Overview of BERT and its related models or applications on Text Classification

Introduction

Bert can be used for various NLP tasks such as text classification or sentence classification, semantic similarity between sentence pairs, question answering tasks with paragraphs, text summarization, etc. However, due to some bidirectional information retrieval features, we cannot use Bert, such as machine translation, text generator, etc. This is because we need to get information in both directions, and we need to fine-tune the BERT model for our task,

Implementation of Text Classification

First we get BERT up and running, which requires us to create a virtual environment, or we can use conda, we need a text classification dataset, we use the Yelp comment polarity dataset, and it is revealed that we use pandas to process data in csv format, Converting the data to a BERT-friendly data type, The final step before fine-tuning is to convert the data into features that BERT uses. Most of the remaining code was adapted from the Hugging Face example run_classifier.py, found here.

References:

Aryanshu Verma . (2018, June 12). Application of BERT: Binary Text Classification Retrieved November 6, 2022, from https://iq.opengenus.org/binary-text-classification-bert/

Thilina Rajapakse. (2019, June 9). A Simple Guide On Using BERT for Binary Text Classification. Retrieved November 6, 2022, from https://medium.com/swlh/a-simple-guide-on-using-bert-for-text-classification-bbf041ac8d04

Saumyab (2021 Dec 31). Text Classification using BERT and TensorFlow. Retrieved November 6, 2022, from https://www.analyticsvidhya.com/blog/2021/12/text-classification-using-bert-and-tensorflow/

Santiago González-Carvajal, Eduardo C. Garrido-Merchán (2020, May 26). Comparing BERT against traditional machine learning text classification Retrieved November 6, 2022, from https://arxiv.org/abs/2005.13012

Sumanth Prabhu, Moosa Mohamed, Hemant Misra(2021, Apr 27). Multi-class Text Classification using BERT-based Active Learning Retrieved November 6, 2022, from https://arxiv.org/abs/2104.14289