DESTINATION: OHIO

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DSI-822

PROBLEM STATEMENT

I work for TourismOhio, where our mission statement is to “aggressively position Ohio as a relevant travel destination and support Ohio’s tourism industry to drive economic prosperity throughout the state.” We saw a 21% drop in visitor spending in 2020, but rebounded in 2021, and we are now trying to continue the growth momentum with more relevant ads and offers.

To do this, I’ve first been asked to scrape social media sites and find out what people are saying about our state and why they may or may not visit so that we can adapt our advertisements to our target audiences. I am starting on Reddit, with what I believe to be two relevant subreddit pages:

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Before I can analyze the messages or make any recommendations, I need to be able to pull posts from each of these threads into an aggregated data frame. My goal is to build a classification model that can predict, with at least 85% accuracy, which subreddit each post is from.

OhiO find it here. ohio.org

PREPROCESSING

1. Undersampling

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2. Null replacement

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3. URL removal

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4. Features created

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5. Stop words added

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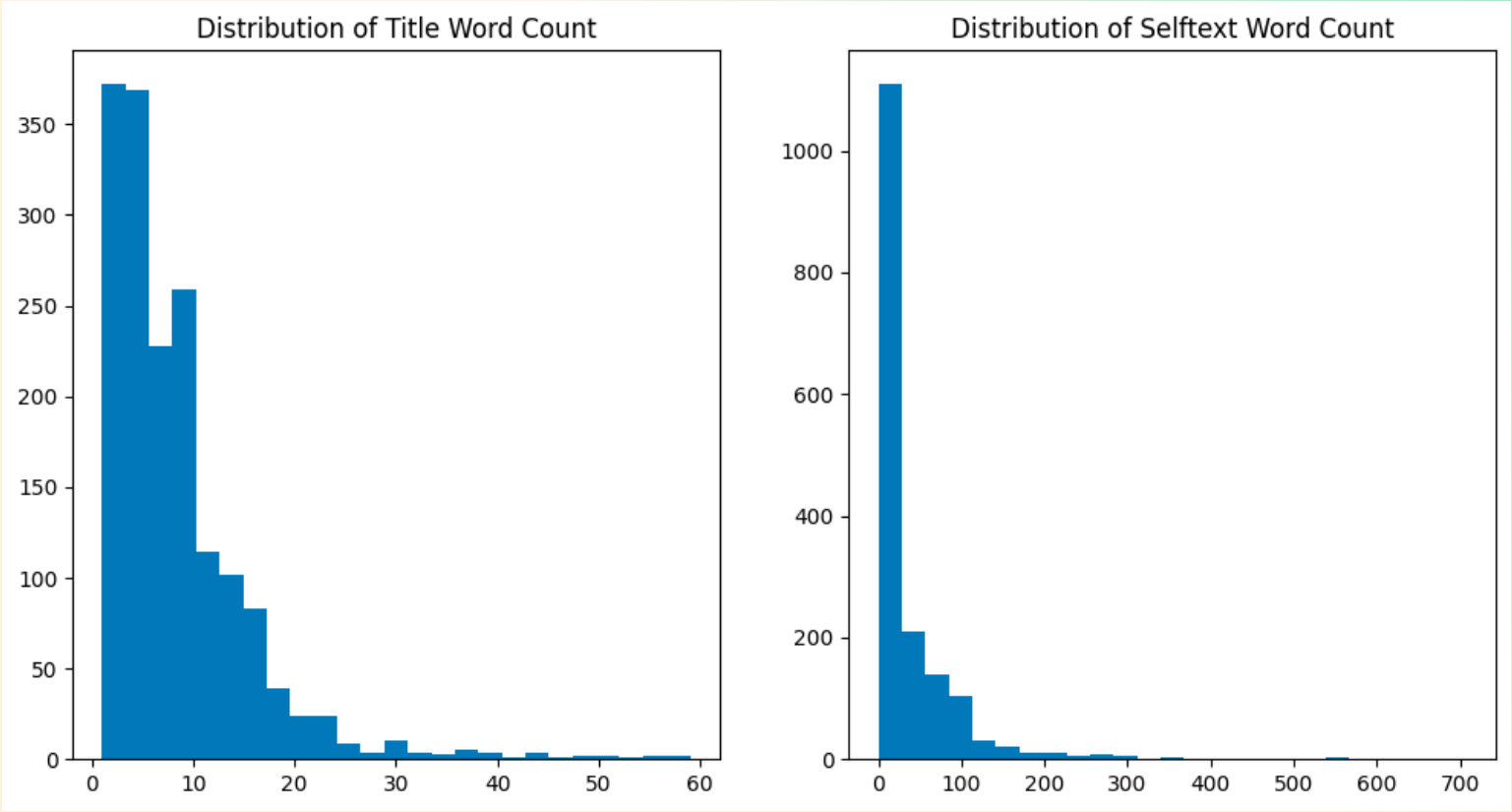
6. Lemmatization

