

Overview of NLP

What is NLP?

Natural Language Processing (NLP) is a branch of computer science and artificial intelligence that focuses on getting computers to understand human language in the way humans understand it.

What is the relationship between AI and NLP?

NLP is a subset of artificial intelligence; it's the branch of artificial intelligence that focuses on computers understanding and manipulating human language.

What is natural language understanding and natural language generation?

Both natural language understanding (NLU), and natural language generation (NLG) are subsets of natural language processing. NLU focuses on reading comprehension and understanding the relationships between words: understanding meaning. NLG focuses on generating some text following human language rules based on some given input.

What are some examples of modern NLP applications?

Virtual assistants like Siri and Alexa are modern examples of a modern NLP application. Language translation and autocomplete also fall into this category.

The 3 Approaches to NLP

The rules-based approaches to NLP are the oldest techniques for NLP. As the name suggests, there are production rules for sentences to generate syntactically correct sentences or check if a sentence is grammatically correct. One example of the rules-based approach is the chat bot Eliza that used regular expressions to echo talking points back to the user. However, this approach can't scale up to the entirety human language.

The statistical and probabilistic approaches simply counted words and probabilities of sequences of words to develop language models. This approach can be used for predictive text, for example, suggestions in search queries. Classical machine algorithms also fall into this category.

The deep learning approach uses neural networks with access to large amounts of data and computing power to build a language model. With so much access to data the DL approach has seen a lot of success in recent times with GPT-3 and other large language models gaining popularity.

My Interest in NLP

NLP has become especially interesting to me with the rise of GPT-3 and other language generation models. It's surprisingly at the forefront of internet culture and I'm wondering how it really works. It seems AI generated content is just advancing at a breakneck pace, and I would like to learn more for personal projects and create my own chatbot: something funny at least.