



Multi-hop reasoning for HowTo questions

Motivation

Recently, large pre-trained language models have shown great success on a variety of applications in NLP. Using these models, it has already been shown, that it is possible to find the correct answer to questions, that require reasoning over multiple sentences of the input text. Preferably, however, we would like to have computer systems, that are able to aggregate different information on their own in a meaningful ways, that help people with their problems. In this thesis we like to investigate, how well models can reason over the (causal) implications of multiple steps of HowTo instructions from WikiHow. Specifically, we want to investigate, how well language models are able to re-construct the order (when required) of multiple step-wise instructions, leading to a specific goal (e.g. "How to build a house?")

Task Description

- Analyze what kind of relations exist between different steps and how to automatically extract them (e.g. do they need to be done in order? Are they alternatives?)
- Apply large language models on the created dataset to re-produce the correct order/relations of the step-wise instructions
- Evaluate what kind of (causal) relations language models are able to identify, and where they fail

References

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- Huang, L., Le Bras, R., Bhagavatula, C., and Choi, Y. (2019). *Cosmos QA: Machine reading comprehension with contextual commonsense reasoning*. EMNLP, Hong Kong, China

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Analysis



Programming



Literature



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