FAKE NEWS DETECTION

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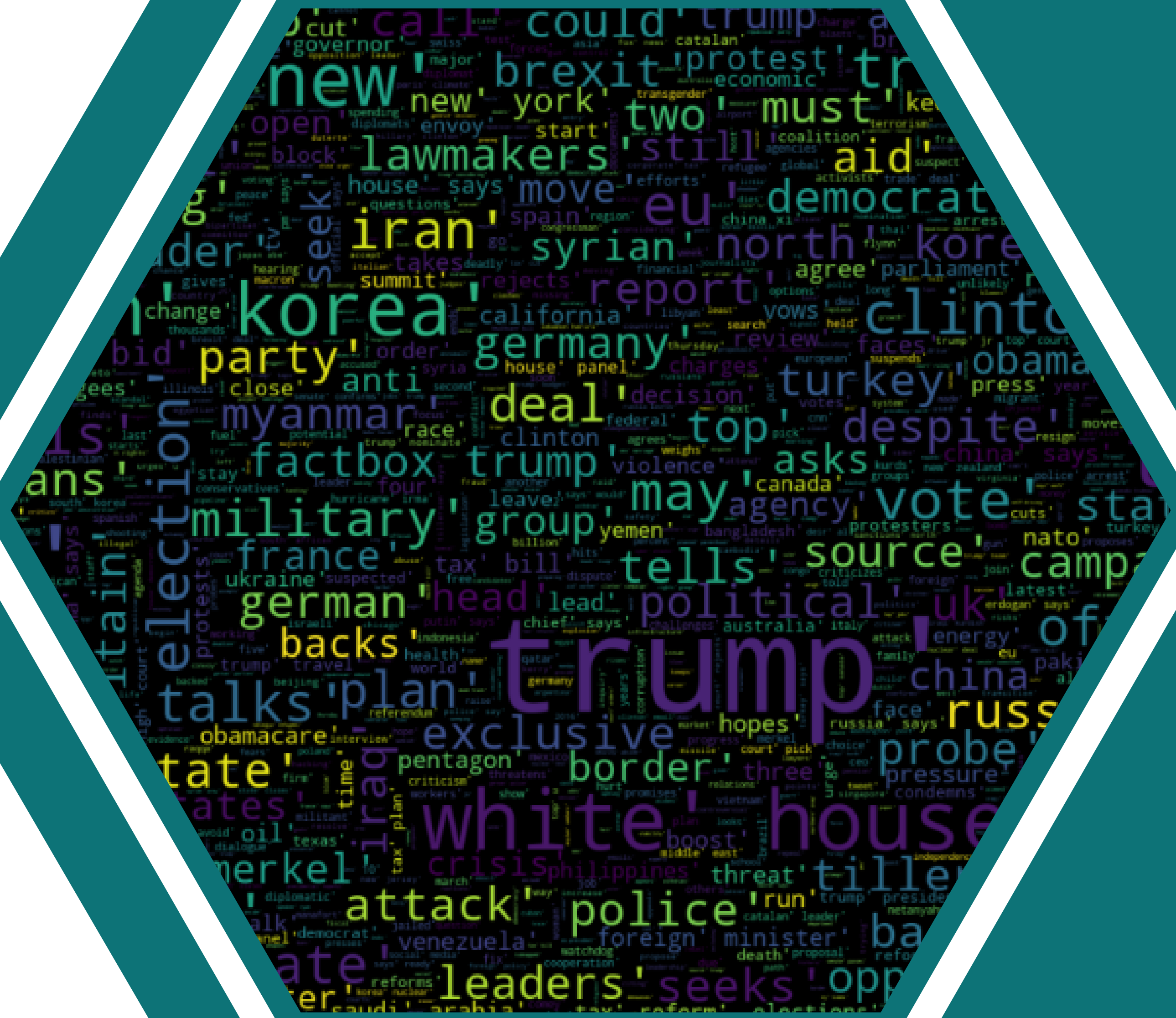


Data

Data preprocessing: combined title and main text, removed stop words from the content, links and punctuation, changed some of the short word forms to the long ones, dates encoding.

