

Common Natural Language Processing (NLP) terms along with their definitions:

**Tokenization:**

The process of breaking text into individual units such as words or phrases, known as tokens.

**Part-of-Speech (POS) Tagging:**

Definition: Assigning a grammatical category (e.g., noun, verb, adjective) to each word in a sentence.

**Named Entity Recognition (NER):**

Identifying and classifying entities (such as names of people, organizations, locations) in text.

**Stemming:**

Reducing words to their base or root form, often by removing suffixes, to simplify analysis.

**Lemmatization:**

The process of reducing a word to its base or root form while considering the context and meaning.

**Stop Words:**

Common words (e.g., "the," "and," "is") that are often removed from text during preprocessing as they carry little semantic meaning.

**Corpus:**

A collection of text documents used for training and testing NLP models.

**TF-IDF (Term Frequency-Inverse Document Frequency):**

A numerical statistic used to reflect the importance of a word in a document relative to a collection of documents, considering both its frequency and rarity.

**Word Embedding:**

Representing words as vectors in a multi-dimensional space, capturing semantic relationships between words.

**N-gram:**

A contiguous sequence of n items (words or characters) in a given text or speech.

**Syntax:**

The arrangement of words and phrases to create well-formed sentences in a language.

**Semantic Analysis:**

Understanding the meaning of words, phrases, and sentences in context.

**Parsing:**

Analyzing the grammatical structure of a sentence to determine the relationships between its components.

**Text Classification:**

Assigning predefined categories or labels to text based on its content.

**Sentiment Analysis:**

Determining the emotional tone or sentiment expressed in a piece of text, often categorized as positive, negative, or neutral.

**Machine Translation:**

The automatic translation of text or speech from one language to another using computational methods.

**Dependency Parsing:**

Identifying the grammatical relationships between words in a sentence and representing them as a dependency tree.

**Bag of Words (BoW):**

A simple representation of text that counts the frequency of words in a document without considering the order.

**Recurrent Neural Network (RNN):**

A type of neural network architecture designed for processing sequential data, often used in NLP tasks.

**Attention Mechanism:**

A mechanism in neural networks that allows the model to focus on specific parts of the input sequence when making predictions, improving performance in tasks like machine translation.