NLP APPLICATIONS

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GitHub Repository
https://github.com/ArushiSinghal/Neural-Machine-Translation

Dataset
https://drive.google.com/file/d/1qkRwBvir87YZLVe3yRPa69bKWRVlujwr/view?usp=sharing
25000 - Health
25000 - Tourism
Total - 50000

Problem Statement
2.2.3 Build an NMT (Neural MT) system when training data (parallel sentences in the concerned source and target language) is available in a domain. However, such domain data is of small size. Machine learning is to be used in such a way that the small sized domain data can be combined with the large amount of general data.

Guides
Manish Srivastava, Saumitra Yadav

Overview
1) method uses a multilayered Long Short-Term Memory (LSTM) to map the input sequence to a vector of a fixed dimensionality, and then another deep LSTM to decode the target sequence from the vector. (This method achieved the BLEU score of 34.8 on the paper given for English to French translation task from the WMT-14 dataset and the the LSTM's BLEU score was penalized on out-of-vocabulary words. Also LSTM did not have difficulty on long sentences.) So First approach is to do Sequence to Sequence Learning with Neural Networks RNN-Language Model (RNNLM) or a Feedforward Neural Network Language Model (NNLM) to an MT task is by rescoring the n-best lists of a strong MT baseline, which reliably improves translation quality. (https://papers.nips.cc/paper/5346-sequence-to-sequence-learning-with-neural-networks.pdf)

2) we conjecture that the use of a fixed-length vector is a bottleneck in improving the performance of this basic encoder–decoder architecture, and propose to extend this by allowing a model to automatically (soft-)search for parts of a source sentence that are relevant to predicting a target word, without having to form these parts as a hard segment explicitly. (https://arxiv.org/pdf/1409.0473.pdf)

References

1) https://arxiv.org/pdf/1409.0473.pdf
2) https://pytorch.org/tutorials/intermediate/seq2seq_translation_tutorial.html
3) https://machinelearningmastery.com/develop-neural-machine-translation-system-keras/
4) https://papers.nips.cc/paper/5346-sequence-to-sequence-learning-with-neural-networks.pdf