

# RELATIONSHIP & DATING ADVICE CLASSIFICATION

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## DATA SCIENCE PROBLEM

“

WHEN IS A SUBREDDIT POSTING  
CATEGORIZED TO RELATIONSHIP  
ADVICE OR DATING ADVICE?

— *Bad Tri*

”

# RELATIONSHIP VS DATING

## RELATIONSHIP ADVICE

↑ Posted by u/verhon 4 hours ago

### 5 Cheated by my girlfriend (21)

Hello, I'm just writing this so by any chance one of you can give me some advice.

I been dating this girl for about 5 months now. After the Christmas holidays we came back to Uni.

I feel her so distant and didn't know what to do so I was asking her what's all about. And she didn't tell me.

↑ Posted by u/graceddalton 28 minutes ago

### • Valentine's Day Gift For My (18F) 20M Boyfriend of 3 Months

hey there! i am totally overthinking Vday and i was hoping for some advice. unpopular opinion- i ADORE valentine's day. i think the whole concept is adorable and i'm a sucker for it. however, i don't really know bf's stance on it.

↑ Posted by u/tj561wpb 3 hours ago

### 2 Are differences enough to break up

Me and my girlfriend have been dating for a lil less then two years and things have been good, we've had our ups and downs but have always managed to get through it but not

## DATING ADVICE

↑ Posted by u/JoanOfArcInFailWhale 17 hours ago

### 2.7k Re: I got his number (and how kindness won the day).

So I wanted to do a followup to a recent post of mine from about two weeks ago. In the post, I mentioned how I met a very charming man at a men's clothing store. I was

↑ Posted by u/lmsta77 1 hour ago

### • Are depressed people not allowed to date?

This sub makes it seem that way, while overlooking the fact that companionship can definitely help depression

↑ Posted by u/IvanSusak64 2 hours ago

### 2 I need some first date tips.

16. I'm going on a date in 2 weeks with a girl im trying to impress. I got the whole evening planned out. I order a car to pick her up and drive her to the cinema where il be waiting with 2 gold class tickets. Now i have some questions. Do i go with her in that car

↑ Posted by u/zawhat 48 minutes ago

### • Do you get more matches if you are athletic and play sports or something?

## WHY PREDICT?

- Target first timers and those with a bad relationship past
- Friends and Family may not be enough
- Embarrassing to tell others about partner seeking
- Maximize partnership time
- Minimize forever alone time



# DATA CLEANING

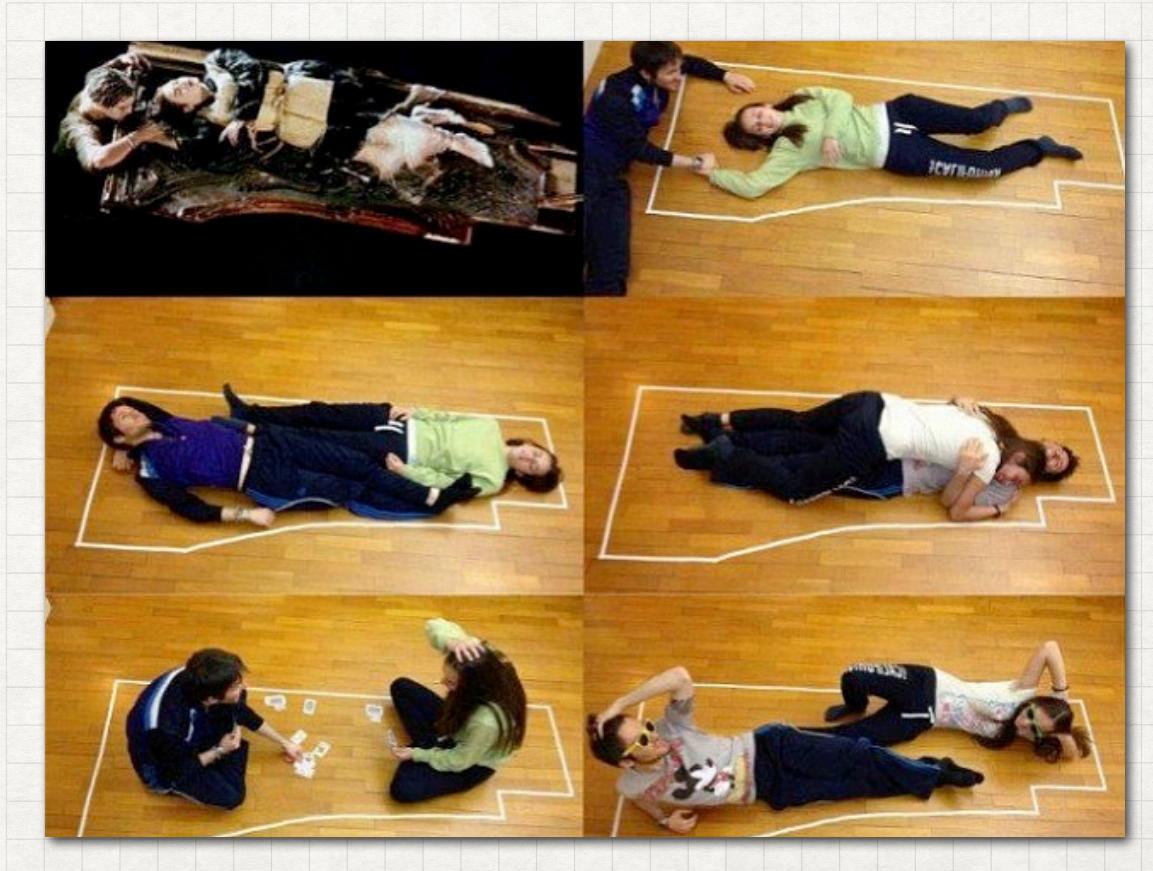
- 1000 Posts from each Subreddit
- Reddit Push API
- Drop rows containing
  - Duplicates
  - Null Values
  - [deleted]
- 

