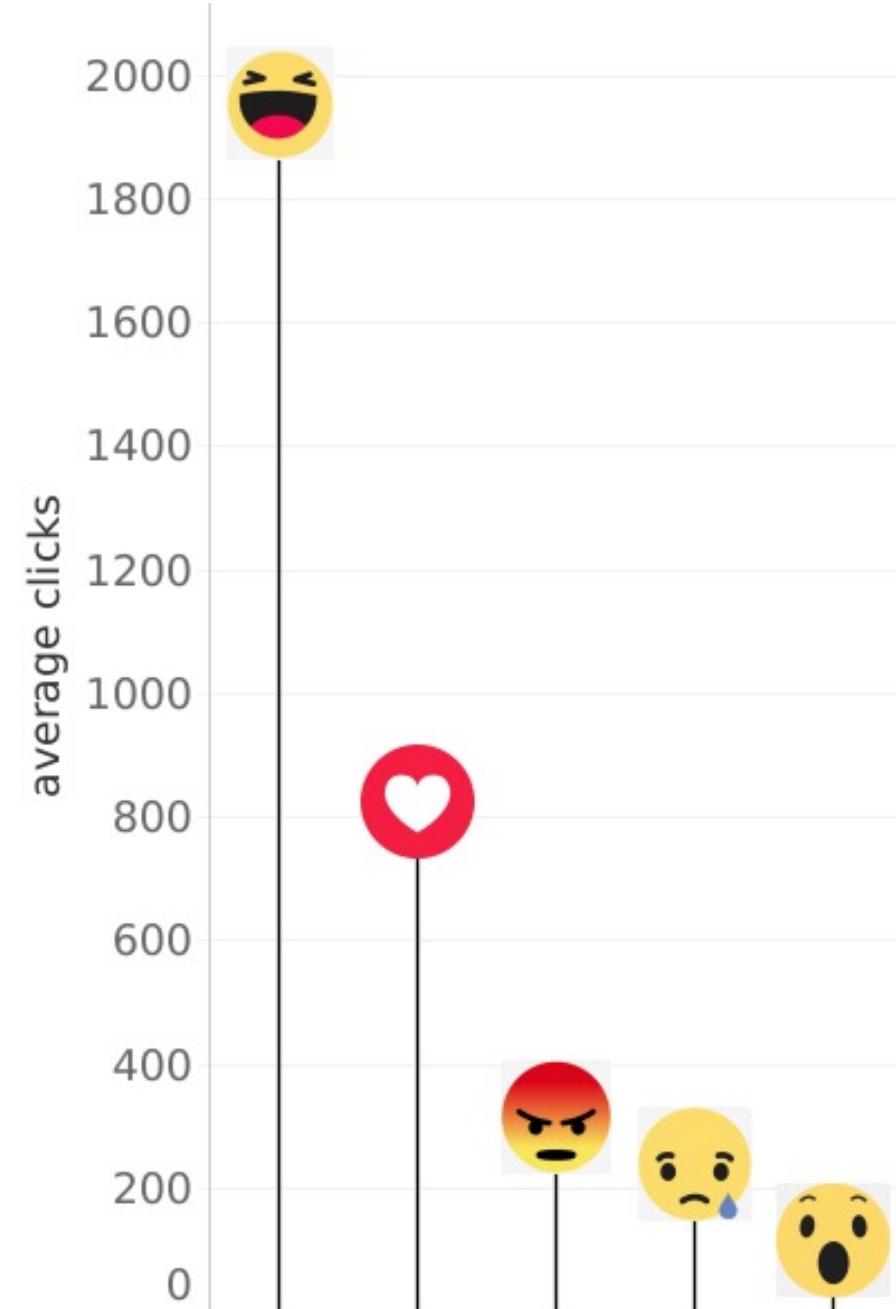
14.4%
right

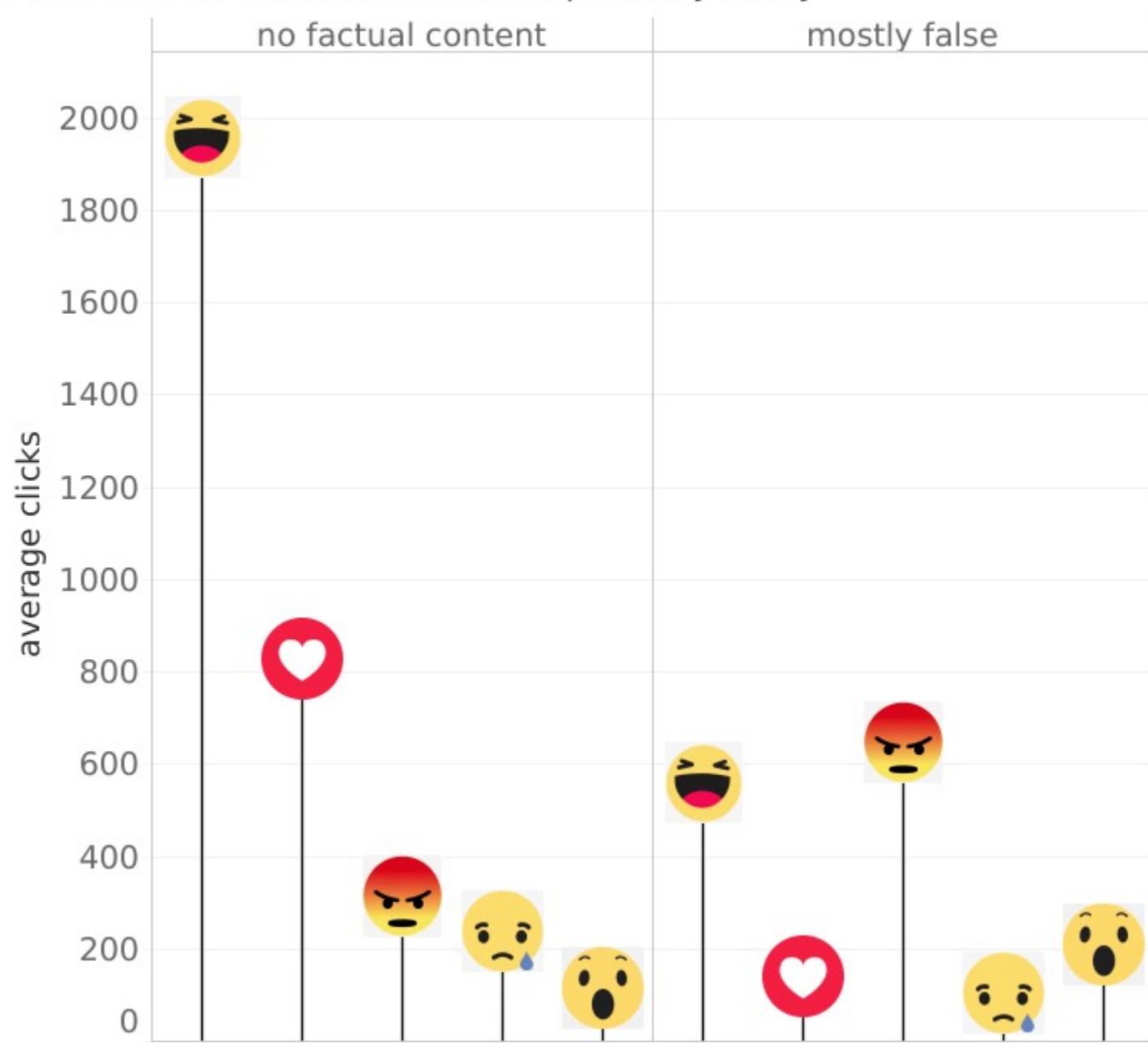
4.5%
mainstream



Helpful Insights

Most posts with no factual content are likely satirical or comedic



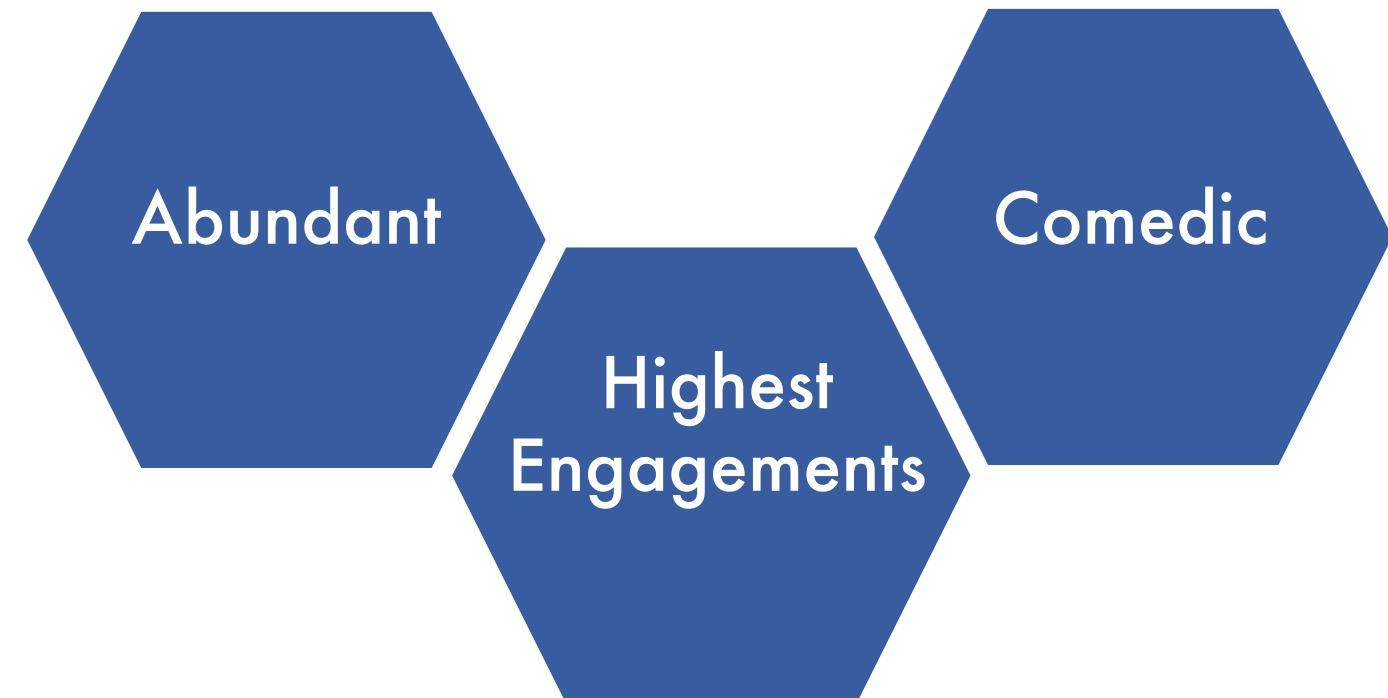


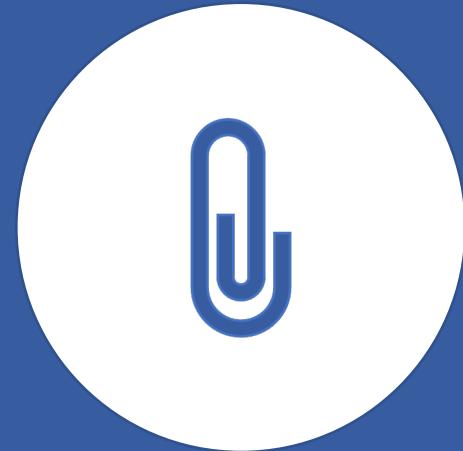
Conclusion



Conclusion

Posts with no factual content:





Appendix

Data

- Fact-Checking Facebook Politics Pages
 - <https://www.kaggle.com/mrisdal/fact-checking-facebook-politics-pages>
- With post reactions
 - https://github.com/hmc-cs-syasunaga/ML_Project

Data: Facebook pages

- Left:
 - Addicting Info
 - Occupy Democrats
 - The Other 98%
- Right:
 - Eagle Rising
 - Freedom Daily
 - Right Wing News
- Mainstream
 - ABC News Politics
 - CNN Politics
 - Politico

“All nine pages have earned the coveted verified blue checkmark from Facebook, which gives them an additional layer of credibility on the platform.”

Data: Truth Ratings

- **“Mostly True:** The post and any related link or image are based on factual information and portray it accurately. This lets them interpret the event/info in their own way, so long as they do not misrepresent events, numbers, quotes, reactions, etc., or make information up. This rating does not allow for unsupported speculation or claims.
- **Mixture of True and False:** Some elements of the information are factually accurate, but some elements or claims are not. This rating should be used when speculation or unfounded claims are mixed with real events, numbers, quotes, etc., or when the headline of the link being shared makes a false claim but the text of the story is largely accurate. It should also only be used when the unsupported or false information is roughly equal to the accurate information in the post or link. Finally, use this rating for news articles that are based on unconfirmed information.
- **Mostly False:** Most or all of the information in the post or in the link being shared is inaccurate. This should also be used when the central claim being made is false.
- **No Factual Content:** This rating is used for posts that are pure opinion, comics, satire, or any other posts that do not make a factual claim. This is also the category to use for posts that are of the “Like this if you think...” variety.”

Why worry? x2

15%

Republicans believed
Babylon Bee articles

13%

Democrats believed
Onion articles