

CSC2/447: Homework 2

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All solutions and work are my own. I consulted with no one.

[Q1.1] The statistics of the dataset, including

1. The number of samples in the dataset.
Number of training samples: 12543
Number of validation samples: 2002
Number of testing samples: 2077
2. The ratios of different tags.
10 most common:
(‘NOUN’, 34781)
(‘PUNCT’, 23679)
(‘VERB’, 23081)
(‘PRON’, 18577)
(‘ADP’, 17638)
(‘ADP’, 17638)
(‘DET’, 16285)
(‘PROP’, 12946)
(‘ADJ’, 12477)
(‘AUX’, 12343)
(‘ADV’, 10548)

You can also use figures to present the results.

[Q1.2] The training dynamics of your BiLSTM, including

1. the hyper-parameter setting.
SEE FIGURES ON FOLLOWING PAGE
2. the training and evaluating loss curves
SEE FIGURES ON FOLLOWING PAGE

You can also use figures to present the results, such as Fig. 2

[Q1.3] The ablation study on the pre-trained embedding.

You can report the model accuracy with or without applying the pre-trained embedding.

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| Epoch: 01 | Train Loss: 1.392 | Train Acc: 60.84% |
| | Val. Loss: 0.729 | Val. Acc: 82.18% |
| Epoch: 02 | Train Loss: 0.376 | Train Acc: 88.94% |
| | Val. Loss: 0.512 | Val. Acc: 85.75% |
| Epoch: 03 | Train Loss: 0.258 | Train Acc: 91.82% |
| | Val. Loss: 0.465 | Val. Acc: 86.28% |
| Epoch: 04 | Train Loss: 0.214 | Train Acc: 92.98% |
| | Val. Loss: 0.449 | Val. Acc: 86.58% |
| Epoch: 05 | Train Loss: 0.188 | Train Acc: 93.69% |
| | Val. Loss: 0.442 | Val. Acc: 86.82% |
| Epoch: 06 | Train Loss: 0.167 | Train Acc: 94.38% |
| | Val. Loss: 0.448 | Val. Acc: 86.59% |
| Epoch: 07 | Train Loss: 0.148 | Train Acc: 95.09% |
| | Val. Loss: 0.459 | Val. Acc: 86.14% |
| Epoch: 08 | Train Loss: 0.133 | Train Acc: 95.61% |
| | Val. Loss: 0.460 | Val. Acc: 86.15% |
| Epoch: 09 | Train Loss: 0.118 | Train Acc: 96.13% |
| | Val. Loss: 0.478 | Val. Acc: 86.04% |
| Epoch: 10 | Train Loss: 0.105 | Train Acc: 96.59% |
| | Val. Loss: 0.487 | Val. Acc: 86.39% |

Figure 1: The test error with ranging the training epochs.

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| Test Loss: 0.433 | Test Acc: 86.98% |
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Figure 2: The test loss and test accuracy.