Goals of the Course

1. make you able to read the newest MT papers

2. give you some intuition on how to models behave
What we expect you to know

- basic of deep learning
  - know basic neural architectures
  - training by backpropagation

- be familiar with machine translation
  - what data we use and do we get them
  - MT evaluation
  - what are the main problems of MT and why they are difficult

Enrolling **NPFL087 Statistical Machine Translation** and **NPFL114 Deep Learning** is recommended.
First part: Lectures

1. Discussion on a reading assignment (20 minutes)
2. Lecture (70 minutes)

Preliminary Syllabus

- introductory notes on deep learning and machine translation
- neural architectures for NLP
- sequence-to-sequence learning with attention mechanism using RNNs
- sequence-to-sequence learning using self-attention networks
- dealing with limited vocabulary (character-based methods, sub-word units)
- algorithmic tricks to improve model performance (beam search, ensembling)
Second part: Paper presentation

- every student will present one paper to the others
- every paper will have an opponent who will read the paper and prepare questions to start up the discussion

Two papers per class.
1. Sequence-to-sequence learning using self-attentive networks (so called Transformer)
2. Adversarial Networks for NMT
3. Unsupervised neural machine translation
4. Overview of neural architectures for natural language processing
5. Non-autoregressive neural machine translation
To pass the course, you need to:

- read the papers assigned for the seminar and submit an answer to a question for each paper before the seminar (via a Google Form),
- present a paper to the fellow students.
- be an opponent to a paper
- write a test at the end of the semester

The seminar is an **optional** course, awarded by **3 credits**.
The course materials & current reading question will be available on course webpage:

ufal.cz/courses/nlfl116/summer2018

If you have questions, drop us a line:
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