

NLP IN APPs

Final Presentation | 18 Dec 2021

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TABLE OF CONTENTS

01 Project Apps

02 Model Development

03 Deployment

04 Q & A





DEMO

Speech2Text API Webkit 2.0

Website Demo by Flask App

SENTIMENT ANALYSIS



NEGATIVE

Totally dissatisfied with the service. Worst customer care ever.



NEUTRAL

Good Job but I will expect a lot more in future.



POSITIVE

Brilliant effort guys! Loved Your Work.

DATASET INSIGHT

DATASET

IMDB dataset
50K movie reviews

TYPE

Binary sentiment
classification

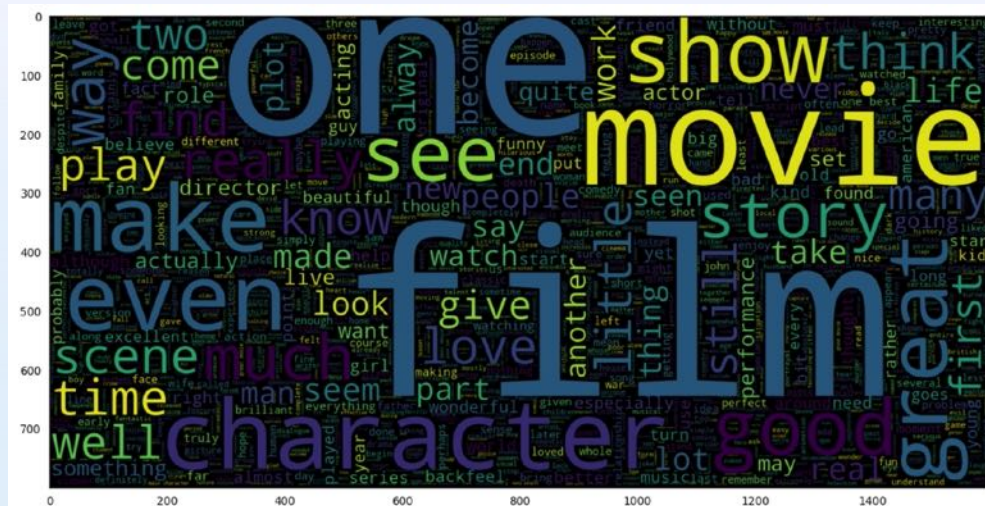
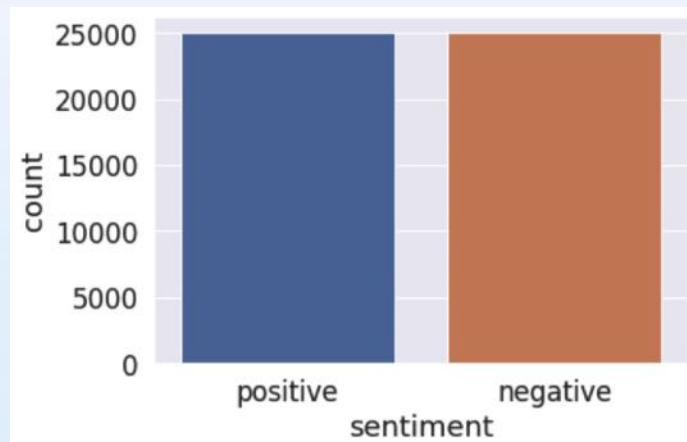
RATE

