

Shower Thoughts v Intrusive Thoughts

Project 3 | DS1 523 | Adriana J Machado



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1.0

Background & Food for Thought





Telehealth is Booming



1964-1966

ELIZA (MIT Artificial Intelligence Laboratory by Joseph Weizenbaum)



Global mental health apps
hit 4.2 billion USD

2021

2030

Global mental health apps
projected to hit 17.5 billion
USD



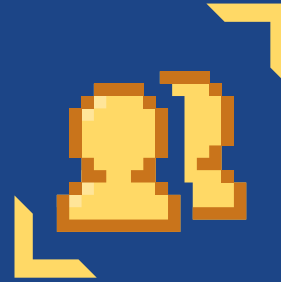


Social Responsibility



AI in Mental Health Services

Funded, widely-used, nonprofit mental health services are using AI to detect crises in individual help-seekers



PRIVACY

Mozilla has a running list of mental health apps (counseling/therapy, prayer, meditation, etc.) and their data privacy ratings



Reddit: Not Clinical Research



r/ShowerThoughts
r/IntrusiveThoughts



Anonymity
& Honesty



2.0

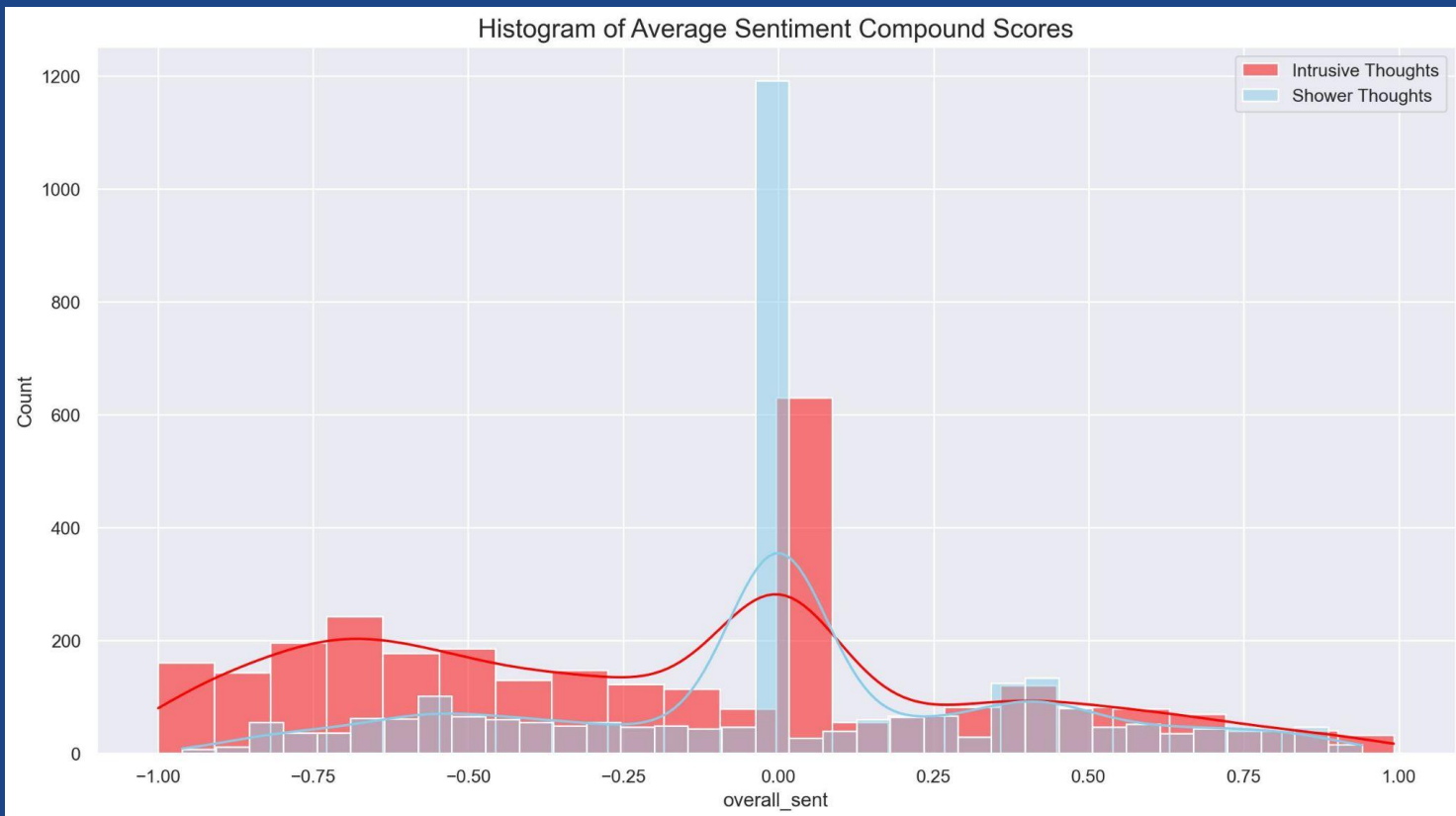


Exploratory Data Analysis

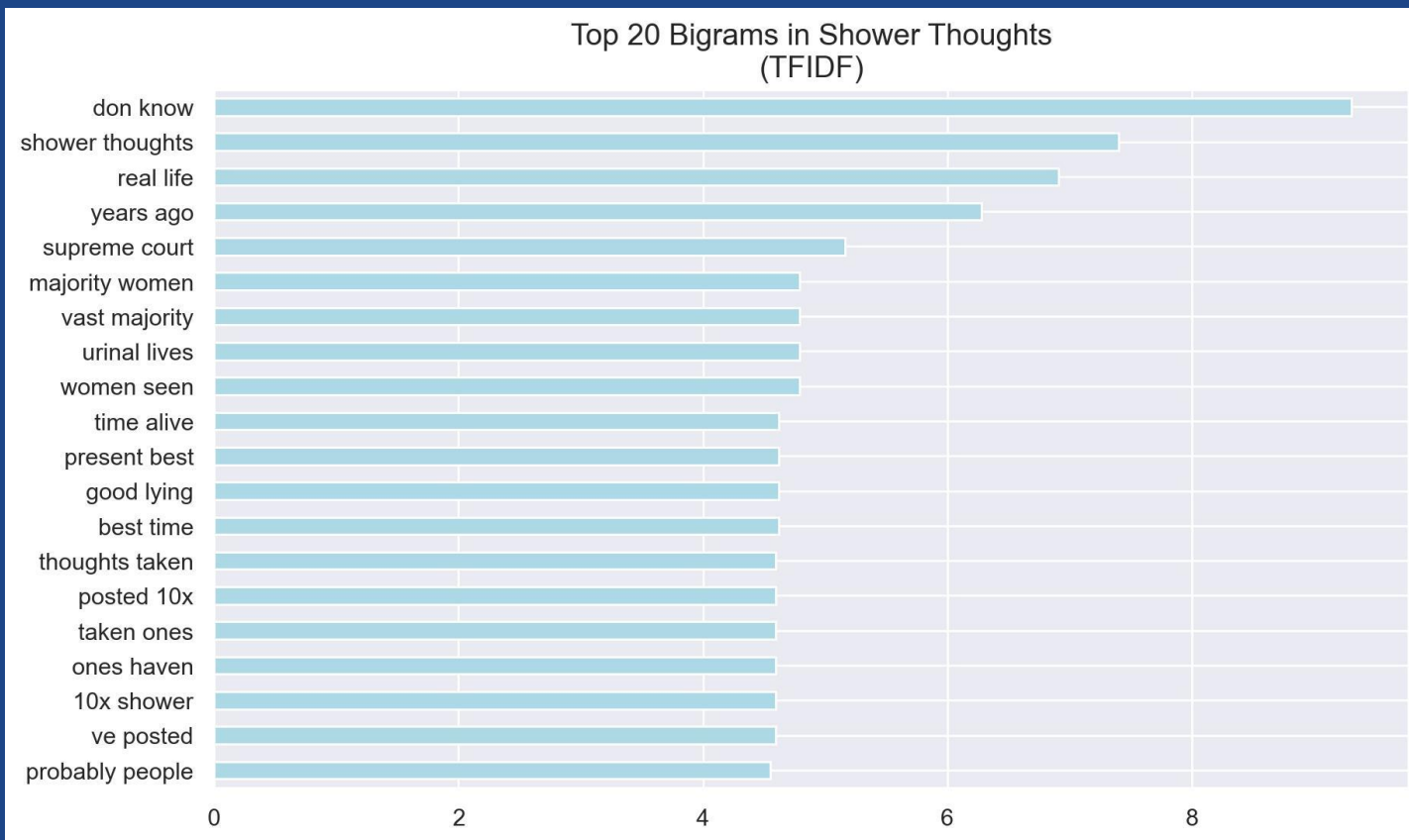




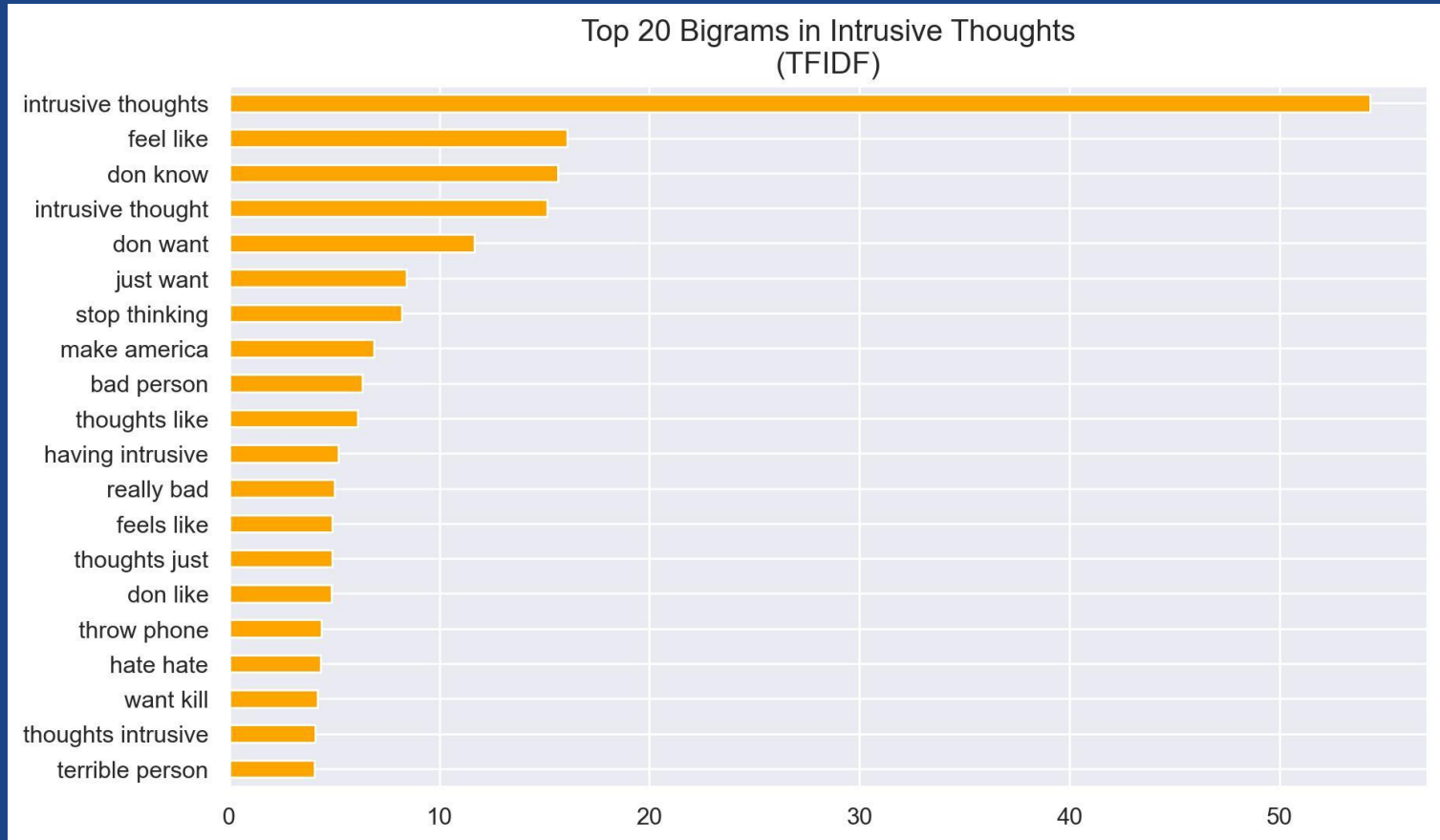
Sentiment Intensity



Shower Thoughts Bigrams



