



# NEWS SATIRE DETECTOR

## Final Presentation

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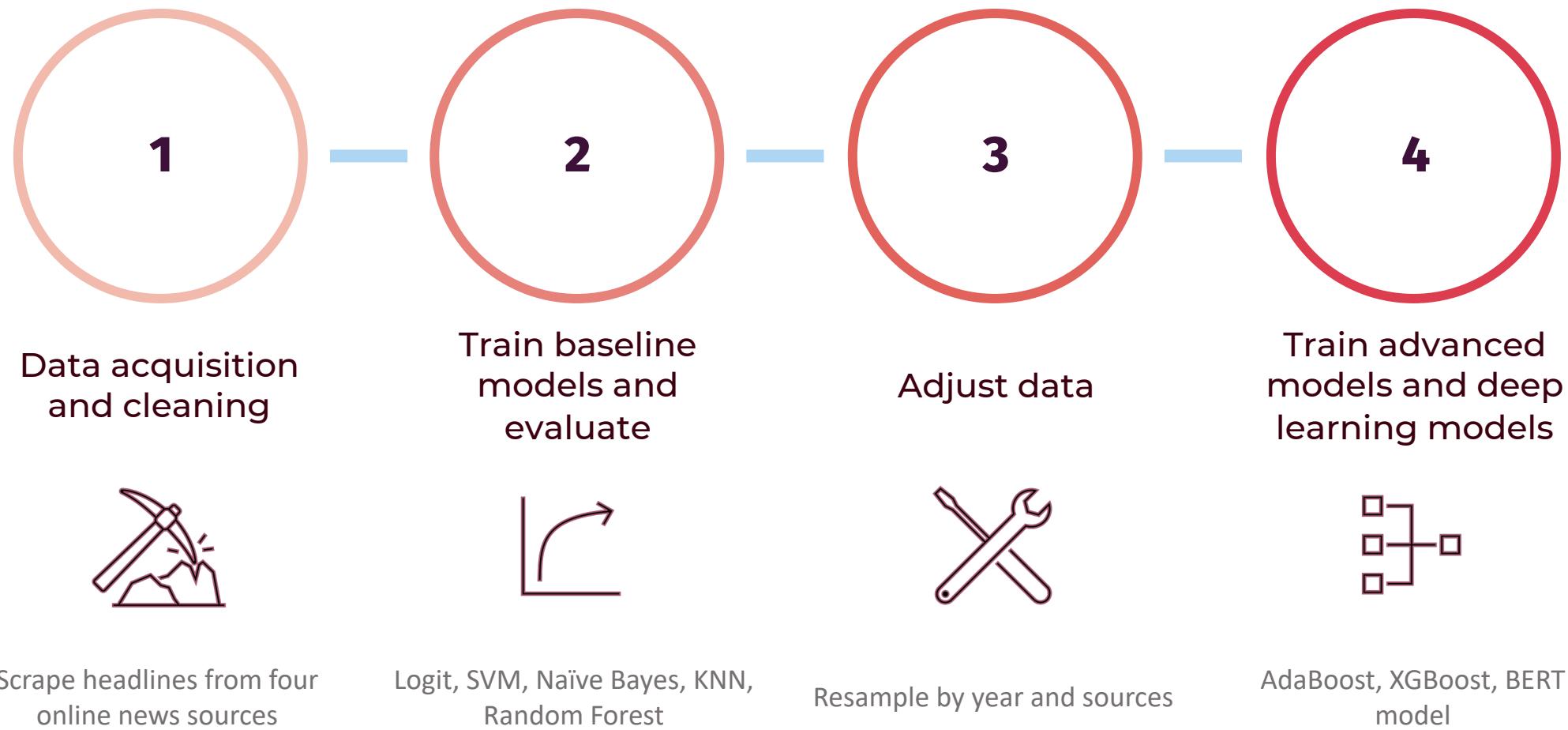
Gabriela Tanumihardja

# Where We Left Off...



- **Satirical News:**
  - Designed as social commentaries
  - Sometimes hard to spot
- **Predicting satirical nature from headlines**
  - Data scraped from legitimate and satirical News sites

