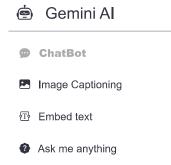
10/14/24, 5:12 PM Gemini AI





what is NLP

Natural Language Processing (NLP)

NLP is a field of artificial intelligence (AI) that deals with the interaction between computers and human (natural) language. It aims to enable computers to understand, interpret, and generate human language in a meaningful way.

Key Goals of NLP:

- Natural Language Understanding: Making computers comprehend the meaning of text (e.g., sentiment analysis, text summarization)
- Natural Language Generation: Enabling computers to produce human-like text (e.g., machine translation, text completion)
- Natural Language Interaction: Facilitate communication between humans and computers using natural language (e.g., chatbots, virtual assistants)

Techniques in NLP:

NLP incorporates various techniques from computer science, linguistics, and statistics, including:

- Tokenization and stemming
- Part-of-speech tagging
- Named entity recognition
- Machine learning algorithms
- Deep learning models

10/14/24, 5:12 PM Gemini AI

Applications of NLP:

NLP has numerous applications in various domains, such as:

- Information extraction (e.g., news articles, social media)
- Machine translation
- Chatbots and virtual assistants
- Text summarization
- Sentiment analysis
- Spam filtering
- Healthcare diagnostics
- Financial analysis

Challenges in NLP:

NLP faces several challenges, including:

- Ambiguity and context dependency
- Unstructured data
- Varying language patterns
- Limited training data

Despite these challenges, NLP continues to evolve rapidly, enabling computers to interact with humans in more natural and intuitive ways.

