



TARGET MARKETS

3/4/2022

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MODELING



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NEXT STEPS

WELCOME!

DAN COSTA

DATA SCIENTIST

MARKETING DIVISION



PROJECT OVERVIEW



PROJECT OVERVIEW



DATA COLLECTION

Backpacking
&
Ultrarunning
Subreddits



EDA

Feature Engineering
Sentiment Analysis



MODELING

Logistic Regression
Random Forest



GOAL

Classification Model

Predict Backpacking



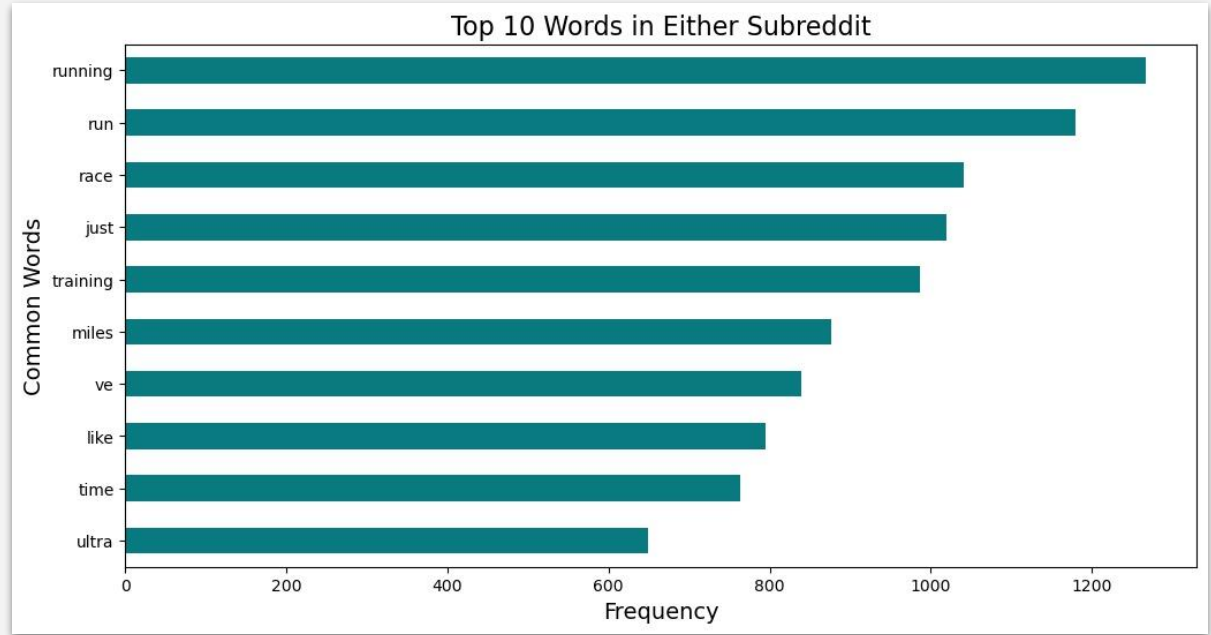
EDA & MODELING

EXPLORATORY DATA ANALYSIS



MOST COMMON WORDS

Backpacking & Ultrarunning

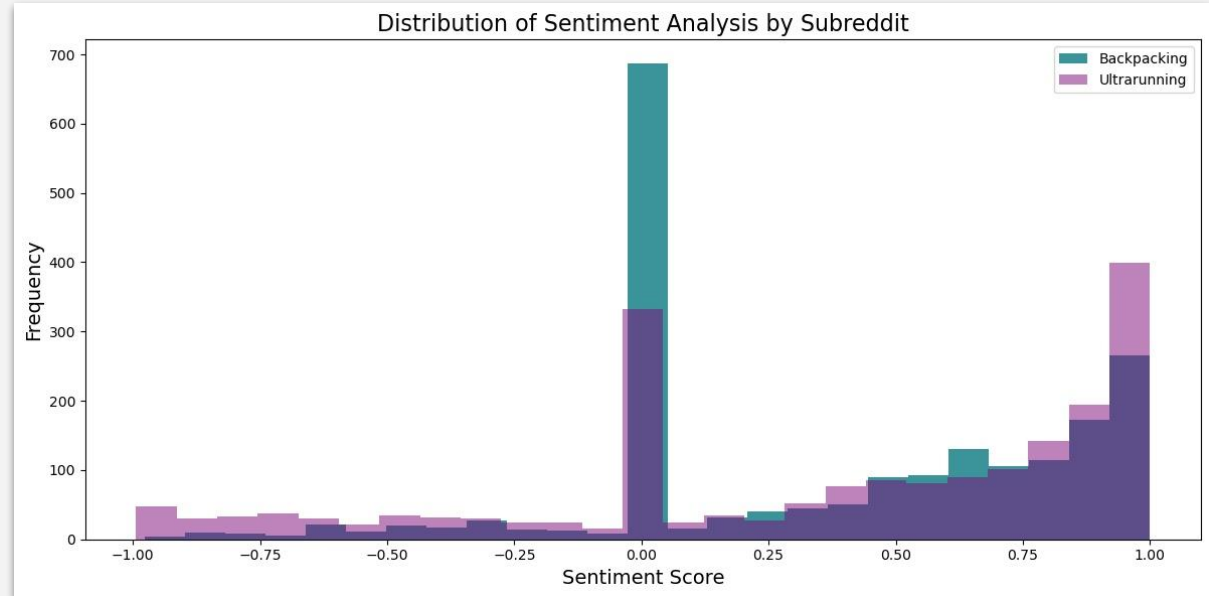