WORD COUNT DISTRIBUTION



QUICK STATS

1. Mean r/Ohio title word count: 8.75
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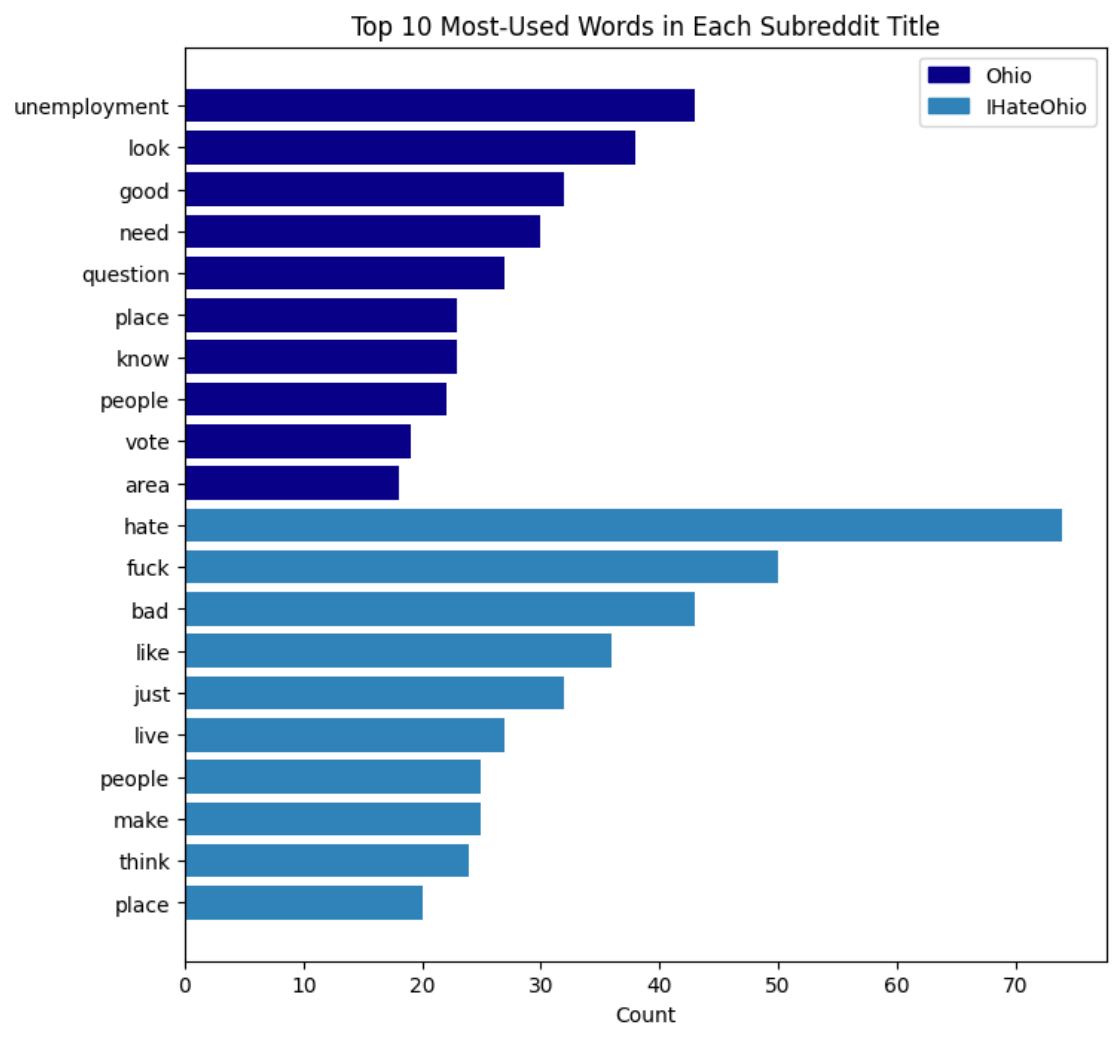
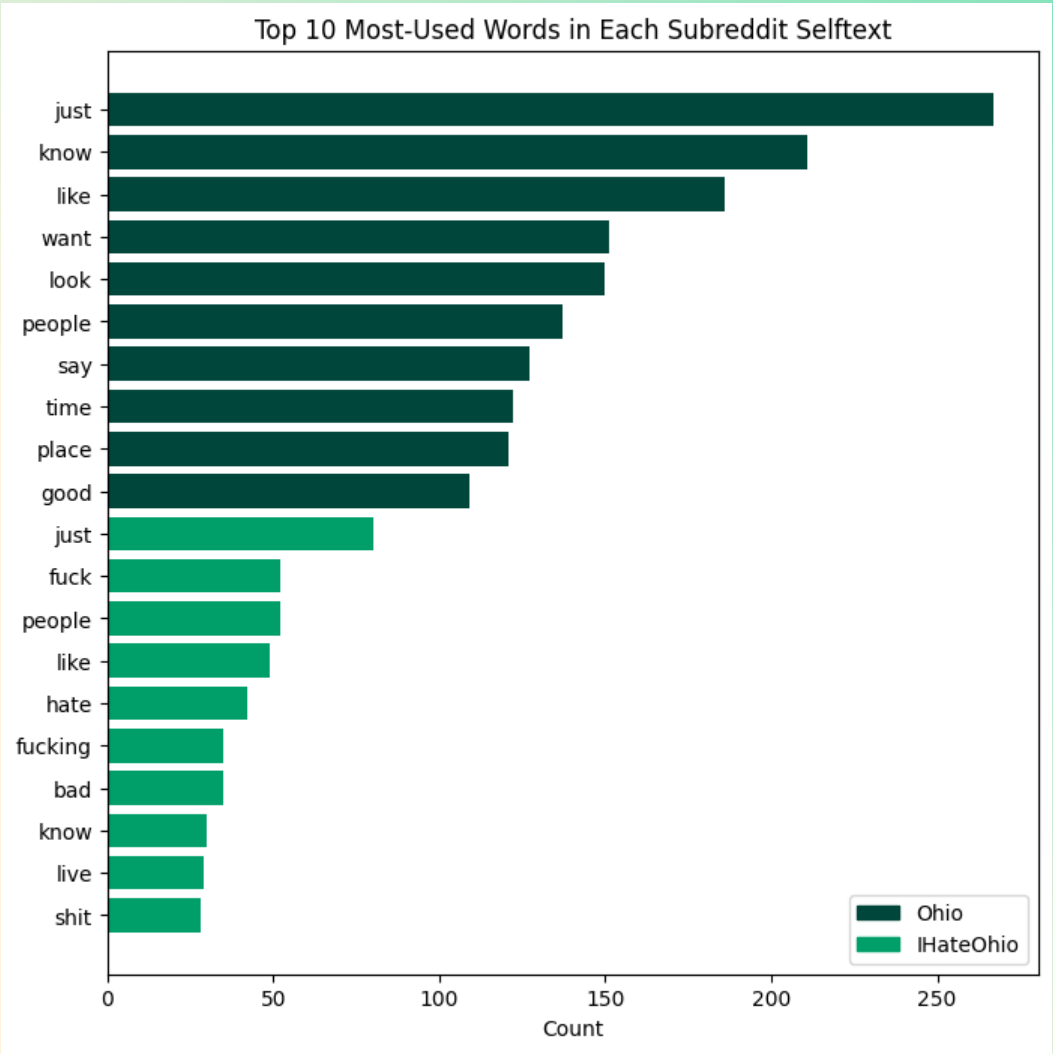
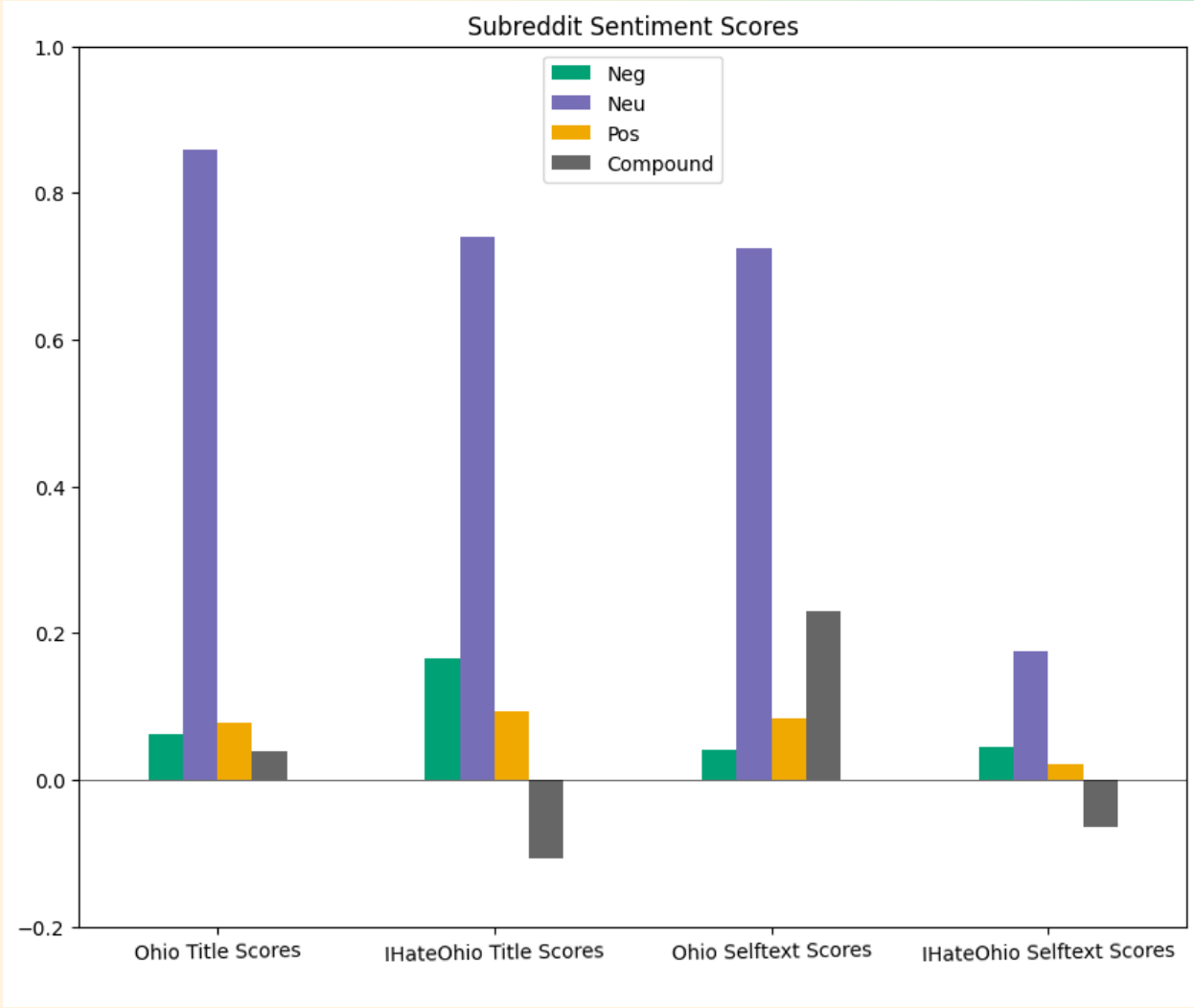
3. Mean r/Ohio selftext word count: 58.37
4. Mean r/IHateOhio selftext word count: 9.96
5. Users who posted in both subreddits: 1



