

# Computational approaches to figurative language

## Lecture syllabus

Ekaterina Shutova  
Computer Laboratory  
University of Cambridge

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### 1 Course objective

This lecture will provide an overview of the field of natural language language processing (NLP) with the focus on how the existing NLP technologies can be used to tackle high-level semantic tasks, such as automatic understanding of figurative language. By the end of the course the students will learn how language modeling in general works, as well as become familiar with the state-of-the-art computational models of metaphor, irony and humor.

### 2 Learning points

1. What NLP is and what technologies exist;
2. Why high-level semantic tasks are difficult for NLP;
3. Computational models of metaphor;
4. Computational models of irony;
5. Computational models of humor.

### 3 Lecture structure

1. Could a computer possibly understand language? Read poetry? Make jokes? (discussion of an example)
2. What is NLP and why is it important? Examples of NLP applications (e.g. Google search)
3. What kinds of NLP technologies exist (example of a parsed sentence). If we wanted a robot to communicate with us in a natural language, he would need to use the following components:

- automatic speech recognition (ASR)
  - linguistic processing of text (e.g. part-of-speech tagging, parsing etc.)
  - information extraction (IE), information retrieval (IR)
  - reasoning module
  - text generation
  - text-to-speech (TTS)
4. High-level semantic tasks such as figurative language (metaphor, metonymy, irony, humor). Why are they difficult?
  5. Computational models of metaphor
  6. Computational models of irony
  7. Computational models of humor