

Intro to NLP

ASSIGNMENT-3 REPORT

Sequence to Sequence

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Language Model

The results obtained for the europarl corpus (average perplexity values for the train and test data) are displayed below:

Train perplexity (average)	69.4088
Test perplexity (average)	129.8203

We can observe that the perplexity values achieved are fairly good, and indicate good performance of the model. Thus, we can infer that LSTMs

were indeed effective in capturing the required information from different sentences.

Machine Translation

The results obtained for the given ted-talks corpus with english-french sentence pairs (corpus bleu scores for the train and test data, with and without fine-tuning) are displayed below:

	Train corpus bleu	Test corpus bleu
Without fine-tuning	0.08225	0.06525
With fine-tuning	0.09138	0.07319

We can observe that even though the corpus bleu scores are on the lower side (as translation seems to occur accurately only in the initial positions), there is a clear difference in scenarios where fine-tuning is utilized and is not used. On utilizing the language model weights which were trained previously for both the english and french corpus, the initialization was essentially effective and hence provided slightly better results.

We can observe the effectiveness of LSTMs (encoder and decoder) and other mechanisms such as teacher forcing which were used to perform machine translation.
