

11-731 Machine Translation: Homework Assignment (1)

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Instruction:

This homework assignment is due on **Feb 19 (Monday)**. Work alone.

1. Mismatches

1. **Lexical Mismatches:** When we build an MT system, we face problems with lexical differences between languages. The differences are in the ways in which languages seem to classify the world, what concepts they choose to express using single words, and which they choose not to lexicalize. Some examples are illustrated on page 101, Chapter 6 Problems of transfer and interlingua, Section 6.1., in the reading packet.

- a. Come up with at least one example of a lexical mismatch between a pair of languages that you know,
- b. Explain why and how the mismatch could be a challenge for an MT system, and
- c. Propose a solution to the problem, with respect to a particular MT approach.
- d. If your solution is not Interlingua approach, design an Interlingua to represent your examples.

2. **Structural Mismatches:** One kind of structural mismatch occurs where two languages use the same (or similar) construction for different purposes, or use different constructions for what appears to be the same purpose. Some examples are illustrated pages 103 - 106, Section 6.2., in the reading packet.

- a. Come up with at least one example of a structural mismatch between a pair of languages that you know,
- b. Explain why and how the mismatch could be a challenge for an MT system, and
- c. Propose a solution to the problem, with respect to a particular MT approach.
- d. If your solution is not Interlingua approach, design an Interlingua to represent your examples.

2. How to submit the homework

1. Write 2-3 pages and send by email by Feb 19.
2. Also, send .ppt slides, which contain examples for lexical and structural mismatches, to teruko@cs.cmu.edu. We will discuss your examples in the Linguistic Knowledge Development lecture.

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