

TEXT PREDICTION MODEL USING LSTM

In this report, text prediction using deep learning models as a sequence-to-sequence architecture will be discussed. The model training, testing, and hyperparameter selection details will also be explained.

Preprocessing:

The text data from the novel is first cleaned by removing punctuation, replacing certain characters, and converting the text data to lowercase. Later, it is split into a set of 11 words and then converted to numbers so that it can be fed to the model with the help of the sliding window method. The data is then trained using suitable hyperparameters.

The model is built using sequence-to-sequence architecture, that is a Recurrent Neural Network (RNN). The first layer is an embedding layer where the total number of words in the text data is passed as the argument. It is then followed by two LSTM models having 32 and 64 units respectively. Finally, two dense layers having 64 and 128 units were added to the *LSTM* layer with *RELU* as the activation function. The model is trained using *Adam* algorithm with a default learning rate of 0.001. These combinations of hyperparameters were selected using trial and error considering the training time also. Epoch is set to 400 and a batch size of 200 is used while training the model.

In conclusion, the text prediction model can predict the next few words when text data is given as input. Here are some examples of generated text using a text prediction model:

Example :

Input: " The quick brown fox jumped off and "

Output: " was disk slept bounced as joy the precious perceived coherent "

Input: " the people are scared because "

Output: " breakers limbs black alien locality happened strictly racing might"