44,9

thousand entries

5

columns

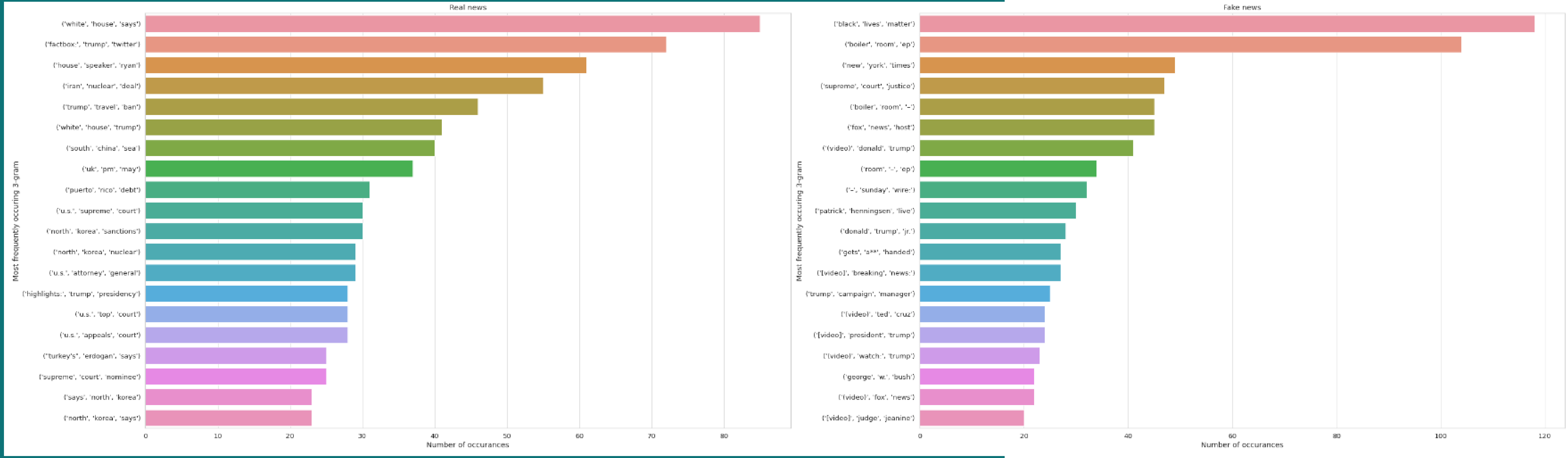
3

different methods

50/50

target distribution

EDA



In most cases fake news contains longer titles and text, using more complicated words. In addition, I checked the most popular common words for both real and fake classes (said, trump, us, would, president) and analyzed 3-grams for each class.

