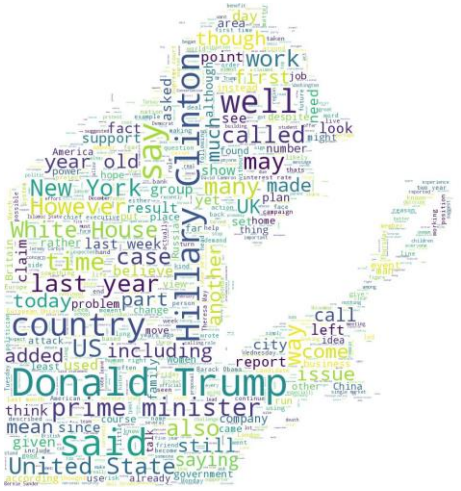
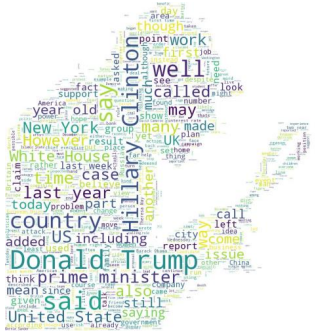
You are Fake News

Fake News Detection



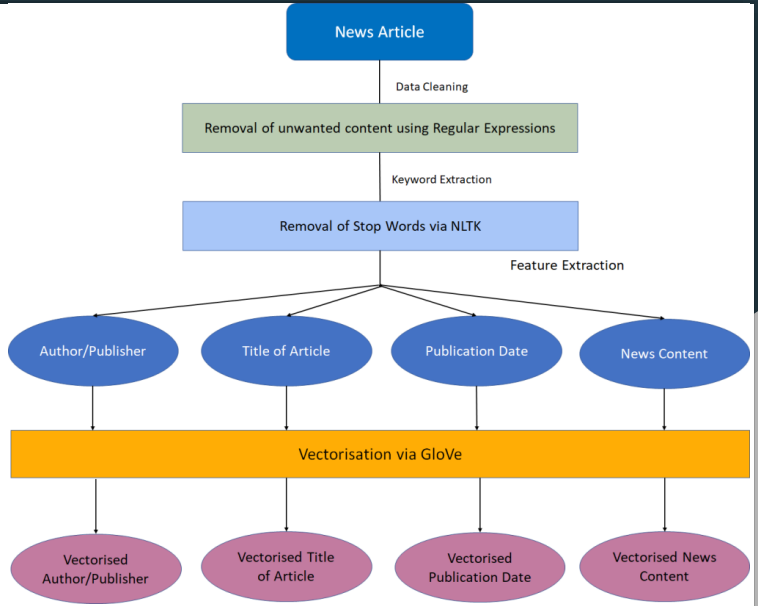
Motivation & Background

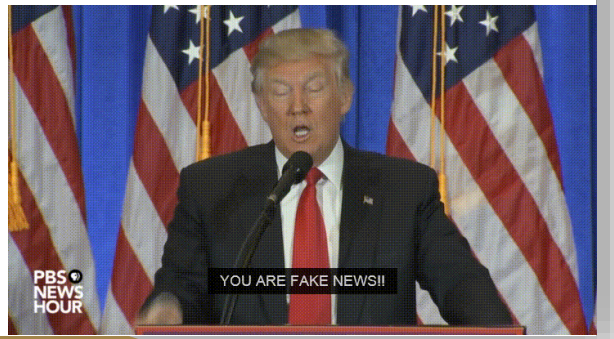
The media play a facilitating role – in the easing through of policy action by repetition and reinforcement of media messages, and the absence of proposed alternatives – and also a possible role in shaping behaviour, especially where these are linked to other types of structural support.