CONFUSION MATRIX

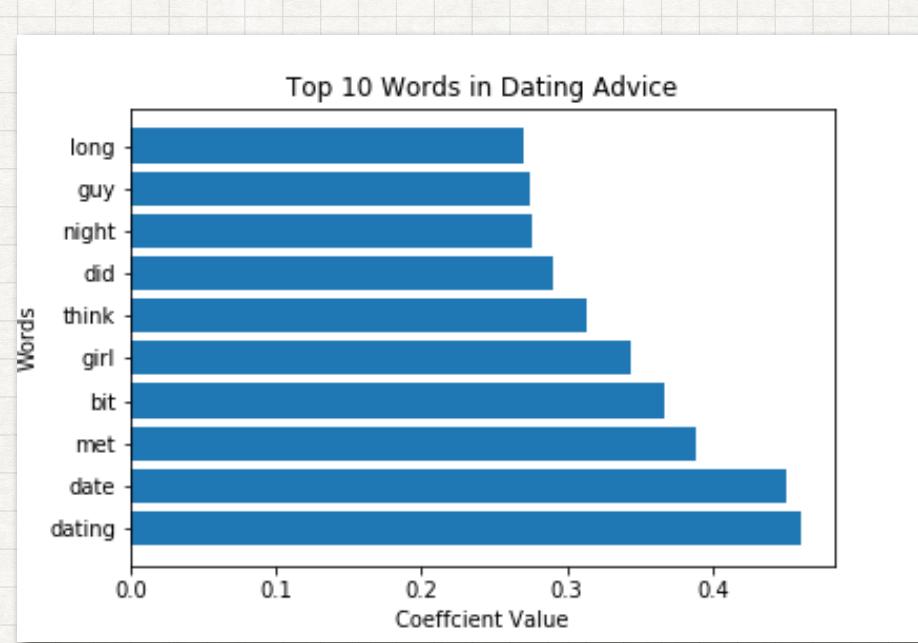
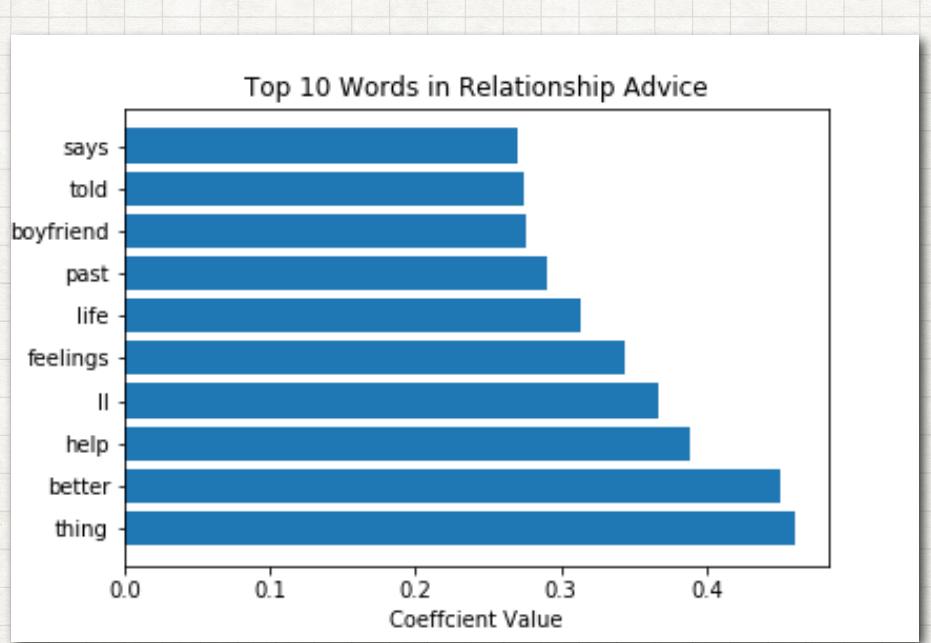
	Relationship Advice	Dating Advice
Relationship Advice	240	75
Dating Advice	113	207
<b>SENSITIVITY: 0.68</b> <b>SPECIFICITY: 0.73</b>		

