1. NLP - Introduction

Contents

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1. Natural Language

- ✓ We are all used communicate with natural language.
  - We may speak to each other on daily base for different purpose.
  - It is very easy to speak than to write.
  - We are surrounded by text.

- ✓ Think about how much text you see each day:
  - Signs/signals
  - Menus
  - Email
  - SMS
  - Web Pages and much more…
  - The list is endless.

2. Now think about speech.

- ✓ We may speak to each other on daily base for different purpose.
- ✓ It is very easy to speak than to write.

3. Text data

- ✓ We need understand more about text related data.
- ✓ Text data also having separate methodologies to analyse the data.

4. Natural Language Processing

- ✓ The short name for Natural Language Processing is NLP.
- ✓ NLP is a way of computers to analyse, understand and derive meaning from human languages such as English, Spanish, Hindi, etc.
- ✓ With NLP, machine learning algorithms can be applied to speech and text.

5. NLP popularity is raising everyday

- ✓ Yes, the popularity of NLP is rising every day.
- ✓ With NLP, a computer can understand the human language while speaking
- ✓ By using big data we can make communication in between human and machine.
- ✓ With NLP an intelligent system such as a robot can perform according to our instructions issued in a plain language such as English.

6. IMP components in NLP

- ✓ There are mainly two components in NLP
  - Syntax
  - Semantic analysis

Syntax

- ✓ Syntax explains about the arrangement of the words in sentence and grammar as well
- ✓ NLP makes use of syntax to analyse to get the meaning from a language depending on grammatical rules.
- ✓ Some syntax techniques that are used for this include,
  - Parsing,
  - Word segmentation,
  - Sentence breaking,
  - Morphological segmentation and stemming.

7. Semantics

- ✓ Semantic is associated with the use and the meaning of various words.
- ✓ In NLP, algorithms are used to analyse and determine the meaning and structure of sentences.
- ✓ Some NLP techniques used for semantics include word understanding, named entity recognition and natural language generation.

8. Deep learning importance

- ✓ Most of the current approaches to NLP are using deep learning.
- ✓ Deep learning is a type of artificial intelligence that relies on the patterns in data to improve the understanding of a program.
- ✓ Deep learning models usually require huge amounts of labelled data to train and identify any correlations between the data elements.

9. NLTK

- ✓ NLTK means Natural Language Toolkit.
- ✓ It is a python module to work with nlp
- ✓ It is open source library
- ✓ To install this library,
  - pip install nltk