# Project Framework



# Model Comparison

Model	Accuracies	
	Train	Test
Logistic Regression	0.84	0.79
SVM	0.9	0.78
Naïve Bayes	0.8	0.77
AdaBoost	0.73	0.76
XGBoost	0.90	0.77
Random Forest	0.99	0.76
BERT	0.95	0.90

- Best model – transfer learning using **BERT pre-trained neural network**
- Bidirectional Encoder Representations from Transformer (**BERT**):
  - Developed by Google
  - 12 layers, 110 M parameters
  - Takes account context into predictions

# BERT Model

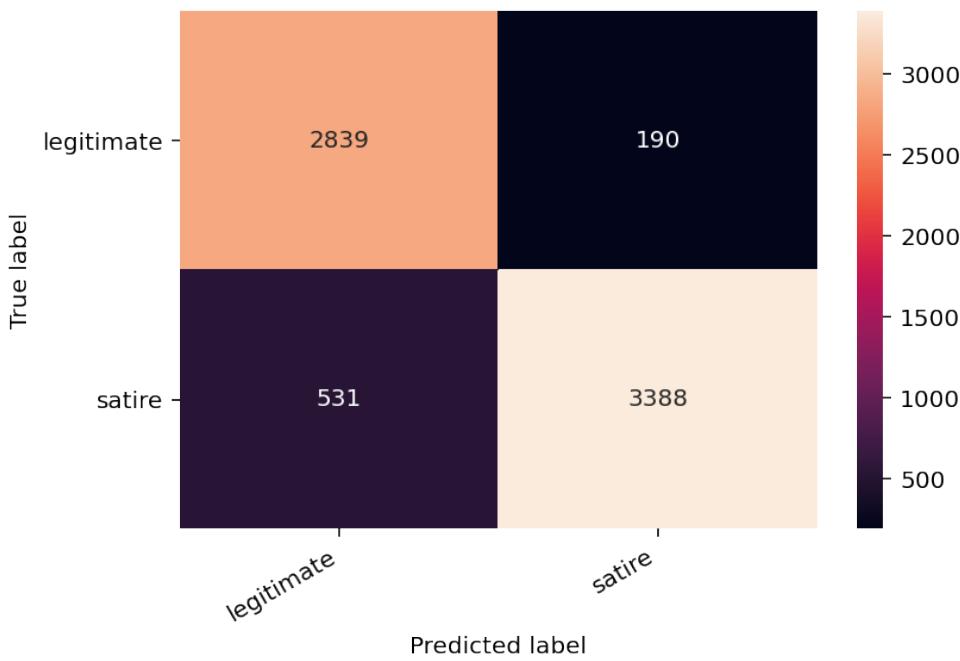
Model: "functional\_3"

Layer (type)	Output Shape	Param #
input_ids (InputLayer)	[(None, 66)]	0
bert (BertModelLayer)	(None, 66, 768)	108890112
lambda_1 (Lambda)	(None, 768)	0
dropout_2 (Dropout)	(None, 768)	0
dense_2 (Dense)	(None, 768)	590592
dropout_3 (Dropout)	(None, 768)	0
dense_3 (Dense)	(None, 2)	1538

