CS 613 NLP Assignment 3

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GitHub - https://github.com/ojassm/CS-613/tree/master/Assignment3

Data Cleaning:

Removed all the URLs from the tweets as they do not contribute anything to the meaning. Retained the emojis, twitter handle mentions, punctuations. Created csv of train and test tweets with the labels.

Architecture:

The following layers were used in the model:

Embedding- Keras Embedding layer of dimension 50 for each word.

GRU- Keras CuDNNGRU layer of 60 units for faster training.

Batch Normalization Layer

SoftMax Layer with 3 units.

Training parameters – 20 epochs, batch size 10, optimizer – Adam with learning rate 0.0001, loss-sparse categorical cross entropy.

Results:

Test accuracy – 51.31 %

	Precision	Recall	F1-score
Negative	0.53	0.53	0.53
Neutral	0.47	0.52	0.50
Positive	0.56	0.49	0.52

References-

https://keras.io/layers/embeddings/

https://scikit-learn.org/stable/modules/generated/sklearn.utils.class_weight.compute_class_weight.html

https://scikit-learn.org/stable/modules/generated/sklearn.preprocessing.LabelEncoder.html

https://stackoverflow.com/questions/52450648/keras-lstm-training-accuracy-stuck-at-low-levels-for-nlp-task