HomeWork 0 – Prachi Patel

1. NLP is natural language processing, which essentially is the ability of a computer to understand human language and process it to make meaningful discoveries.
2. AI is a bigger umbrella field that contains many subfields. One of the subfields under AI is NLP. NLP is a specific branch under AI in which the computer is looking to understand human language.
3. Natural Language Understanding allows for a computer to understand human language whereas Natural Language Generation allows for a computer to write in a human language.
4. Modern uses of NLP include sentiment analysis, Translators, and autocomplete.
5. The first of the approaches is the rules-based approach. This approach is very rigid and doesn't encompass the complexity of the human language. If the rule doesn't exist then the computer will not be able to process the language. An example of a rules based approach is a grammar spell check. The grammar spell check uses the rules of language to check the correctness of the spelling.

   The second method is the statistical and probabilistic approach. This approach relies on a corpus of data. This means that this method relies on having a moderate amount of data to find relationships between words because it relies on the frequencies of words. This method is often seen implemented in many of the Machine Learning models we see in this day. An example would be sentiment analysis.

   The third method is deep learning. This method requires an immense amount of computing power and even more data. Deep learning is a method that imitates the way that humans learn, by repeatedly teaching the computer in expanding detail the characteristics of the subject being studied. This method is used in things like caption generation and speech recognition.
6. My personal interest in NLP is honestly just further exploration of a subfield in AI. I am unsure of which industry I specifically want to enter, so I am taking this course to learn more about the specifics of NLP. I found the idea appealing when it was briefly touched upon in my Machine Learning class, so I decided to explore a little further. This class will hopefully give me that understanding of NLP to apply in my future job as I enter the workforce. I find it interesting in the many ways we can simulate ways for computers to understand human processes such as speech. Its also interesting in how we can manipulate computers to not only understand human language but also generate it back to us.