25K Training
25K Testing

Example

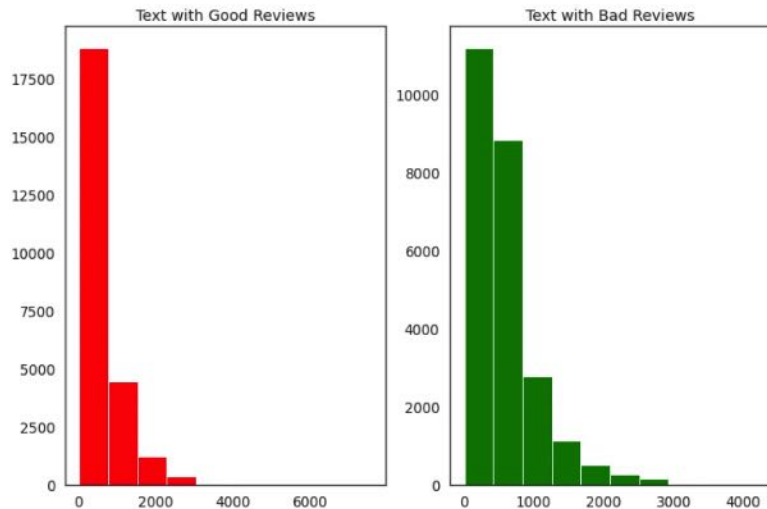
	review	sentiment
0	One of the other reviewers has mentioned that ...	positive
1	A wonderful little production. The...	positive
2	I thought this was a wonderful way to spend ti...	positive
3	Basically there's a family where a little boy ...	negative
4	Petter Mattei's "Love in the Time of Money" is...	positive

