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Overview of NLP

Natural language processing (NLP) refers to the focus on giving computers the ability to understand and process human language.

The relationship between AI and NLP is that NLP is a branch of AI. AI focuses on giving computers the ability to complete tasks that require human intelligence while NLP simply narrows this focus down to understanding and processing human language [1].

Natural language understanding is the understanding of human language words by the listening party while natural language generation is the creation of human language words. In dialog, natural language understanding is the understanding of words being spoken while natural language generation is the creation of human language responses [2].

Some examples of modern NLP applications include email filters, smart assistants, search results on browsers, language translation, and autocomplete [3].

The 3 main approaches to NLP are rules-based approaches, statistical and probabilistic approaches, and deep learning [2].

Rules-based approaches involve computers' use of rules to categorize the language that is being analyzed [4]. Examples of these approaches include the spell-check functionality, context-free grammar, and Eliza chatbot [2].

Statistical and probabilistic approaches involved counting words and then finding the probabilities of occurrences of words or word sequences to create language models that can be used to train the computers [2]. Examples of these approaches include translation systems, predictive text, and classic machine learning algorithms [2].

Deep learning involves training neural networks on large amounts of data to understand and process human language [2]. Examples of deep learning include recurrent neural networks, convolutional neural networks, and long short-term memory (LSTM) [2].

Honestly, I did not have a specific interest to learning about NLP before taking this class. I did have some interest in learning about AI. However, after starting this NLP course, I gained more interested in NLP and learning about how current industry-scale applications use NLP. I believe learning about NLP could be useful down the line in my career.

References:

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