Assignment 4

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1   Links

Github: https://github.com/owenbean400/NLPAssignment3

2   Step 1

For P@1 value on stack exchange duplicate question with model "distilbert-base-nli-stsb-quora-ranking", I got 0.011. Looking at the data, I noticed the duplicate questions were the question itself, so I tried P@1 value, excluding same question ID guessed. That value was 0.156. This is concluding that the model is duplicating the same ID question, however, ignoring this factor has showed 15% of the questions retrieved is correct duplicate question. The Mean reciprocal rank from 100 queries is 0.095. This shows the model is averaging the tenth question is correct duplicate.

3   Step 2

I've done fine-tuning to "distilbert-base-nli-stsb-quora-ranking" by the losses with 90% of the data labeled as duplicate with another data label as not duplicate to train the new loss value on model. The results from 10% testing data has P@1 value at 0.0118. I've tried the ignoring same question ID for P@1, which is 0.1417. The MRR value is 0.0931.

4   Step 3

I've used the same testing data for fine-tuning onto the pre-trained model. The P@1 scores were the same. The MRR score difference was 0.000658. The t-value is 7.2402. Looking at the T-table, 7.2402 is way off the table, making α less than 0.0005. Therefore, there is no significant change from fine-tuning and pre-trained.