Introduction to NLP Course

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Course objectives

- Provide to students a big picture of NLP field

- Students understand essential knowledge and techniques in building NLP models such as POS tagging, text classification, language models, etc.

- Students can implement some NLP models using Python and NLP/Machine Learning frameworks

Syllabus

- Lecture slides
- Textbooks:
  - (**SLP3**) Jurafsky, D., & Martin, J. H. (2014). Speech and language processing (Vol. 3). London: Pearson. Online version: https://web.stanford.edu/~jurafsky/slp3
- Online blogs, tutorials, github, kaggle

Prerequisites

- Programming proficiency

- Simple linear algebra (vectors, matrices)

- Basic probability theory

Topics covered in the course

1. N-gram Language Models
2. Linear Text Classification
3. Word Semantics
4. Neural Networks
5. Language and Sequence Modeling
6. Attention and Transformers
7. Pre-trained Language Models
8. Masked Language Models (BERT)
9. Fine-tuning Language Models
10. Applications of LLMs