1 method

Logistic Regression

49% accuracy 46% precision

Naive Bayes Classifier

48% accuracy 47% precision

Random Forest

51% accuracy 67% precision

2 method

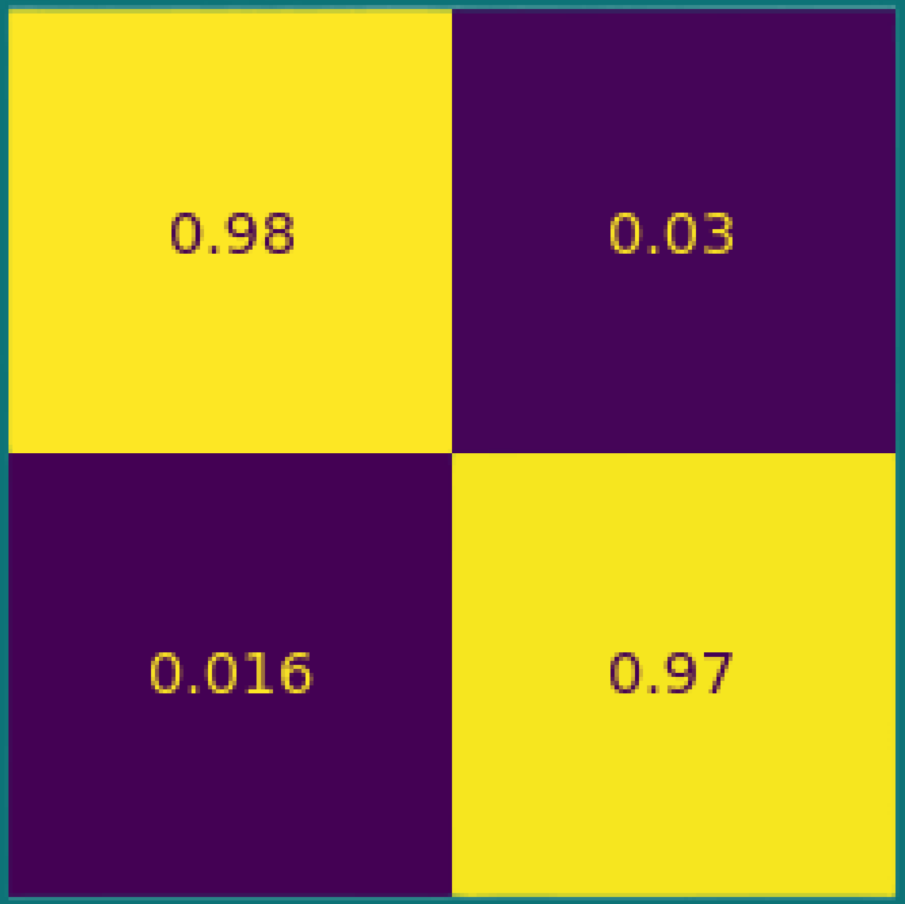
LSTM

98% accuracy

97% precision

98% recall

98% F1-score



0.98	0.03
0.016	0.97

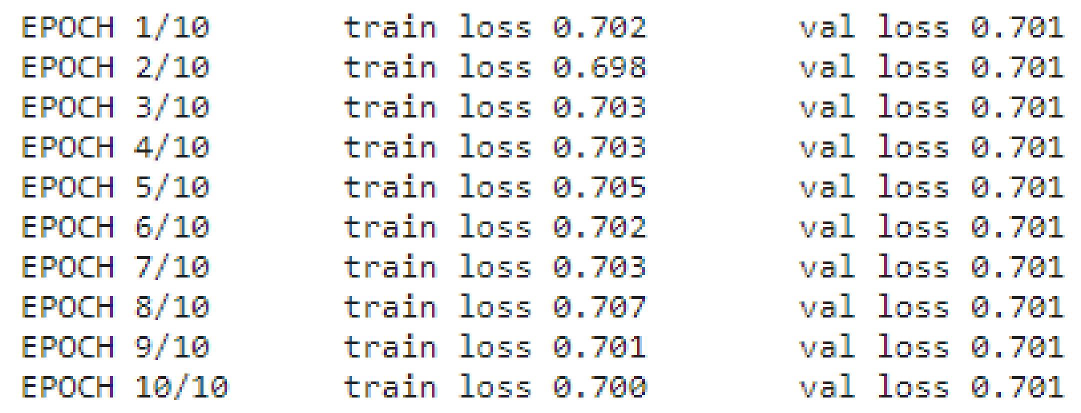
Confusion matrix

3 method

BERT

52% accuracy 52% precision

100% recall 68% F1-score



```
EPOCH 1/10       train loss 0.702       val loss 0.701
EPOCH 2/10       train loss 0.698       val loss 0.701
EPOCH 3/10       train loss 0.703       val loss 0.701
EPOCH 4/10       train loss 0.703       val loss 0.701
EPOCH 5/10       train loss 0.705       val loss 0.701
EPOCH 6/10       train loss 0.702       val loss 0.701
EPOCH 7/10       train loss 0.703       val loss 0.701
EPOCH 8/10       train loss 0.707       val loss 0.701
EPOCH 9/10       train loss 0.701       val loss 0.701
EPOCH 10/10      train loss 0.700       val loss 0.701
```

QUESTIONS