- English and custom stop words removed
- Ohio words are more information-focused and specific
- IHateOhio words are more opinion-based
- One shared word: people

- Ohio words are similar to those seen in title chart
- IHateOhio words are more negative
- Four shared words: just, know, like, people





- All sections rank highest for neutrality
- IHateOhio Title compound score: −0.107
- Ohio Selftext compound score: 0.229

MODEL TRIALS

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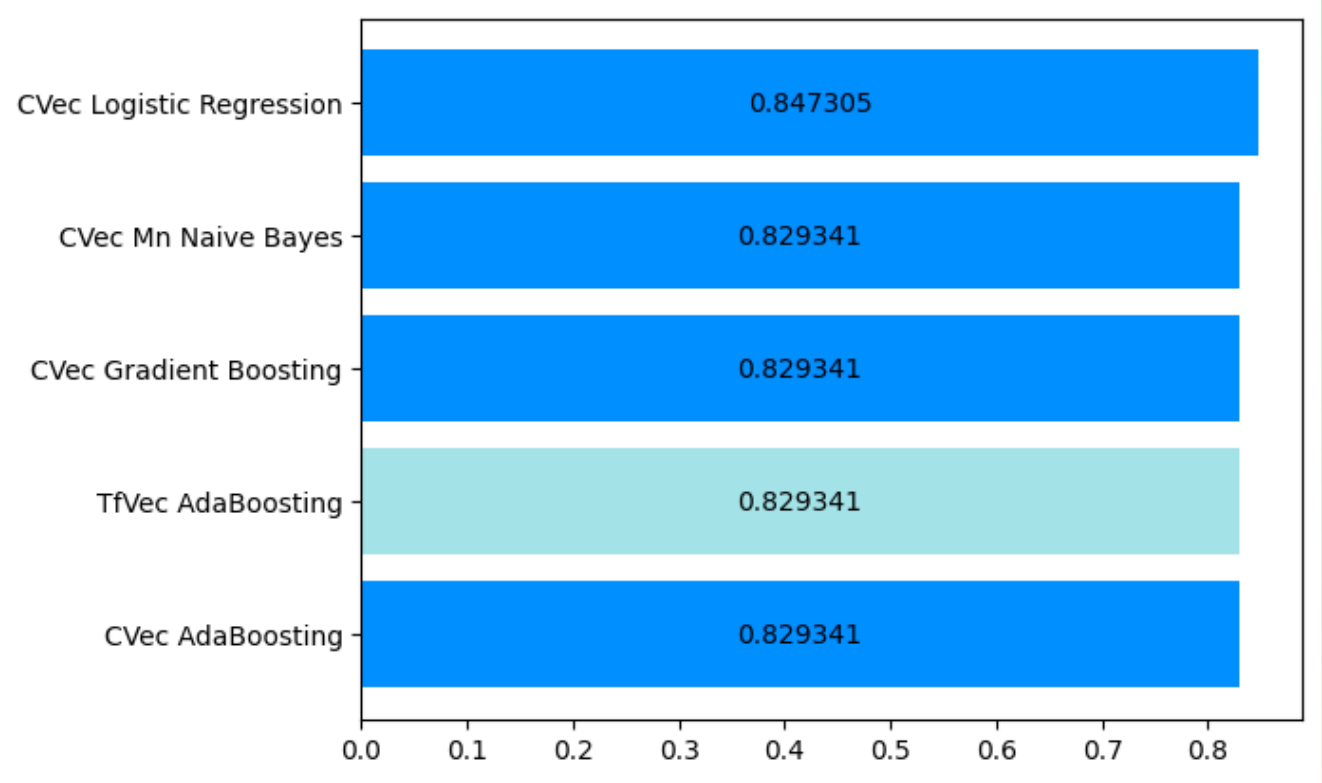
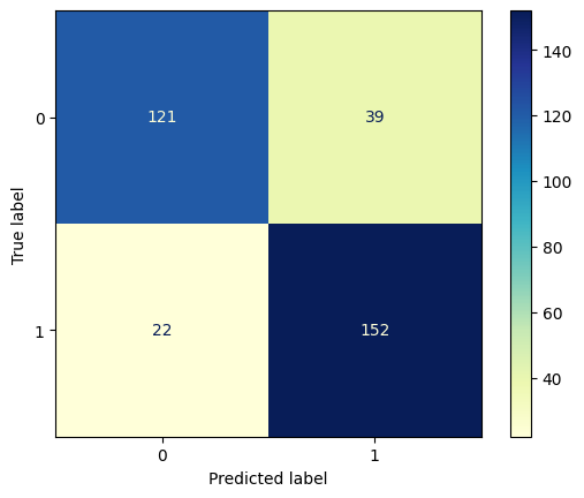
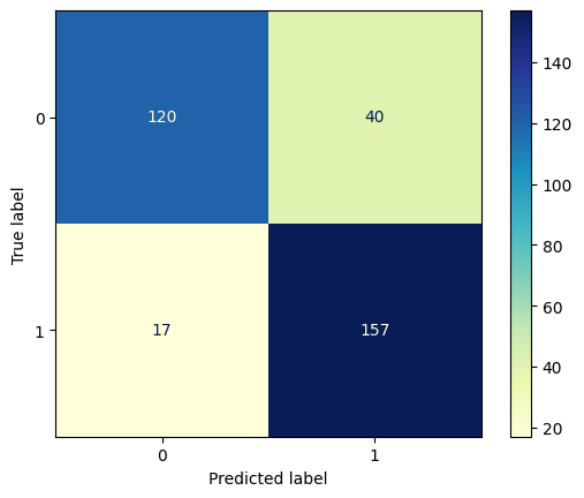
7. Minimum test score: 0.522