EXPLORATORY DATA ANALYSIS



SENTIMENT ANALYSIS

Backpacking vs. Ultrarunning





MODEL COMPARISON

Backpacking vs. Ultrarunning

	Model One	Model Two
Model Type	Logistic Regression	Random Forest
Methodologies	Pipeline CountVectorizer FeatureUnion GridSearchCV	Pipeline CountVectorizer FeatureUnion GridSearchCV
Parameters	binary: [True , False] max_iter: [1500]	binary: [True , False] n_estimators: [75, 100, 125] max_depth: [None , 3, 4, 5] max_features: ['auto' , 3, 4, 5]
Accuracy Score	0.933	0.919



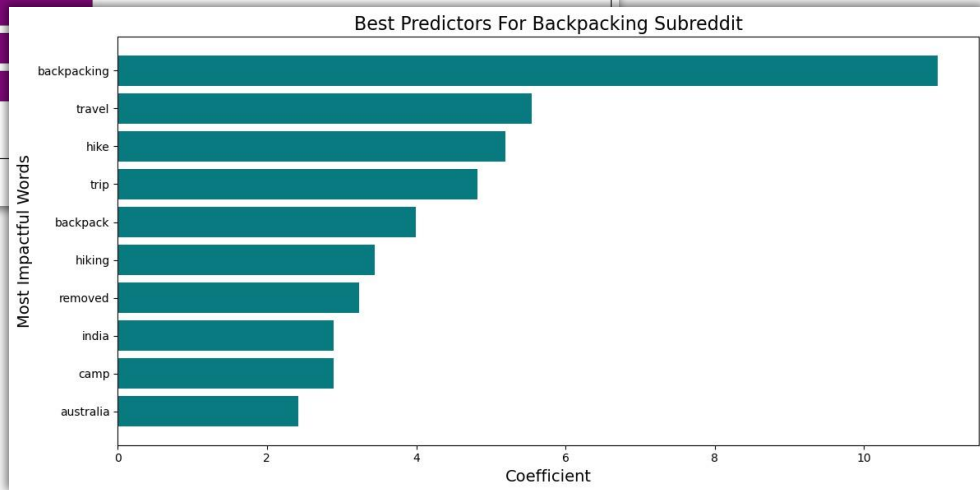
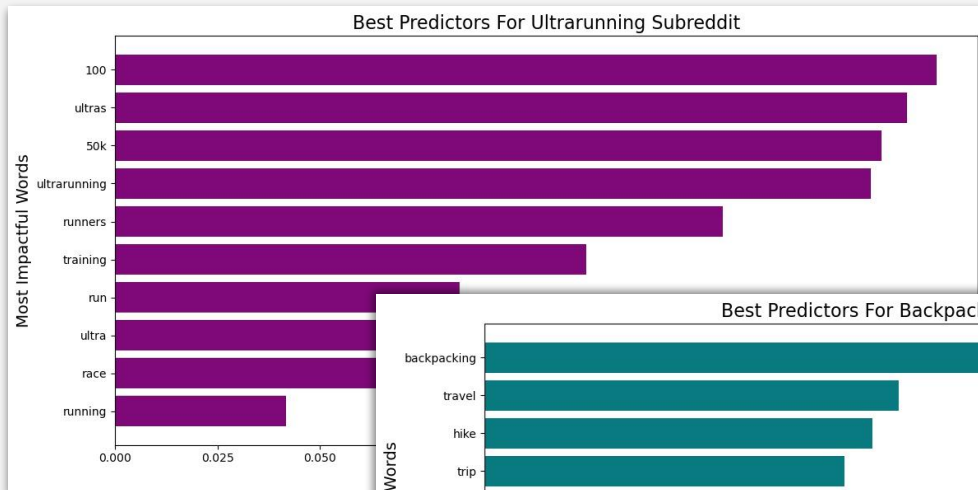
MODEL REVIEW

