
# Conversational QA Model Implementation over Multi-Turn Dataset using BERT model in Hugging Face


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Brief report on model performance and the importance of conversation history 🔍
BERT model pre-trained on SQuAD was used to answer a series of multi-turn
.conversational questions based on a single paragraph

:The model was tested in two conditions
,one without including the history of previous questions
.and the other with this history included in the context sent to the model

Performance without conversation history ⚙️
When each question was passed separately with only the original text, the model demonstrated good ability to extract direct and clear answers. However, it failed to understand questions that depended on conversational context or began with phrases such .as "and?" or "how many?", as it had no idea of the intended referent in these questions

```
--------------------------------------------------
Q: and?
A: one of the oldest libraries in the world
Expected: philosophy, science and theology
```

```
Q: how many?
A: 75,000
Expected: five
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```

Performance with conversation history 🧠

When including previous questions and answers in context, the model's performance significantly improved. It was able to track implicit referents in questions and understand the relationship between the current question and the previous conversational context. For example, the question "and?" was understood as a continuation of the previous question and .generated a correct answer

```
--------------------------------------------------
Q: and?
A: philosophy, science and theology
Expected: philosophy, science and theology
--------------------------------------------------
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Q: how many?
A: five
Expected: five
------------------------
```

Conclusion 📈

Adding conversation history made the model better able to understand the overall context and logical sequence of questions, resulting in increased accuracy in answering indirect questions. This demonstrates that question-and-answer models, despite being trained on discrete questions, can improve their performance in sequential dialogues by adding .conversation history