

# Introduction to machine translation

1. Find correct statements below.

1 / 1 point

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

✓ Correct

- ☐ Recent machine translation systems provide equally good quality for all language pairs.
- ☐ "Interlingual" level of transfer provides the best accuracy in statistical machine translation systems.
- ☒ Evaluation in Machine Translation is hard, mostly because of many variations in translations.

✓ Correct

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

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

1 / 1 point

- ☐ Language model here is complicated because different word alignments are possible.
- ☐ We will need to build a translation model  $p(b|g)$ .
- ☒ We will need to build language model  $p(b)$ .

✓ Correct

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

✓ Correct

4. Which parametrization for word alignment model would you use, if you know that the source and the target languages are extremely different and have quite irregular word order?

1 / 1 point

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

- ☒ Option 1:  $p(f, a|e) = p(J|e) \prod_{j=1}^J p(a_j)p(f_j|a_j, e)$
- ☐ Option 2:  $p(f, a|e) = p(J|e) \prod_{j=1}^J p(a_j|j, I, J)p(f_j|a_j, e)$
- ☐ Option 3:  $p(f, a|e) = p(J|e) \prod_{j=1}^J p(a_j|a_{j-1}, I, J)p(f_j|a_j, e)$

✓ Correct