MODEL REVIEW



MODEL COEFFICIENTS

Backpacking vs. Ultrarunning

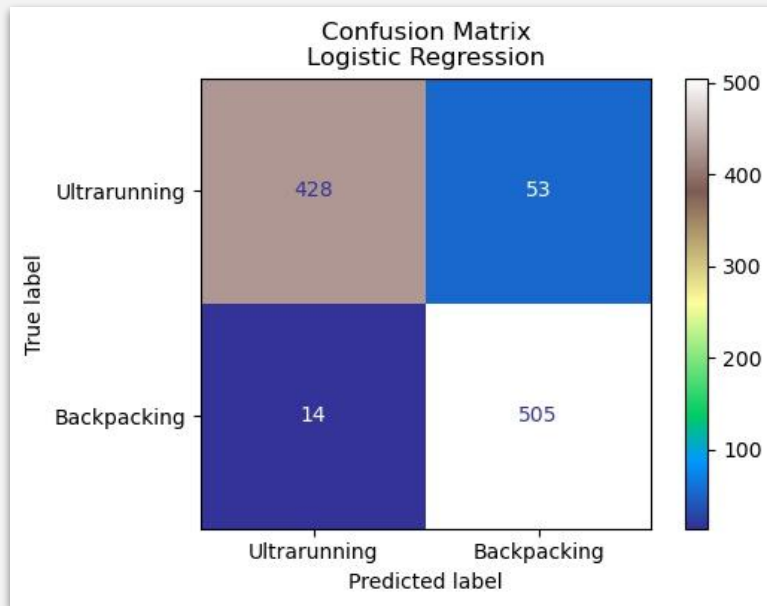


MODEL REVIEW



CONFUSION MATRIX

Identify Misclassified Posts



Accuracy Score: 0.933

MODEL REVIEW



MODEL MISCLASSIFICATIONS

Ambiguous Words

title_merge	
1178	My lighting kit for all overnight trips. What do you all bring and why?
729	What kind of pillow do you use, and what other types have you tried? What kind of pillow do you usually use lately, and what types of you used in the past? What didn't you like about those that you like about your current pillow? Thanks
298	Who else has tried this insane incline??
283	recs for filtering bottles like nalgene's everyday type, but no straw? Or that don't use a soft straw if they do use a straw? mainly need to filter tap, have a multi year warranty / high durability like Grayl's 10yr, and bonus if lighter than stainless steel.



STOP WORDS

Generalize model by removing most popular words to train model differently

NEXT STEPS



TOKEN PATTERN

Try new patterns



NEW MODELS

Bagging
Stacking
Boosting



THANK YOU!

Does anyone have any questions?

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