

DEEP LEARNING CASE STUDY

Title: Fake and real news detection

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Batch: DL2

Model: sequential

1. Introduction

This project is about fake and real new detection. In this project we need to give news as value of x. if the news is real it will produce array ([[1]]) and if the news is fake it will produce array ([[0]]).

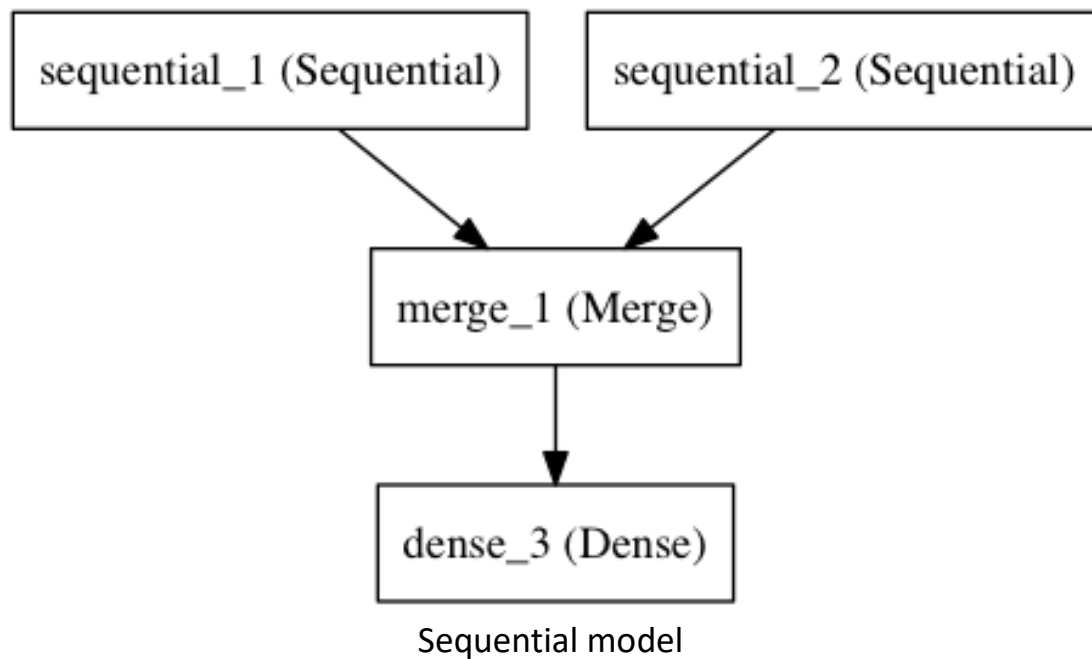
2. Tools and libraries:

NO	Tools and libraries	usages
1	Google Colab	Colab allows anybody to write and execute arbitrary python code through the browser, and is especially well suited to machine learning, data analysis and education.
2	tensorflow	It is an open source artificial intelligence library, using data flow graphs to build models. It allows developers to create large-scale neural networks with many layers.
3	wordcloud	For text visualization
4	numpy	NumPy is one of the most powerful Python libraries. It is used for array computing. It will also provide an overview of the common mathematical functions in an easy-to-follow manner.

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3. Architecture , Dataset and Workflow

I am using sequential model here. Sequential model is basically a linear composition of Keras Layers. Sequential model is easy, minimal as well as has the ability to represent nearly all available neural networks.



Dataset:

In this project I have used a '*Fake-and-real-news-dataset*' from kaggle. Which contains two files Fake.csv and Real.csv. Fake.csv contains fake news data and real.csv contains real news data.

Link: <https://github.com/ghanshyam001/fake-and-real-news-dataset>

Workflow:

- 1) Importing libraries
- 2) Exploring fake data from dataset

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- 3) Exploring real data from dataset
- 4) Cleaning of data
- 5) Preprocessing text
- 6) Text vectorization
- 7) Creation of model
- 8) Train model
- 9) Detection on real news

4. Code:

<https://github.com/ghanshyam001/fake-and-real-news-detection>

Code is uploaded on github on provided link.

5. Output:

Fake news:

```
[107] x=['this is a news']  
      x = tokenizer.texts_to_sequences(x)  
      pad_sequences(x, maxlen=maxlen)  
      x = pad_sequences(x, maxlen=maxlen)
```

```
(model.predict(x) >= 0.5).astype(int)
```

```
array([[0]])
```

Real news:

(This new is taken from online website)

```
x=['Prime Minister Narendra Modi witnesses Ganga Aarti in Varanasi. Shiv Deepotsav is being celebrated today in the city.']  
x = tokenizer.texts_to_sequences(x)  
x = pad_sequences(x, maxlen=maxlen)  
(model.predict(x) >= 0.5).astype(int)
```

```
array([[1]])
```

6. Conclusion: By implementing this project I learnt how we can use deep learning in real world problem.