

CS772: DL4NLP Assignment Evaluation

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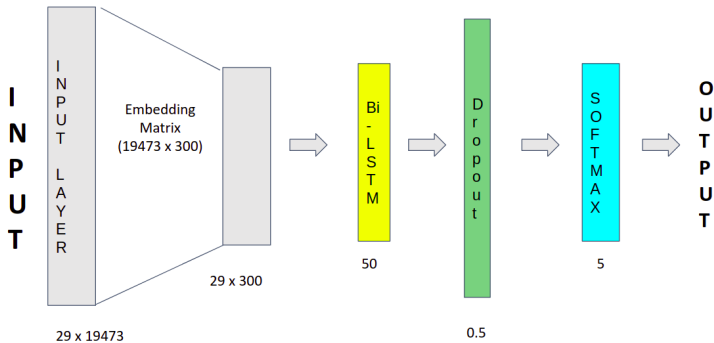
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Problem Definition

The task is of sentiment analysis in which we train the model to classify the reviews into one of the 5 classes of ratings(1 to 5). 5 being the most positive review and 1 being most negative.

Architecture



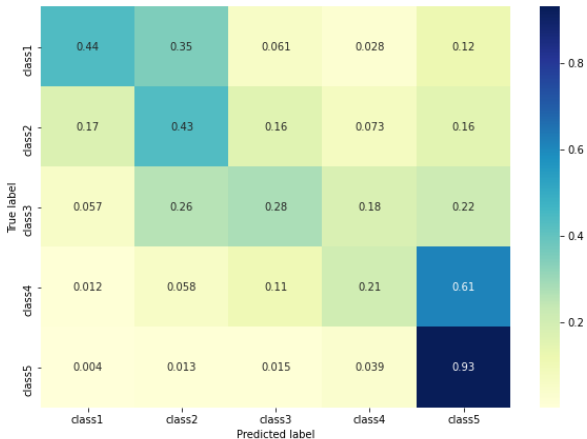
Library Functions used

- Torch.
- Keras.
- Numpy.
- Pandas.
- Gensim.
- Nltk.
- Sklearn.
- Imblearn.
- Json

Table 1:- Experiment scores

Model Type	With Pre-trained embeddings (Accuracy/Precision/ Recall/F1-Score)	Without Pre-trained embeddings (Accuracy/Precision/ Recall/F1-Score)
RNN	0.58 /0.12 /0.20 / 0.15	0.58 /0.12 /0.20 / 0.15
LSTM	0.67 /0.52 /0.47 / 0.45	0.65 /0.44 /0.43 / 0.43
Bi-LSTM	0.68 /0.51 /0.46 / 0.46	0.68 /0.49 /0.44 / 0.45
GRU	0.67 /0.50 /0.45 / 0.45	0.65 /0.47 /0.45 / 0.45
Bi-GRU	0.67 /0.52 /0.44 / 0.44	0.67 /0.49 /0.44 / 0.44

Confusion matrix for the best model



Qualitative analysis

- i had troubles getting it to stick then it eventually broke.

Given:3

Model:1

- Bought this somewhere else in is junk, not for adult ,for little girl. Not like picture,it's really small.

Given:3

Model:1

- The movie is good.

Expected:5

Model:4 (Due to sampling)

- my sister loved these earrings so much she wore them till they broke. great price. money well spent.

Given:5

Model:2 (Due to the word 'money')

Thank You