**Lab Assignment 3**

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**Task:**

Compare CNN, RNN and LSTM models on dataset and figure out which model best fits for the dataset

**Introduction:**

We implement the models CNN, RNN and LSTM models and predict the test accuracy of these models on given dataset. In this scenario we have taken IMDB movie review dataset where the dataset contain about the sentiment analysis of the movie wither positive or negative.

**Datasets:**

Dataset used in this task is IMDB review dataset with 50k reviews, where each review paired with binary sentiment labels. Dataset is divided into 2 sets, One as training dataset and the other is test dataset which is used for predicting the accuracy of model on train dataset.

**Approach:**

Implementing CNN method on dataset

Implementing RNN method on dataset

Implementing LSTM method on dataset

Comparing the test accuracies

**Parameters:**

Length of vector is 32

Review length is 500

words length is 5000

Adam optimizer, binary\_crossentrophy, sigmoid.

**Conclusion:**

After seeing the implementation of these 3 models on the datasets and verifying the accuracies, we can see that CNN model best fits the dataset and next comes LSTM model with better accuracy. RNN model has less test accuracy. Therefore we can say that CNN model has better performance as it first recognize components and then aggregate it whereas RNN initially translates and then aggregates which has low performance and less accuracy.