

## HW 4

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### Task 1: Simple BiLSTM

#### 1. Precision, Recall and F1 Score?

```
Last login: Fri Nov 12 15:52:14 on ttys000
[shubh1@Shubhams-MBP ~ % cd Desktop
[shubh1@Shubhams-MBP Desktop % cd task1
[shubh1@Shubhams-MBP task1 % perl conll03eval.txt < dev1.out
Can't open perl script "conll03eval.txt": No such file or directory
[shubh1@Shubhams-MBP task1 % perl conll03eval.txt < dev1.out
processed 51578 tokens with 5942 phrases; found: 5638 phrases; correct: 4804.
accuracy: 96.47%; precision: 85.21%; recall: 80.85%; FB1: 82.97
      LOC: precision: 92.84%; recall: 86.88%; FB1: 89.76 1719
      MISC: precision: 85.84%; recall: 76.25%; FB1: 80.76 819
      ORG: precision: 79.77%; recall: 72.63%; FB1: 76.03 1221
      PER: precision: 81.48%; recall: 83.12%; FB1: 82.29 1879
shubh1@Shubhams-MBP task1 %
```

#### 2. Hyperparameters?

⇒ I used Learning Rate as 0.017, Momentum = 0.9. Scheduler as StepLR with step size = 25 along with batch size of 8. I also used class weights and weight initialization. I ran it for 20 epochs.

## Task 2: GloVe word embeddings

### 1. Precision, Recall and F1 Score?

```
Last login: Fri Nov 12 16:07:34 on ttys000
shubh1@Shubhams-MBP ~ % cd Desktop
shubh1@Shubhams-MBP Desktop % cd task1
shubh1@Shubhams-MBP task1 % perl conll03eval.txt < dev2.out
processed 51578 tokens with 5942 phrases; found: 6104 phrases; correct: 5309.
accuracy: 97.75%; precision: 86.98%; recall: 89.35%; FB1: 88.15
      LOC: precision: 92.65%; recall: 94.72%; FB1: 93.67 1878
      MISC: precision: 79.45%; recall: 81.34%; FB1: 80.39 944
      ORG: precision: 79.70%; recall: 81.95%; FB1: 80.81 1379
      PER: precision: 90.38%; recall: 93.38%; FB1: 91.86 1903
shubh1@Shubhams-MBP task1 %
```

### 2. Hyperparameters?

⇒ I used Learning Rate as 0.017, Momentum = 0.9. Scheduler as StepLR with step size = 25 along with batch size of 8. I also used class weights and weight initialization. I ran it for 30 epochs.

### 3. How did you deal with capitalization of words?

⇒ I used weight and embedding matrix and passed weight matrix to torch.nn.Embedding so that it will automatically learn weights for capital letters since they won't be present in glove.