RALI AT QRECC

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1 Introduction

For the QReCC task, we build a conversational question answering (QA) model using readily available tools. Our model takes rewritten queries as input. It consists of a BM25 retriever and a BERT reader fine-tuned for QA. We improve on the baseline performance even though we have limited resource and time.

2 Model

Our model consists of a BM25 retriever and a BERT reader. For each rewritten query, we use BM25 to retrieve a set of relevant documents. Inspired by previous works, we set the parameters as $k_1 = 0.82$, $b = 0.68$ [1]. We select only the top 100 passages retrieved by BM25 as the input for machine reading.

Our machine reading model is BERT base fine-tuned on SQuAD v1, which is available on huggingface[1]. The training objective of our entire model is formulated as

$$S = (1 - \mu)S_{\text{BM25}} + \mu S_{\text{BERT}} \tag{1}$$

where S_{BM25} is the score of BM25 retrieval model, and S_{BERT} is the score of BERT base machine reading model. Similar to previous works, we set the parameter μ to 0.7 [1]. We train our entire model on the QReCC data for 1 epoch.

3 Result

Table 1 shows the performance of our model compared to baseline. Our model performs better than the baseline [2] even though we use a smaller version of BERT and train it for only one epoch. This shows the potential of language models fine-tuned for QA task. We expect the performance to improve when we use a bigger model and train it for more epochs. In the future, we will also experiment with a joint objective for rewriting and QA.

Model	Validation		Test	
	F1	Exact Match	F1	Exact Match
Simple Baseline	0.078	0	0.098	0.001
Rewritten Queries + BERT Reader	0.102	0	0.166	0.003

Table 1: Performance on QReCC by Our Model and Baseline

[1] https://huggingface.co/csarron/bert-base-uncased-squad-v1

References

[1] Raviteja Anantha, Svitlana Vakulenko, Zhucheng Tu, Shayne Longpre, Stephen Pulman, and Srinivas Chappidi. Open-domain question answering goes conversational via question rewriting. *CoRR*, abs/2010.04898, 2020.

[2] Qrecc simple baseline. `https://github.com/scai-conf/SCAI-QReCC-21`. Accessed: 2021-10-25.