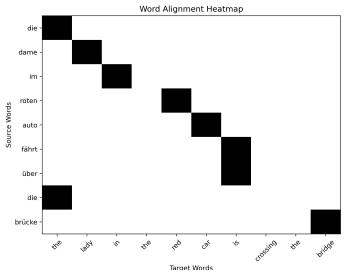
CS288 Natural Language Processing:

Homework2 Report

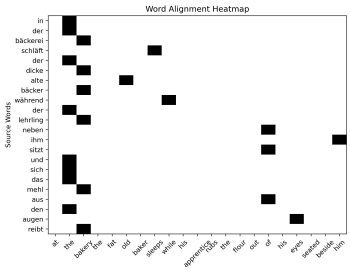
Name: Diyun Lu SID: 3039752224

1 Part a: IBM Model

For the IBM alignment model results, I looked for the words with best and worst alignment probabilities first. Then from the short sentences including better matched words to find good alignments and from the long sentences including the worse matched words to find bad alignments.



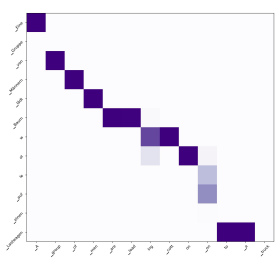
(a) Good Result

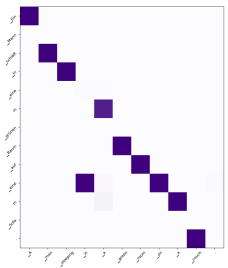


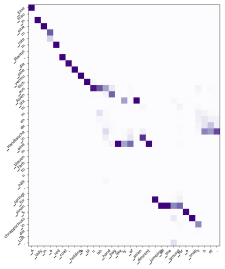
(b) Bad Result

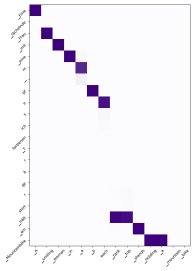
2 Part b: Neural Machine Translation

Most of the alignments match the intuition. However, when the sentence becomes longer like the third picture, there are many-to-one alignments. Articles are often misaligned with many words and the reason may be the flexible position of the articles.









3 Conclusion

When I walk through the alignments of IBM model in part a, I previously thought the sentences with more articles will have a better result. I can often see sentences like: " a woman in a red car..." that articles kind of help divide the sentences to make a better translation. However, in part b, it seems that the attention weights of articles like 'die', 'einen' in German need more information than other words.