Baseline-system:

Using the baseline-system for the word alignments and for the dataset of 100,000 English-French sentence pairs shows, that the system does not perform well. The error rate is 0.681684 and the values for precision (= 0.243110) and recall (= 0.544379) are neither high nor close to each other, which indicates that the system does not compute the right probabilities, e.g. results for the word alignments.

In order to improve the error rate and precision-recall we are now going to use IBM Model 1.

IBM Model 1:

Implementing an aligner based IBM Model 1 decreases the error rate to 0.385269 and increases precision (= 0.540915) and recall (= 0.772189). It can be concluded that the implementation of IBM Model 1 has been successful and has led to an optimization of the word alignments.

Fast-align model:

Finally, comparing my IBM Model 1 to the implementation of Model 1 in the off-the-shelf aligner, the off the shelf model shows a better performance based on precision and recall.

FORWARD ALIGNMENT RESULT:

Precision = 0.788122

Recall = 0.831361

AER = 0.196670

REVERSE ALIGNMENT:

Precision = 0.768293

Recall = 0.843195

AER = 0.206237