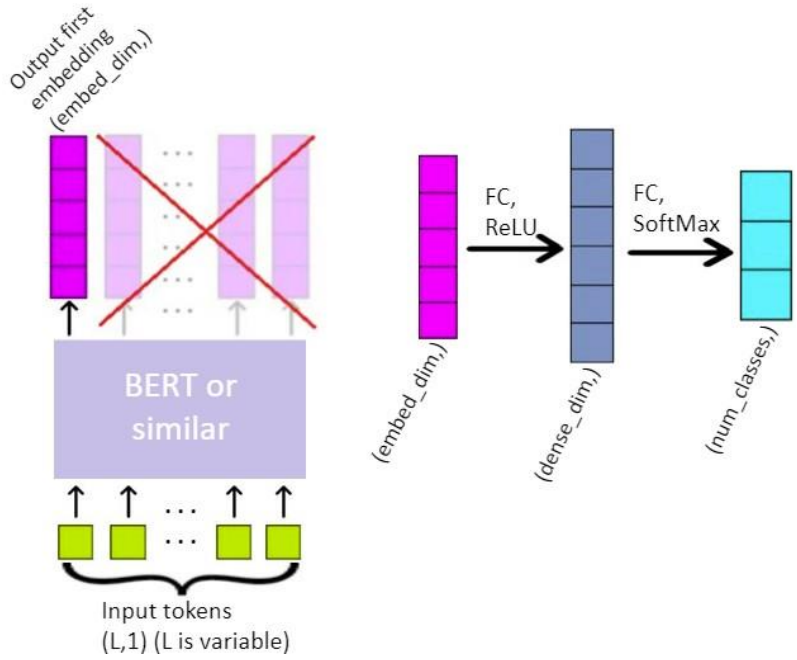
Video: https://youtu.be/FAQ0AdnK7U4

The following diagram shows the architecture of our transfer learning model:



We choosed to build on the DistilBERT (Huggingface TFDistilBertModel) due to its small size that doesn't push our GPU to the limit. But other similar alternatives, such as ALBERT, BERT, RoBERTa,and XLNet, can be used interchangeably. Our model will be built with Keras functional API. The sentiment analysis dataset is also from Huggingface at https://huggingface.co/datasets/mteb/tweet_sentiment_extraction with three labeled classes being negative, neutral and positive.

The model hit a validation accuracy of 99.3% while the test accuracy was lower at 77%. That said, it was discovered that most of the discrepancies are associated with the ‘neutral’ sentiment, which was somewhat ambiguous to define.