Ass 2 – Part 3

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Model's Parameters

In both tasks:

- I used dropout, after the activation function, with probability of p=0.5.
- Optimizer: Adam
- Learning rate: 1e-3
- Size of the hidden layer: 150

POS:

- I used batches of size 32 for both training and dev sets.
- Number of epochs: 2

NER:

- I used batches of size 16 for both training and dev sets.
- Number of epochs: 3

Description of the logic of using the pre-trained vectors

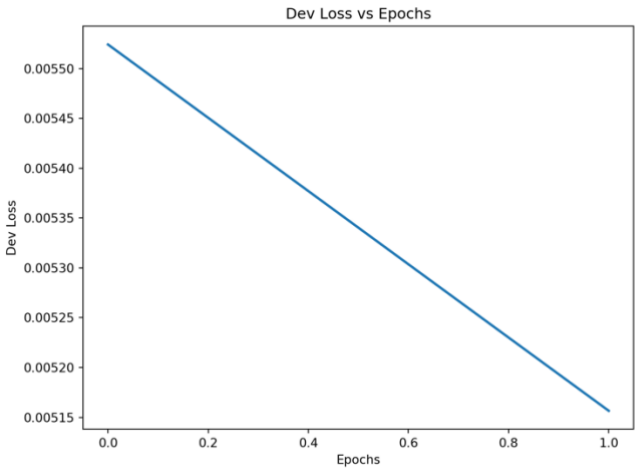
Because of the embedding vocabulary being lower-case, when I searched in it for a match to words, which belong to the training set / dev set / test set , I checked on the word in its lower-case form too. The reason for it is that the training, dev and test sets contains also words written in capital letters.

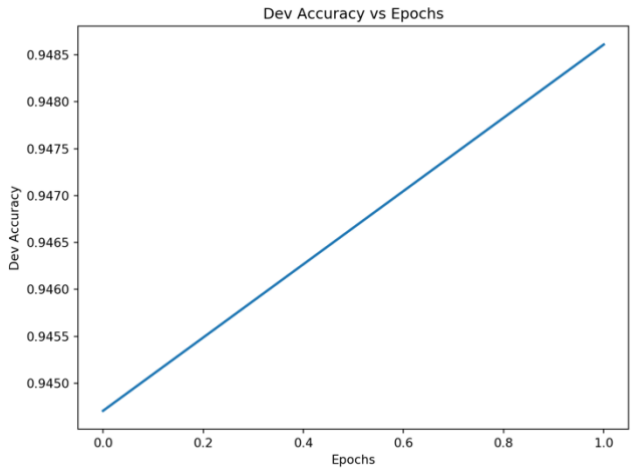
In order to deal with words that appear in the training set / dev set / test set and not in the pre-trained vocabulary, I assign to them the unknown token - 'UUUNKKK' - which belongs to the pre-trained vocabulary and following logic represents words that are not in the original vocabulary. Therefore, when creating context window to each word in the training \ dev \ test set, the words which does not appear in pre-trained vocabulary get the correspondent embedding vector to the unknown token - 'UUUNKKK'.

For words that were recognized as numbers by appropriate regex, I assigned tokens from the pre-trained vocabulary which represent numbers (following logic of course), such as ‘DGDG’, ‘DG.DGDG and ‘NNNUMMM’ (there are 53 of them in the pre-trained vocabulary, when each represents a different pattern of a number).

My model’s results:

POS: Loss - 0.00515 Accuracy – **94.861%**





NER: Loss - 0.00937 Accuracy – **77.697%**