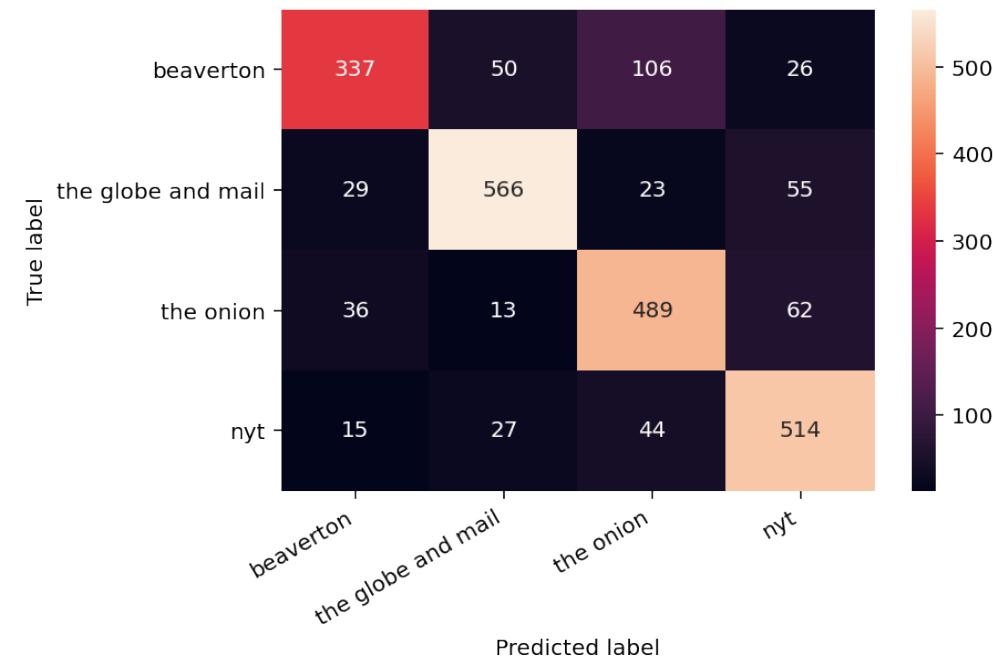
Total params: 109,482,242  
Trainable params: 109,482,242  
Non-trainable params: 0

- **Fine tuning model:**
  - Use an adapter module
  - Freeze original weights in BERT layer
  - Feed into softmax layer

# BERT Results



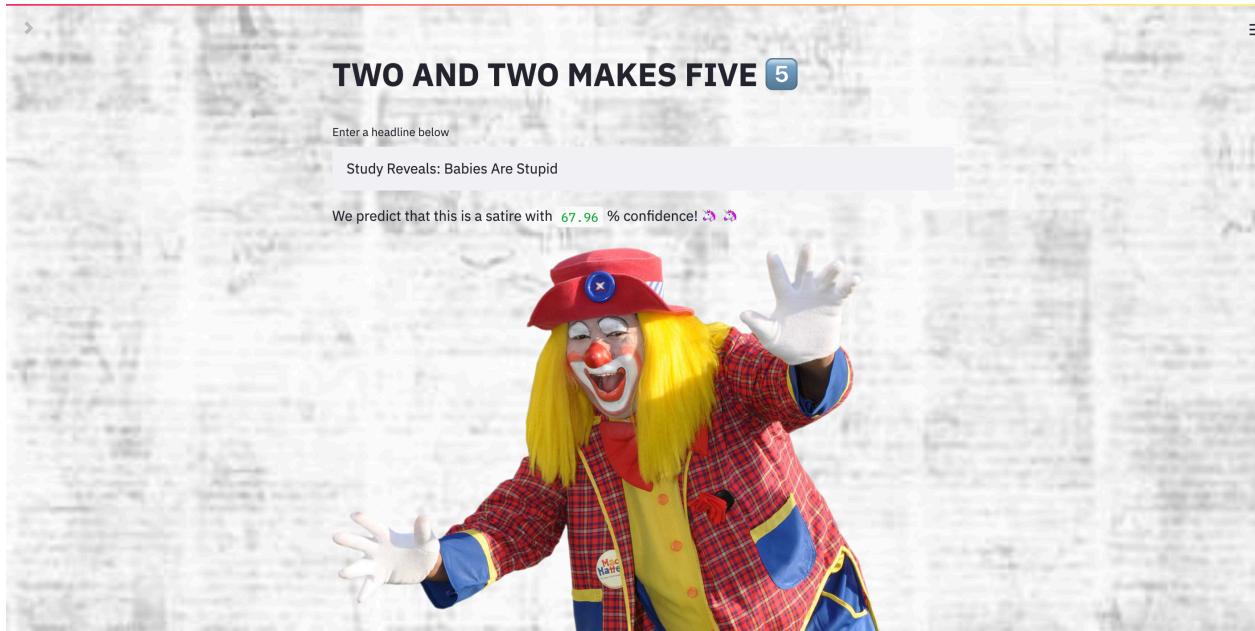
precision: 0.90  
recall: 0.90  
accuracy: 0.90



precision: 0.80  
recall: 0.80  
accuracy: 0.80

# Serve up!

Using StreamLit to create an app where headlines can be entered and a prediction can be produced



# Q+A