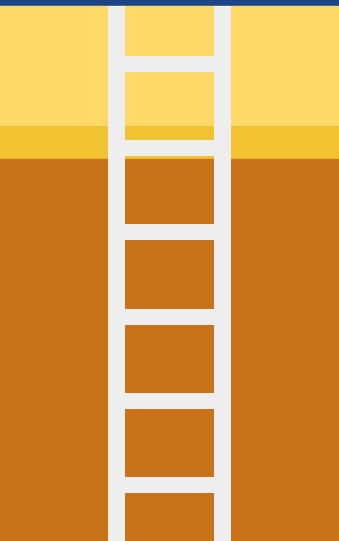
⬅ Intrusive Thoughts Bigrams ➡





3.0

Modeling





96.5%

Test Accuracy w/ CountVectorizer, Multinomial
Naive Bayes (bigrams and kept stop words)





High Scores

Positive: just an r/ShowerThought, nbd



Accuracy

all correct/all predictions

Train: 98.2% | Test: 96.5%

Difference: 16%



Precision

true positives/pred. pos.

Test: 97%



Recall

true positives/all pos.

Test: 96%



F1 Score

precision & recall relation

Test: 97%

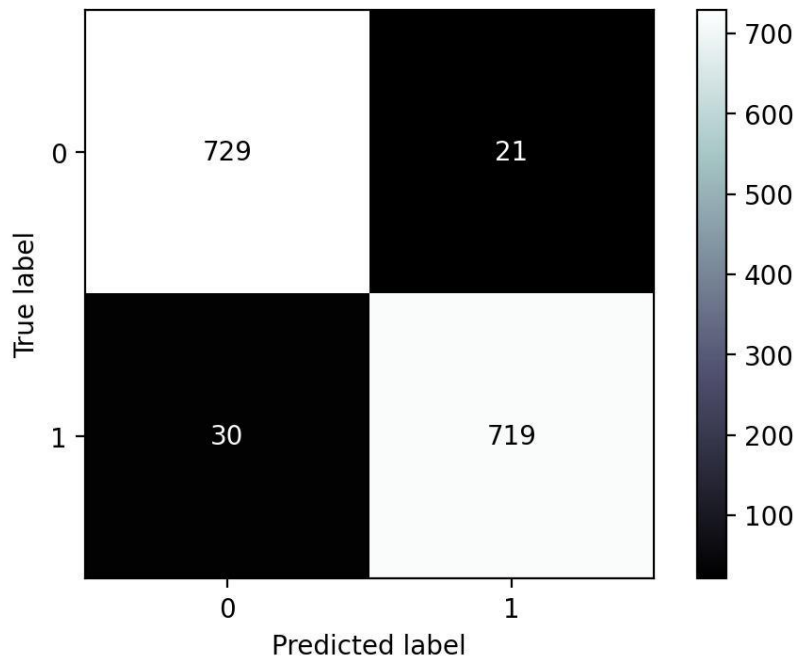




Confusion Matrix



CountVectorizer & Multinomial Naive Bayes | ngram_range = (2,2)
0 = Intrusive Thoughts | 1 = Shower Thoughts





4.0

Recommendations

- Iterate to stay up to date
- Conduct more controlled clinical research w/ predictive modeling and artificial intelligence in mental health apps
- Consider the individual consequences in policy-making and how these apps may be impacted by policies like the Tarasoff Law



THANKS!

Any questions?

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