Deep Learning for Biology
Course logistics

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Prerequisites

- Classical Machine Learning
- Python3
- NumPy

Topics

- AI overview
- Intro into NN, Feed-forward NNs (FNN) and Autoencoders (AE)
  - Theory & Keras practice
- Convolutional NNs (CNN) and Image processing
  - Theory & Keras practice
  - Real-life modern CNNs
- Transfer learning
- Advanced CNNs
- Embeddings and Text processing
- Recurrent NNs (RNN, LSTM), Sequence Learning
  - Theory & Keras Examples
- Advanced topics
  - Multi-task learning
  - Complex models (CNN+RNN, etc)
  - Transformer, Attention etc.

Course logistics

2 modules:

- Sept 10 - Oct 15, room R408
- Oct 29 - Dec 17, room R408

Lectures on Tuesdays, 18:10-19:30, 19:40-21:00

Format:

- Lectures (theory)
- Interactive lectures (practice with Keras, bring your notebooks)
- Journal club (later in the course)
- (maybe) Practice assignments / Homeworks
- (maybe) Guest lectures

Evaluation

- Presentation at Journal club
- (maybe) Practice assignments / Homeworks