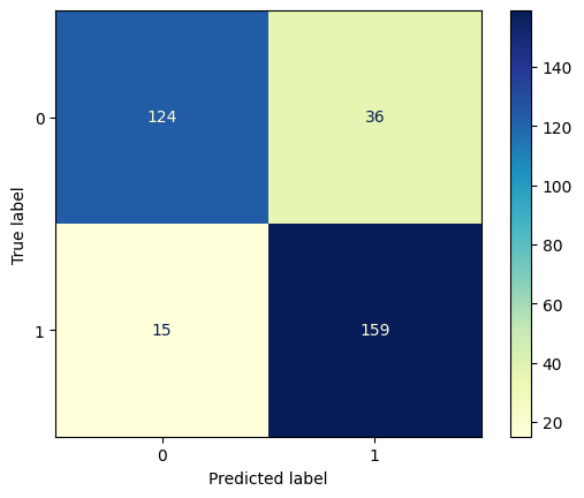
TOP-SCORING MODELS



MISCLASSIFICATIONS







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Post text	Pred class	True class
for the love of god someone save me the allergens are killing me and it was snowy until april	Ohio	IHateOhio
my wife is from ohio, i'm from eastern pa. multiple times a year i have to drive into that hell hole and pretend that terrible pizza is good pizza. f**k ohio pizza, f**k ohio.	Ohio	IHateOhio

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hey i’m born and raised in ohio its f**king awful here we have nothing but corn and cleveland	Ohio	IHateOhio
i absolutely hate ohio. that stupid state. it's shaped like a f**king deformed square, doesn't even have anything special about it compared to chad states like texas	Ohio	IHateOhio

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5. Best-scoring model: CountVectorizer Multinomial Naïve Bayes, 0.86228 test score

MODEL CONCLUSIONS

- Minimum threshold score of 0.85 was met
- Feature importance did not provide any valuable information
- Reddit is not useful for identifying places or experiences in Ohio that an advertisement team could build on
- Overall, full project statement goal was not achieved

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5. Advise the marketing team