

Estimating Phrase Translation Probs

The most important feature: phrase-to-phrase translation:

$$h_{\text{Phr}}(f_1^J, e_1^I, s_1^K) = \log \prod_{k=1}^K p(\tilde{f}_k | \tilde{e}_k) \quad (5)$$

The conditional probability of phrase \tilde{f}_k given phrase \tilde{e}_k is estimated from relative frequencies:

$$p(\tilde{f}_k | \tilde{e}_k) = \frac{\text{count}(\tilde{f}, \tilde{e})}{\text{count}(\tilde{e})} \quad (6)$$

- $\text{count}(\tilde{f}, \tilde{e})$ is the number of co-occurrences of a phrase pair (\tilde{f}, \tilde{e}) that are consistent with the word alignment
- $\text{count}(\tilde{e})$ is the number of occurrences of the target phrase \tilde{e} in the training corpus.
- h_{Phr} usually used twice, in both directions: $p(\tilde{f}_k | \tilde{e}_k)$ and $p(\tilde{e}_k | \tilde{f}_k)$