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Assignment 2 for NLP course of UCAS

I use 1.forward neural network language model,2.RNN-LSTM language model and 3.attention language model to calculate the perplexity of each model on the dataset of [https://data.statmt.org/news-crawl/zh/](https://data.statmt.org/news-crawl/zh/.~.) that choose the news/2018/~ with the size of 37M.

How to conduct my code:

In the file,“my\_nn\_rnn”,contain the neural network model and the rnn-lstm model.you can modify the config file to change the file path to yours and adjust other parameter.

In the file,”my\_atten”,contain the attention model which thanks for keya-desai to provide the raw code.you can find the original code at

[https://github.com/keya-desai/Natural-Language-Processing](https://github.com/keya-desai/Natural-Language-Processing.i)

I take advantage of the attention model to calculate the perplexity.

Some details:

In the neural network model, I transport the raw\_data to clean data,which remove the other character expect Chinese character. And I focus on each character and form a dictionary,which connect each character to a index.And form the training target by using the later adjacent character.then form the simple neural network to calculate the loss--crossentropyloss,and then calculate perplexity.

In the rnn-lstm model , I use the same data process procedure in the neural network. And

Establish the rnn-lstm model to train the language model. Finally ,get the perplexity.

In the attention model, which focus on the word not the character, form the word dictionary and then train the attention model.

The result:

In the every file ,there are the result file which record the train process and the perplexity.