Course Logistics

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Goals of the Course

1. Make you able to read the newest MT papers

2. Give you some intution on how the models behave

What We Expect You to Know

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

- Be familiar with machine translation
  - data we use and how do we get them
  - MT evaluation
  - 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)

The topics may change based on your interests.

Second Part: Paper Presentations

Every student will:

- Present a paper (or a group of papers) to the others
- Prepare interesting questions to kick-off the discussion

Papers will cover recent research topics including: *unsupervised translation, interpretability, alternative decoding schemes (non-autoregressive NMT, Levenshtein Transformers).*

Formal Requirements

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 your fellow students,
- write a test at the end of the semester.

The seminar is an **optional** course, awarded by **3 credits**.

- The course materials & reading questions will be available on the course webpage.
- If you have questions, drop us a line:
  - Jindřich Helcl (`helcl --at-- ufal.mff.cuni.cz`)
  - Jindřich Libovický (`libovicky --at-- ufal.mff.cuni.cz`)

`http://ufal.mff.cuni.cz/courses/npfl116`