Introduction to machine translation [Solution by Karthikeyan.S]

LATEST SUBMISSION GRADE

100%

1.Question 1
Find correct statements below.

☑ Neural Machine Translation is able to produce translations for language pairs that have never been observed in train.

Correct

☐ "Interlingual" level of transfer provides the best accuracy in statistical machine translation systems.

☐ Machine Translation area was developing with gradual advances each year.

☑ Evaluation in Machine Translation is hard, mostly because of many variations in translations.

Correct

☐ Recent machine translation systems provide equally good quality for all language pairs.

1 / 1 point

2.Question 2
Compute BLEU score for the following example with 2 digits after decimal point:

System output: *A friend when needed is a friend indeed.*

Reference: *A friend in need is a friend indeed.*

0.41
Correct
1 / 1 point

3.Question 3
Let us say we are building a translation system from Greek (g) to Bulgarian (b). Which of the following statements are correct?

☑ We will need to build language model $\mathrm{p(b)}p(b)$.

Correct

Language model here is complicated because different word alignments are possible.

We will need to build a translation model $p(b|g)$.

The noisy channel concept here corresponds to conditional distribution $p(g|b)$.

Correct

1 / 1 point

4.Question 4

Which parametrization for word alignment model would you use, if you know that sentences for your language pair often have aligned sequential chunks?

Notation: *(e, f)* - sentence pair, *(I, J)* - their lengths respectively, *a* - alignment.

Option 3: p(f, a|e) = p(J|e) \prod_{j=1}^J p(a_j|a_{j-1}, I, J) p(f_j | a_j, e)$p(f,a|e) = p(J|e) \prod_{j=1}^{J} p(a_j|a_{j-1}, I, J) p(f_j|a_j, e)$

Option 1: p(f, a|e) = p(J|e)\prod_{j=1}^J p(a_j) p(f_j | a_j, e)$p(f,a|e) = p(J|e) \prod_{j=1}^{J} p(a_j) p(f_j|a_j, e)$

Option 2: p(f, a|e) = p(J|e) \prod_{j=1}^J p(a_j|j, I, J) p(f_j | a_j, e)$p(f,a|e) = p(J|e) \prod_{j=1}^{J} p(a_j|j, I, J) p(f_j|a_j, e)$

Correct