DATASET INSIGHT

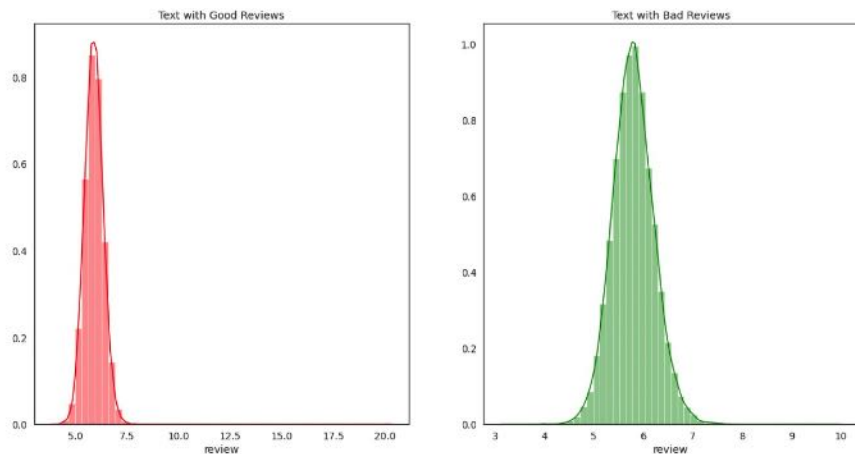


DATASET INSIGHT

Characters in texts

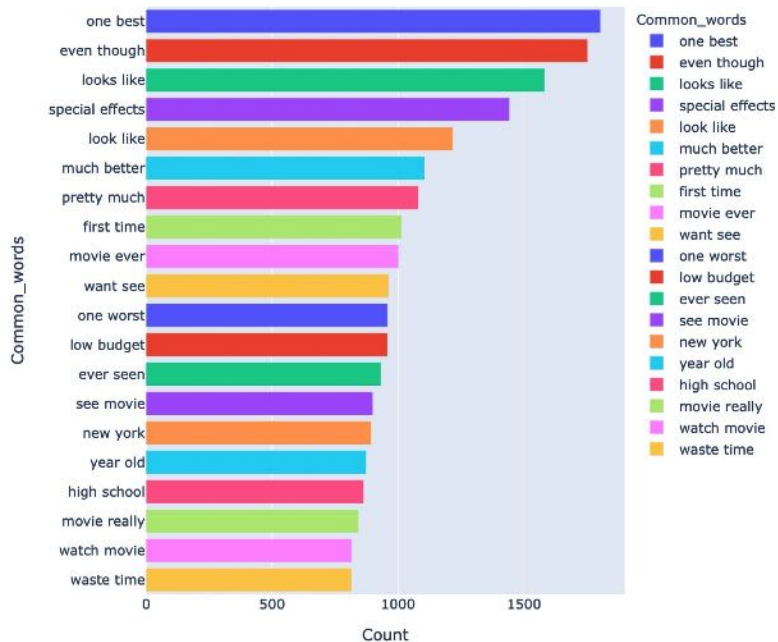


Average word length in each text

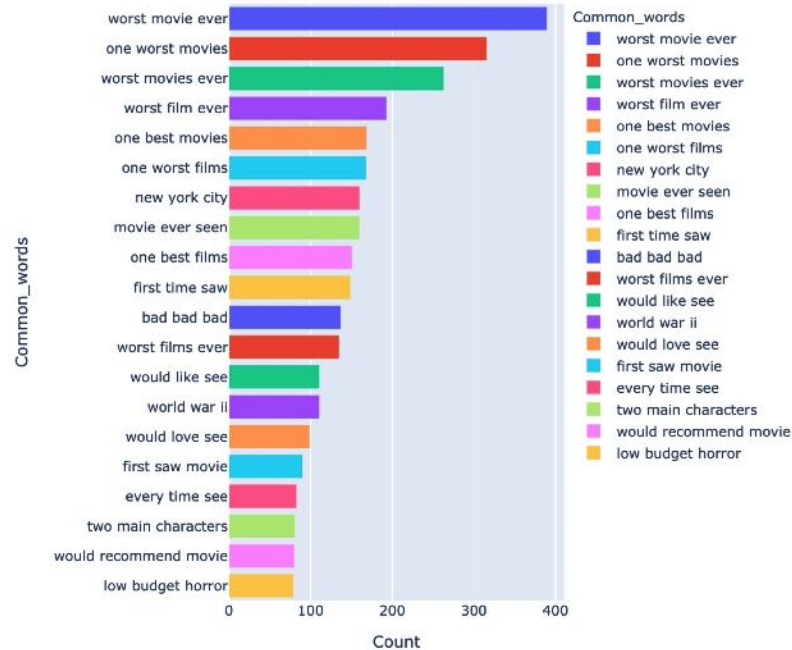


DATASET INSIGHT

Common Bigrams in Text

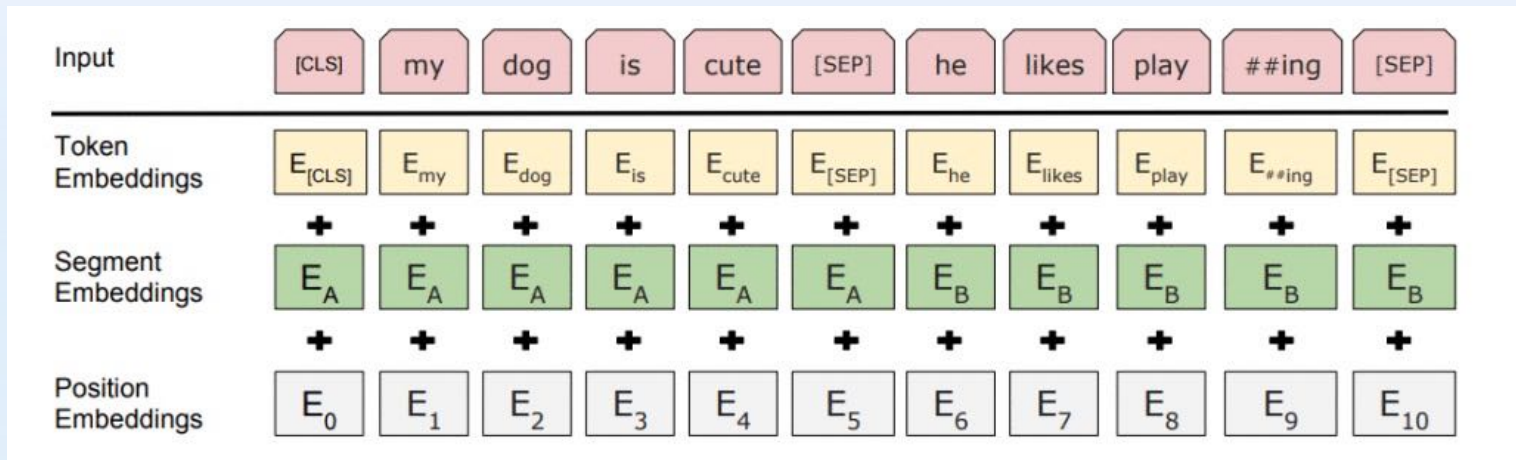


Common Trigrams in Text



BERT MODEL

1. Token embeddings: tách ký tự đầu và cuối câu
2. Segment embeddings: phân biệt từng câu 1
3. Positional embeddings: vị trí từng từ trong câu đó



