HW3 Report

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1. CRF model
   1. I added the following features to CRF model to improve f1 score
      1. Word.lower():
      2. Word.isdigit():
      3. word.isupper(): indicates whether the word is uppercase
      4. word.istitle(): indicates whether the word is title
      5. For words that are not the beginning of the sentence: I added previous word, and the same features(
      6. For words that are not the last of the sentence:
      7. For words that are at least the third word of the sentence, and are third to the last word of the sentence:
   2. How these contributed to f1 score
      1. Before adding features

Calendar

Description automatically generated

* + 1. After adding features

Calendar

Description automatically generated

1. LSTM model
2. Before (epoch 50)

* Big difference in accuracy between validation & training set (overfit)
* Train 'macro\_f1': 0.5006021600936442a
* Validation 'macro\_f1': 0.4579360721647907

1. Epoch= 30

* 0.6412072784135157

1. Epoch 40, layer 2

* 0.3172744042655346

1. Epoch 40 layer 1 hidden layer=150: 0.6501253879758931
2. 4+lr=1, 0.64~~
3. 5+epoch 60: 0.6381376755966707
4. 6+Hidden dimension 200:
5. Hidden dimension 300: 0.6474024553851004
6. Adam optimizer: 0.6522124501389466
7. 9+ layer2: 0.6796649070806908
8. Layer 2, hdim 600, epoch 60 0.64204879
9. Layer 2, hdim 600, lr=0.0001