

Assignment 1 - Bill Dozier BPD180000

define NLP in your own words

NLP is how computers "understand" and generate human language

describe the relationship between AI and NLP

NLP is under the large umbrella of AI, it is a sub-category

write a sentence or two comparing and contrasting natural language understanding and natural language generation

Natural language understanding is how a program processes human language, to analyze its text. While natural language generation is creating human language usually for use in a user-interface. Natural language understanding and generation go together as they can pass from one to another. W

list some examples of modern NLP applications

- Spam detection
- Language translation/generation
- "OK Google"
- Siri

write 3 paragraphs describing each of the 3 main approaches to NLP, and list examples of each approach

The first approach to NLP is a **Rules-Based Approach**. This was the original approach to NLP, and programs we consider common such as spell checkers were seen as a big deal. The main issue with this approach was that rules didn't scale well with the complexity of human language.

The second approach is using **Probability and Statistics**. This approach uses things like word frequencies to do things like auto-correction. Another main issue with this approach is scaling with the complexity of human language.

The third approach is using **Deep Learning**. This approach trains a learning model against large quantities of data, and resulted in improvements in language translation, generation, understanding and more. Deep learning also utilizes previous approaches, but the main issue with the deep learning approach is that it needs lots and lots of data, which can be costly.

write a paragraph describing your personal interest in NLP and whether/how you would like to learn more about NLP for personal projects and/or professional application

I'm personally interested in NLP because it's an extremely applicable domain of AI which would seem fun to weave into personal projects. Personally I'm not sure exactly what I would learn, but sentiment analysis sounds really interesting.