Source Credits - <https://towardsml.com/2019/09/17/bert-explained-a-complete-guide-with-theory-and-tutorial/>

BERT MODEL

Transfer learning: Bert Based + 1 dense layer (Classification)

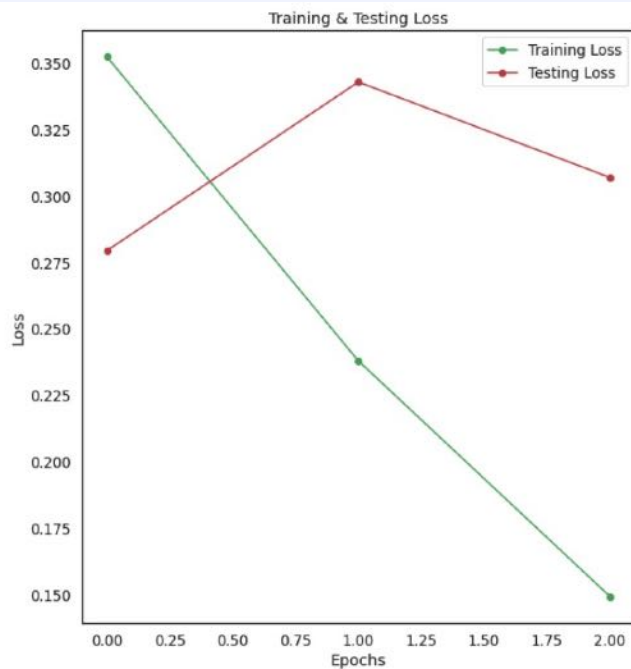
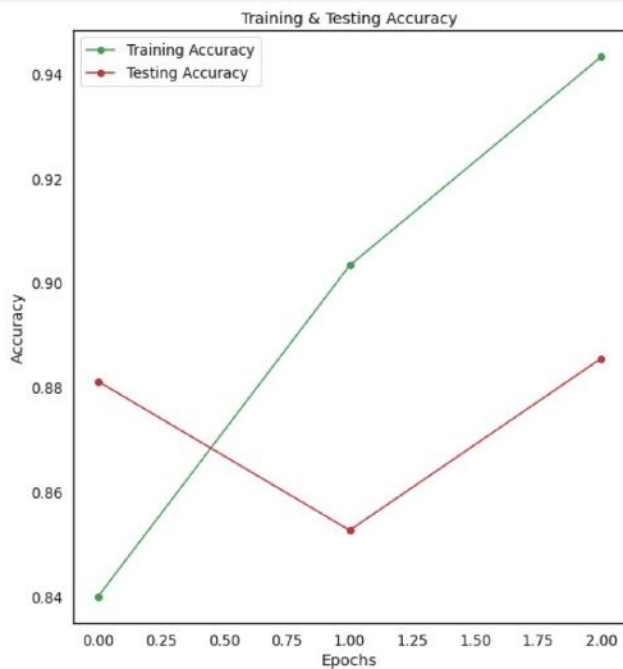
Model: "model"

Layer (type)	Output Shape	Param #
input_word_ids (InputLayer)	[(None, 400)]	0
tf_distil_bert_model (TFDist ((None, 400, 768),))		66362880
tf_op_layer_strided_slice (T [(None, 768)])		0
dense (Dense)	(None, 1)	769

