

# Course Logistics

Jindřich Helcl, Jindřich Libovický

February 26, 2022



EUROPEAN UNION  
European Structural and Investment Fund  
Operational Programme Research,  
Development and Education

Charles University  
Faculty of Mathematics and Physics  
Institute of Formal and Applied Linguistics



unless otherwise stated

- 1.** Make you able to read the newest MT papers
- 2.** Give you some intuition 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.

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**.

#### Course Logistics

- 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>