Natural Language Processing

One of the NLP applications I often use is Google Search. According to Google, “Natural Language Processing (NLP) research at Google focuses on algorithms that apply at scale, across languages, and across domains. Our systems are used in numerous ways across Google, impacting user experience in search, mobile, apps, ads, translate and more.” [Google, 2024].

One of Google Search's key features is *Intent Recognition*. What it essentially means is that Google AI tries to understand the user's intent for the search. For example, when one searches for “directions to Chicago,” Google uses Google Maps to determine the path to Chicago from the current location. Another feature it uses is *Synonym Recognition*. For example, if one searches for “women’s apparel,” Google also uses synonyms for “apparel,” such as “clothes” to augment the search.

Google Search also uses the *Voice-to-text* feature to enhance its application. Voice-to-text converts the user's input as a voice to corresponding text, which can then be used for the search. Another feature of Google Search is *translation* between language. For example, if the user inputs a translation query in German, Google will convert into English using NLP.

The four features that can be improved in Google’s NLP are conversational search, translation, voice-to-text conversion, and code generation. Unlike ChatGPT, Google does not keep track of previous queries. This feature can be immensely helpful if one is trying to refine the search. Translation often does not appropriately interpret the nuances of a language. This can be improved through further training. A similar comment goes for voice-to-text conversion. Lastly, the code generation of ChatGPT is often useful to generate code snippets, which can be used to develop a large codebase. While code examples can be obtained from Google Search, they are not always relevant to the query. Adding this feature can make the Google NLP much more powerful.

References:

Google, 2024. <https://research.google/research-areas/natural-language-processing/>