A. NLP, in my words, is how we process speech that is used between humans. This speech can come in a variety of cargeories from formal vs informal or even gramatically correct vs incorrect.
B. NLP uses AI to help it process human speech. NLP is a subdivision of AI, where AI encompasses many other subdivisons such as machine learning.
C. Natural Language Understanding involves interpreting human speech while Natural Language Generation involves human speech generation which can be understood by humans.
D. One example of a modern NLP application involves sentiment analysis, where NLP is used to understand how humans feel about a certain subject based on the tone/syntax/diction of speech. Another example of a modern NLP application is a virtual assistant, where a human can talk to a machine, it will understand it, then generate a human-understandable response.
E. The rule-based approach involves using already-made rules to process human speech. Eliza is an example, which was a chatbot which tried to use regular expression to generate human responses. The second approach is statistical approach which uses machine learning based on probability to analyze human speech. An example is Google, which uses machine learning methods to rank web pages when you make a query using its search engine. The last approach is the neural approach which involves processing speech using neural networks. An example is chatgpt3, a new/trendy deep learning model used to generate human-like text.
F. My personal interest stemmed from sentiment analysis which I used for one of my projects where I analyzed stock price and how it was affected by how people felt about said stock. I would like to learn more about it now in a academic setting as most of my experience with it has been informal.