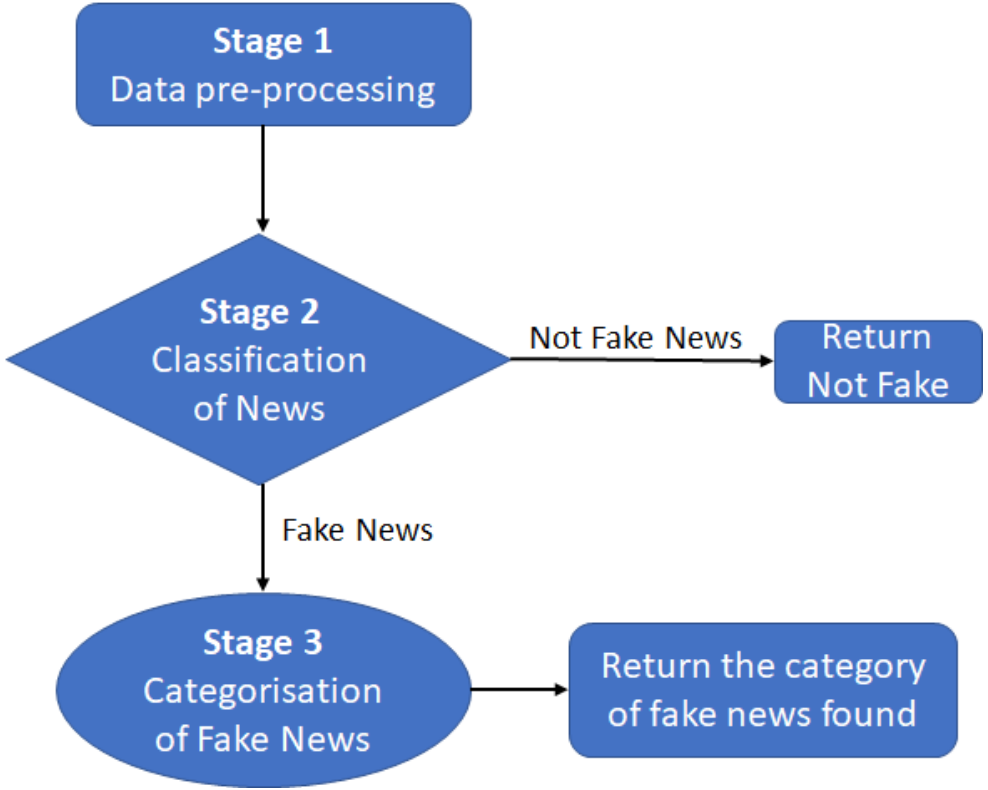
Our Solution

- **Natural Language Processing**
  - Natural Language Toolkit
  - Word Embedding (GloVe)
- **Nerual Networks**
  - Convulutional Neural Network
  - Recurrent Neural Network (Bidirectional LSTM)



