

- A. Natural Language Processing is the method that allows computers to 'understand' human text and speech.
- B. Natural Language Processing is like a subsection of Artificial Intelligence, AI is what allows words and sentences to be processed and understood.
- C. Natural language understanding gets an input and processes it into something a computer can read, while generation gives a natural language output that is easily readable to users.
- D. NLP has been more prominent and useful day to day. Assistants such as Siri, Google assistant, and alexa all directly apply NLP to become simple to use tools that can even understand speech and answer back.

E.

Rules based approaches reads text and splits words and characters to set rules that then allow for a computer to give a precise response to the text it reads. They parse characters and separate them into set rules. Common examples are things like spell checking in word or google docs, context-free grammar, and early chatbots that had a pool of responses which utilized regex to give more personalized responses.

Statistical and probabilistic approaches read in data and find the patterns that human language has in order to understand and replicate it. It utilizes a large amount and can essentially learn on its own using that data. Some examples would involve linear algebra equations and distribution techniques utilized for large amounts of data.

Deep learning uses more advanced AI approaches that develop far better understanding and generation. Like statistical and probabilistic approaches it uses data to learn. It utilizes machine learning to train itself . Smart assistants like google assistant uses some form of deep learning to understand speech.

- F. Natural Language Processing to me is interesting as in present time, we are seeing that even consumer level NLP is impressive and reliable to do simple tasks. AI applications are near limitless and having it understand human language and speech makes it feel more alive and advanced. I would like to learn about the capabilities that NLP has now and how it can be implemented into projects. Additionally, would like to learn how to implement it to better understand its capabilities and potential uses.