Using BERT for SQuAD 2.0

Ryle Zhou, Stanford University
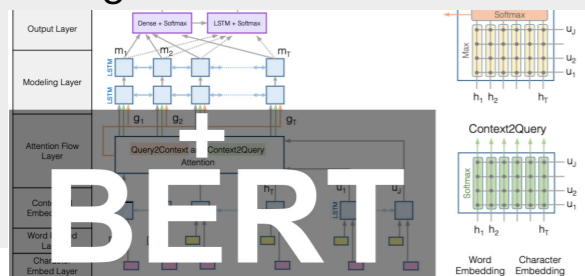rylezhou@stanford.edu

Motivation

- Question answering is an important NLP task. QA systems allow a user to ask a question in natural language, and receive the answer to their question quickly. SQuAD 2.0 is a challenging natural language understanding task. Models preconditioned with BERT achieved better than human performance on SQuAD 1.1 and currently lead on SQuAD 2.0 top performance.

New Technique

- BERT(Bidirectional Encoder Representations form Transformers)
- BERT's architecture produces a deep bidirectional pretrained contextual representations.BERT is designed to pre-train deep bidirectional representations by jointly conditioning on both left and right context in all layers. As a result, the pre-trained BERT representations can be fine-tuned with just one additional output layer to create state-of-the-art models for a wide range of tasks, such as question answering and language inference, without substantial task-specific architecture modifications.

Related Work

- Add character embeddings to BiDAF(Bidirectional Attention Flow for Machine Comprehension)
- Combining BERT with Bidirectional LSTMs.

Experimental Results

- *BiDAF with character embeddings*
Dev NLL: 02.93, F1: 63.73, EM: 60.31, AvNA: 69.82.
- *BERTPlusBiLSTM: no result yet*

References

Jacob Devlin, Ming-Wei Chang, Kenton Lee, Kristina Toutanovaauthor, BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding
, Oct 2018