Natural Language Processing

Natural Language Processing

Introduction

- Field of AI with focus on computers to understand, interpret, and generate human language
- Involves algorithms, usually Deep Learning, to analyze and manipulate text and speech
- Can extract meaningful insights from large amounts of unstructured text data, like social media posts, customer reviews
- Wide range of applications
  - Chatbots
  - Sentiment analysis
  - Translation
  - Speech recognition

Natural Language Processing

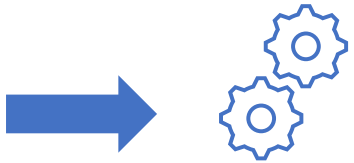
NLP Model Tasks

Input Text

Neural Network

Prediction

„I like this book so much I cannot “



„put it down“ — next words

+5.0 — sentiment

„a positive book review“ — Text summarization

„Ich mag dieses Buch so sehr, dass ich es nicht aus der Hand legen Kann.“ — Translation

Natural Language Processing

NLP Model Tasks

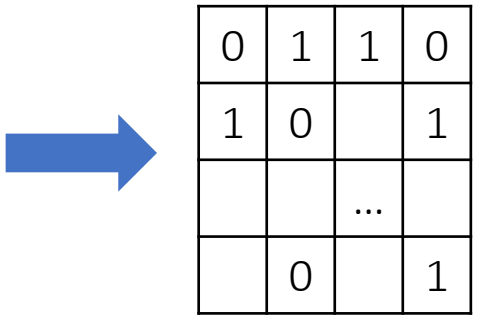
Input Text

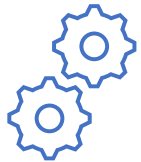
Word Embedding
(usually also based on Neural Network)

Neural Network

Prediction

„I like this book so much I cannot “





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Text is converted to numerical representation.

Neural Networks can only con sume numbers, not text!

Natural Language Processing

Vocabulary