BERT: What is it?

Defining BERT

BERT (Bidirectional Encoder Representations from Transformers) is a transformer-based machine learning technique for Natural Language Processing (NLP) pre-training developed by Google. A transformer-based model is a neural network that learns context and thus meaning by tracking relationships in sequential data. Transformer models apply an evolving set of mathematical techniques, called attention or self-attention, to detect subtle ways even distant data elements in a series influence and depend on each other.

BERT was created and published in 2018 by Jacob Devlin and his colleagues from Google. In 2019, Google announced that it had begun leveraging BERT in its search engine, and by late 2020 it was using BERT in almost every English-language query. A 2020 literature survey concluded that "in a little over a year, BERT has become a ubiquitous baseline in NLP experiments", counting over 150 research publications analyzing and improving the model.

What can BERT be used for?

BERT can be used as a base and then can be modified or fine-tuned for a variety of tasks like sentiment analysis, text prediction, text generation, summarization, and more. Many such pre-trained models are readily available online for usage. Check out the BERT_Sentiment_Analysis_TIPS file for information on sentiment analysis using BERT and how it is implemented in the NLP Suite. Can add more references to other tools once they are also implemented into the NLP Suite.

References

BERT_Sentiment_Analysis_TIPS.pdf