Total params: 66,363,649
Trainable params: 66,363,649
Non-trainable params: 0

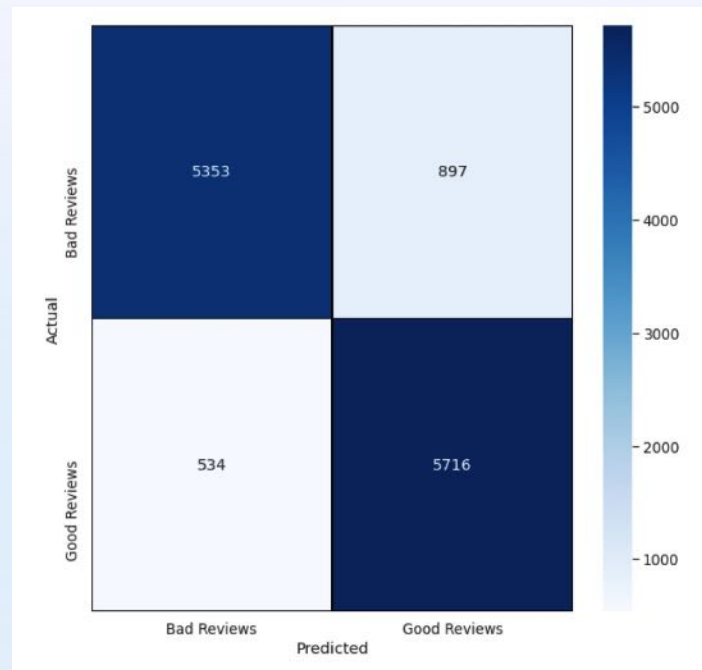
BERT MODEL

ACC reached 88%, loss < 3% , (only 3 epochs)



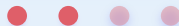
BERT MODEL

	precision	recall	f1-score	support
Bad Reviews	0.91	0.86	0.88	6250
Good Reviews	0.86	0.91	0.89	6250
accuracy			0.89	12500
macro avg	0.89	0.89	0.89	12500
weighted avg	0.89	0.89	0.89	12500





Few more things



Main App



Welcome To Sentiment Analyzer

Select Your Language: Vietnamese

Còn thờ là còn gỗ

Việt Nam vô địch Việt Nam vô địch Việt Nam vô địch Việt Nam vô địch

RECORD

STOP

SUBMIT

The Sentiment of

'Love is like iced black coffee, black is iced'

is 0.89% positive !

Yêu như cà phê

đen đá PERSON

, đen thì bị đá PERSON

Integrated Gradient

Weights to tell relatively accurately how much an independent variable affects the value of the prediction.

```
Attributions shape: (1, 20)
```

```
what doesn't kill you make you stronger, wow it's legit [PAD] [PAD] [PAD] [PAD]
```

```
Attributions shape: (1, 20)
```

```
i love you so much but i hate you! [PAD] [PAD] [PAD] [PAD] [PAD] [PAD] [PAD] [PAD] [PAD] [PAD] [PAD]
```

```
Attributions shape: (1, 20)
```

```
this movie is very suck, the actor is so pathetic and i felt sleepy [PAD] [PAD] [PAD] [PAD] [PAD]
```

```
Attributions shape: (1, 20)
```

```
i love football and hope that vietnam team will win the aff cup this year! vietnam is champion
```

```
time: 5.77 s (started: 2021-12-18 05:46:53 +00:00)
```

Other Apps

Q & A

Answer: Example...

to enable machines to learn without programming them explicitly

Introduction_to_Machine_Learning

The term machine learning means to enable machines to learn without programming them explicitly. There are four general machine learning methods: (1) supervised, (2) unsupervised, (3) semi-supervised, and (4) reinforcement learning methods. The objectives of machine learning are to enable magical

A Course in Machine Learning (cimpl-vQ_9-all)

Machine learning is magical. You give it data and it manages to classify that data. For many, it can actually outperform a human! But, like so many problems in the world, there is a significant "garbage in, garbage out" aspect to machine learning. If the data you give it is trash, the learning algorithm is unlikely to be able to overcome it.

Machine learning has proven itself to be the answer to many real-world challenges

Introduction_to_Machine_Learning

Machine learning has proven itself to be the answer to many real-world challenges, but there are still a number of problems for which machine learning breakthrough is required. The need was felt by the cofounder and ex-chairman of Microsoft, Bill Gates, and was translated into the following wordings on one occasion [6]:

[Go back to home page](#)

Other Apps

Chatbot with Lol





THANKS!

NLP FINAL PROJECT



Sat 18 Dec 2021

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