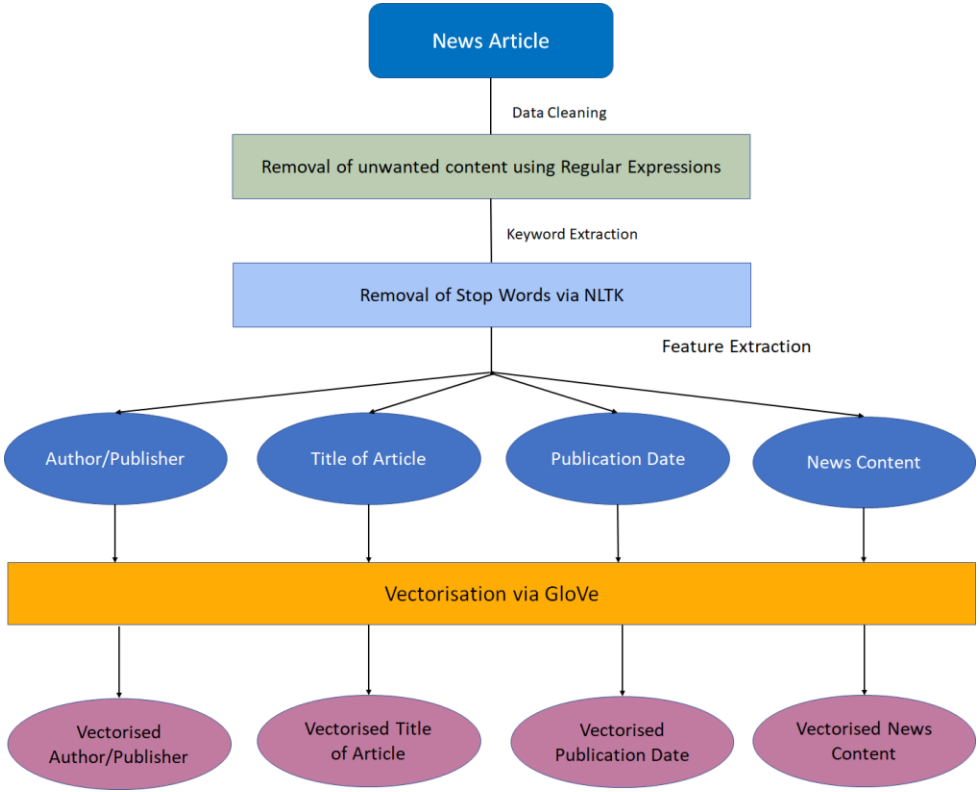


Overview of Implementation



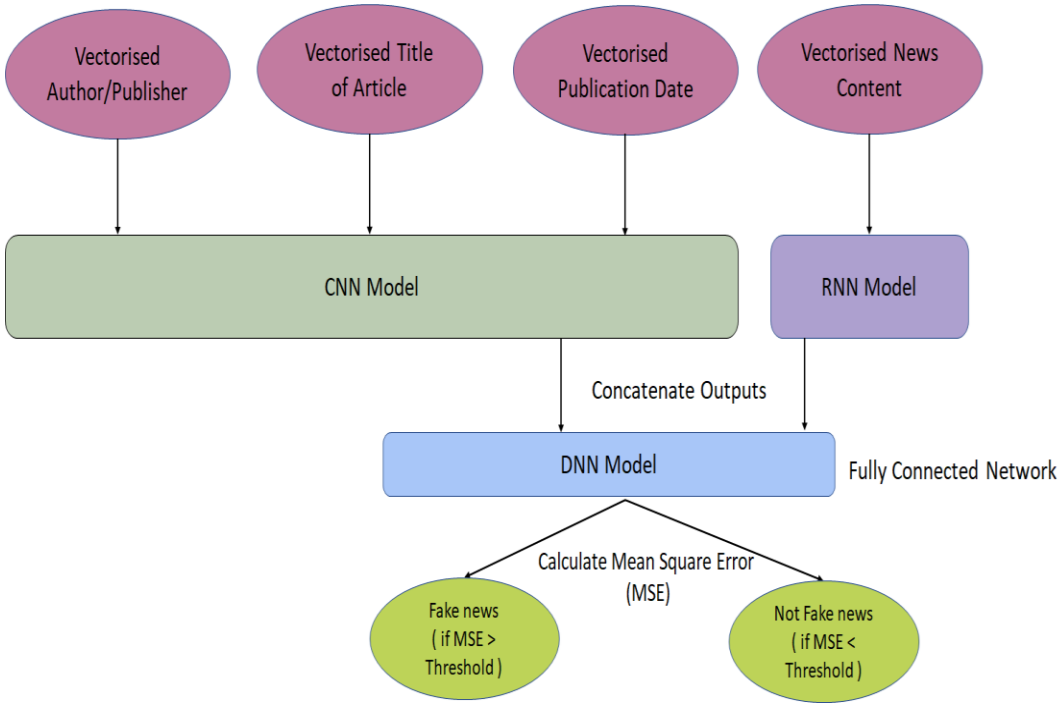
Our Implementation consists of a 3-stage process as shown in the diagram on the left.

Stage 1 -Data pre-processing



1. We clean up the data provided by the dataset by first removing unwanted content such as “ ? “, “@name” etc.
2. We then remove the stop words in the News Article to identify key points made within the article.
3. Based on the common features amongst our combined datasets, we extract the 4 features as shown in the diagram and vectorise them for further processing via Global Vectors for word representation (GloVe)

Stage 2 - Identification of Fake News

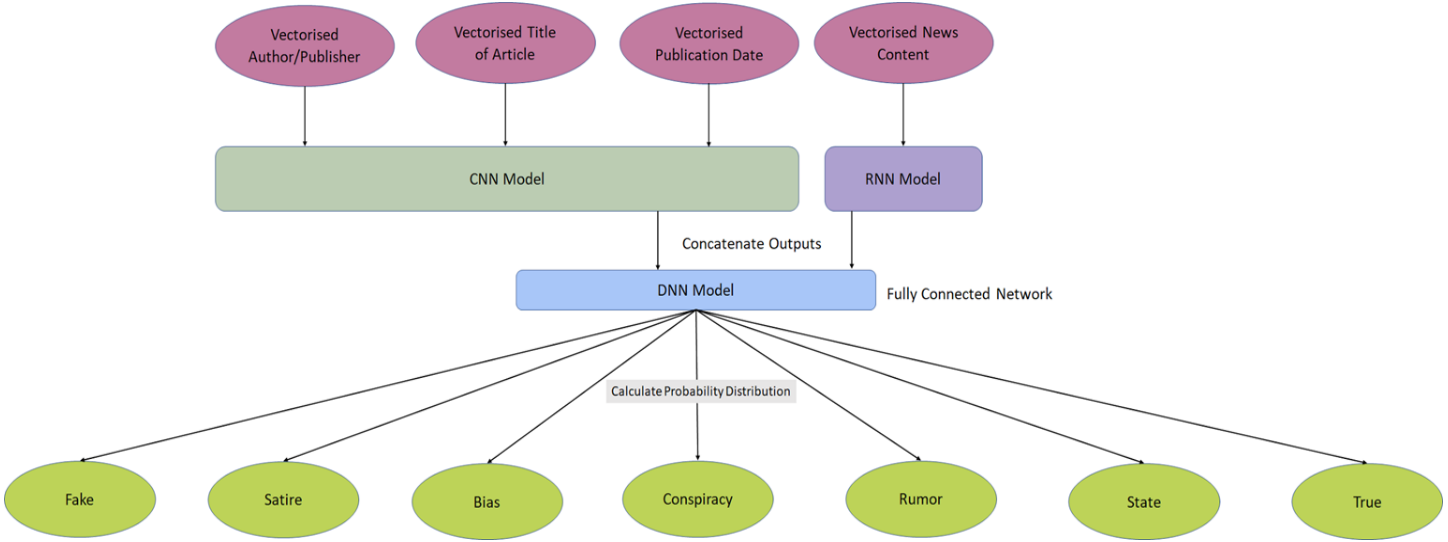


The vectorised features are then passed to either a CNN or RNN model as shown in the diagram.

News Content possesses time-series information, hence it is passed to a RNN model which preserves such information, while Author, Title and Publication Date are passed to a CNN Model.

The results of the CNN and RNN Model will then be concatenated to form a Fully Connected Network, which will output a Mean Square Error Value that will be used to determine the news classification.

Stage 3 - Categorization of Fake News



If the news article is deemed to be fake in stage 2, we then go on to identify the category of fake news that the news article belongs to.

The process is similar to Stage 2, except for the last layer in the DNN Model, where it will output a probability distribution that will be used to identify the category of fake news.