

Deep Learning Coding Assignment 2

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Links to Models:

1. English (fine grained) -
https://drive.google.com/file/d/1-jZoyAGcTUbzFtLa9JjnHSYXTI1T8zA7/view?usp=share_link
2. English (coarse grained) -
https://drive.google.com/file/d/1-uHwRdB9YdlBdr_6RRXYUzqG3_T1kAlc/view?usp=share_link
3. Hindi (fine grained) -
https://drive.google.com/file/d/1-wfialpXjCsvcrJo0tdZUj9vG17jdOPo/view?usp=share_link
4. Hindi (coarse grained) -
https://drive.google.com/file/d/103Szldtgz8tyULr3aVBX4amfm1NcNpTZ/view?usp=share_link
5. Bangla (fine grained) -
https://drive.google.com/file/d/104739dcuGGi-P0aLHSgvz0mnZtoZWAKI/view?usp=share_link
6. Bangla (coarse grained) -
https://drive.google.com/file/d/104FuB--GjuzbgUba7XE-csp-x1w3MLGQ/view?usp=share_link

Link to the entire directory (in case it is needed) -

https://drive.google.com/file/d/104FuB--GjuzbgUba7XE-csp-x1w3MLGQ/view?usp=share_link

Hyperparameters used:

1. Sequence length (SEQ_LEN) = 25
2. Embedding dimension (EMBEDDING_DIM) = 600
3. Hidden dimension (HIDDEN_DIM) = 800
4. Number of epochs (NUM_EPOCHS) = 10
5. Number of stacked LSTM layers (NUM_LAYERS) = 1
6. Patience (PATIENCE) = 3

Models' Performance:

Model Language	Granularity	Precision		Recall		F1-Score	
		Weighted Avg.	Macro Avg.	Weighted Avg.	Macro Avg.	Weighted Avg.	Macro Avg.
English	Fine	0.91	0.53	0.92	0.35	0.91	0.41
	Coarse	0.93	0.73	0.94	0.64	0.93	0.68
Hindi	Fine	0.95	0.77	0.96	0.64	0.95	0.68
	Coarse	0.96	0.86	0.97	0.78	0.96	0.82
Bangla	Fine	0.95	0.72	0.96	0.64	0.95	0.67
	Coarse	0.97	0.86	0.97	0.78	0.97	0.82

Directions of Usage:

1. The notebook loads the dataset from google drive, so access must be granted.
2. Create a directory : /My Drive/Colab Notebooks/multiconer2023
3. Place the following items in it :
 - a. EN-English (a directory with all English files: en_train.conll, en_dev.conll, en_test.conll)
 - b. HI-Hindi (a directory with all Hindi files: hi_train.conll, hi_dev.conll, hi_test.conll)
 - c. BN-Bangla (a directory with all Bangla files: bn_train.conll, bn_dev.conll, bn_test.conll)
 - d. en_fine.pt (fine english model)
 - e. en_coarse.pt (coarse english model)
 - f. hi_fine.pt (fine hindi model)
 - g. hi_coarse.pt (coarse hindi model)
 - h. bn_fine.pt (fine bangla model)
 - i. bn_coarse.pt (coarse bangla model)
4. To directly use the trained models, do not run the code under section "3. Model Training (using train and dev set)", since that will retrain and overwrite the stored models. However, if you do wish to retrain the models, then simply run all.