# MODELING

- Pipeline with
  - Count Vectorizer
  - Stop Words
  - n\_gram (1,2)
- Logistic Regression
- Multinomial Naive Bayes



# WORD FREQUENCY WITH COEF VALUES



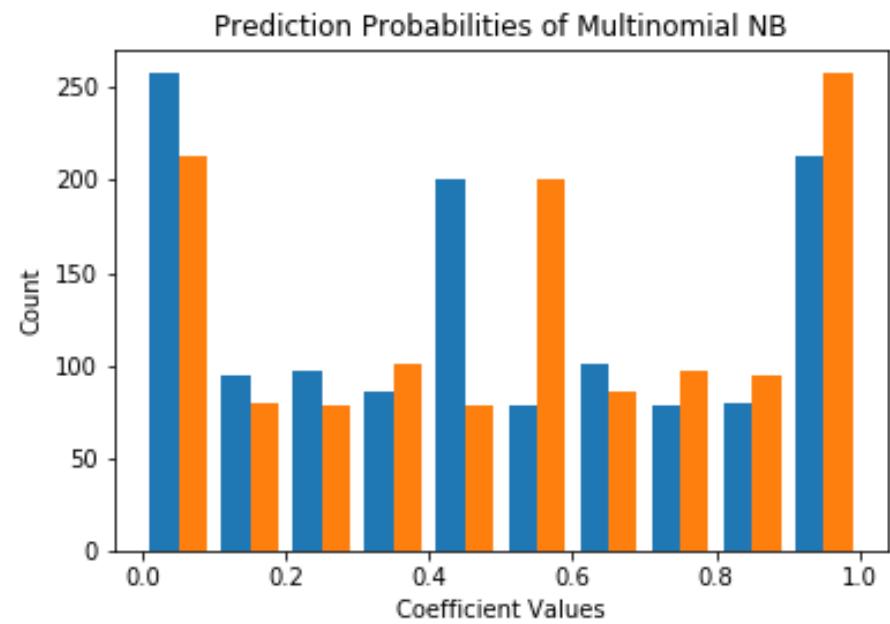
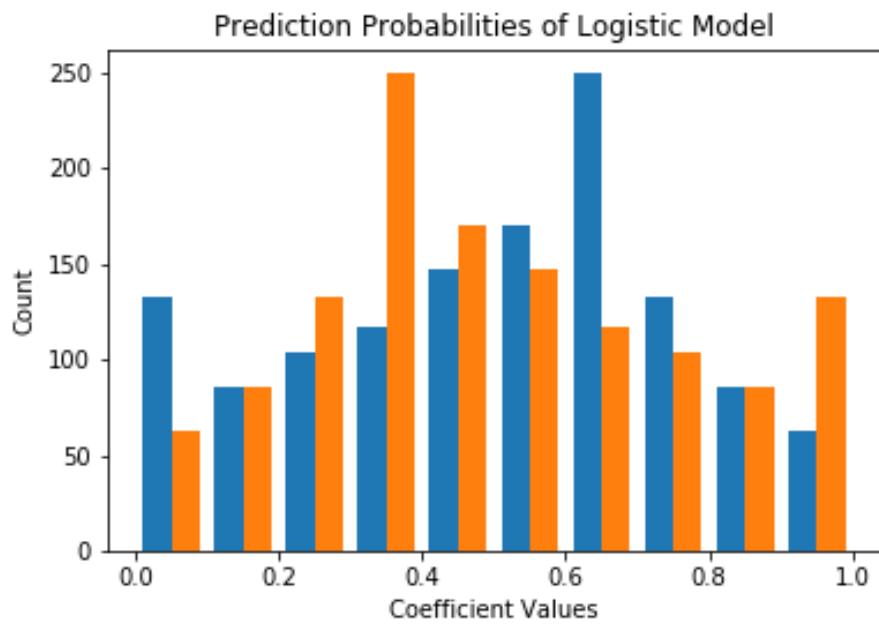
# COMPARING MODEL SCORES

## R<sup>2</sup> SCORES

	Logistic Regression	Multinomial Naive Bayes
Train	0.74	0.68
Test	0.75	0.71

- Logistic Model train model is close to the test score a bit under fitting
- Multinomial Naive Bayes train model R<sup>2</sup> score is lesser than the logistic model making it more under fitting than the logistic model

# LOGISTIC REGRESSION VS MULTINOMIAL PREDICTION PROBABILITIES



## IN SUMMARY

- Logistic Regression gave the best score
- Regularization may be needed
- Lemmatizing/Stemming may increase accuracy score

