

Google's Search Engine

In my opinion, Google has the best search engine out there by far because when I must search for something, Google search is what I will immediately go to use as it tends to return what I have asked for. Google uses NLP to deliver better results when their search engine is used. They introduced BERT (Bidirectional Encoder Representations for Transformers) in 2019. It is a neural network- based technique for pre-training.

With BERT being pre-trained specifically on Wikipedia which has 2.5 billion words and Google Books Corpus which has 800 million words, the model can be fine tuned on NLP applications such as question answering which Google uses within their search engines, their Google Nest devices & Google translate. Sentiment analysis which would help Google return accurate search results as it is able to understand the tone/sentiment in which you used their search engine.

BERT can catch subtle nuances that us humans have and use whereas computers wouldn't understand. BERT has bidirectional capability which allows it to read text input left to right and vice versa at the same time and with that functionality, Google pre-trained it on two NLP applications:

Masked Language Modelling – The program predicts a masked word based on context i.e. “ I missed my appointment because the [mask] took too long to arrive.

Next Sentence Prediction – The program will predict whether two sentences have a random, logical, or sequential relationship.

BERT was trained 50% on both NLP applications at the same time.

Since implementing BERT, they've stated that BERT helps Search better understand one in 10 searches in the U.S. in English and that they are bringing it to more locales and languages over time.

If you are to compare the results you receive from using alternative search engines such as Bing or Yahoo, it is quite evident that Google takes the reigns when it comes to returning the best relevant results and with an innovative technology like BERT which is able to essentially humanise text and give it depth and sentiment along with all the pre-training as well as the NLP applications it is constantly using, it is honestly astonishing to see the lengths BERT goes to in order to assist Google Search return the best results to our queries.