Università degli Studi di Milano

Natural Language Processing

Lecture Plan

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AY 2024-25

Introduction to Natural Language Processing $\sim$ 6h

- Vector Space
- Text tokenization and normalization
- TfIdf

Language models $\sim$ 3h

Introduction to neural networks $\sim$ 3h

Neural networks as language models $\sim$ 3h

Text encoding and sequence learning $\sim$ 6h

- Word2Vec and word embedding
- Recurrent neural networks and long short-term memory networks

Transformers $\sim$ 9h

- Transformers architecture
- BERT
- GPT

NLP applications $\sim$ 3h

Text2Image ∼ 6h

Proprietary models and prompt engineering ∼ 3h

Explainable AI, bias and ethics ∼ 6h