

# Deep Learning in NLP: Project Inspirations

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Wintersemester 2018/2019

# Deep Learning tasks for NLP: Neural Architectures

Basic architecture types:

- ★ Recurrent neural networks.
- ★ Recursive neural networks.
- ★ Convolutional and pooling.

# Recurrent Neural Networks

- ★ Language modeling
- ★ Sequence tagging (e.g. POS-tagging, chunking, supertagging etc.) (Xu et al., 2015)
- ★ Machine translation
- ★ Dependency parsing (Dyer et al., 2015)
- ★ Noisy text normalisation (e.g. normalizing tweets) (Chrupała, 2014)
- ★ Dialog state tracking (Mrkšić et al., 2015)
- ★ Response generation

# Recursive Neural Networks

- ★ Discourse parsing (Li et al., 2014)
- ★ Semantic relation classification
- ★ Sentiment classification (Dong et al., 2014)
- ★ Question answering
- ★ Ideology detection based on parse trees (Iyyer et al., 2014)

# Convolutional and Pooling Architectures

- ★ Document classification
- ★ Short-text categorization (Wang et al., 2015)
- ★ Sentiment classification
- ★ Classification of relations between entities (Zeng et al., 2014)
- ★ Event detection (Gan et al., 2015)
- ★ Paraphrase identification (Yin and Schütze, 2015)
- ★ Semantic role labeling (Collobert et al., 2011)
- ★ Modeling text interestingness (Gao et al., 2014)

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