

Review of: "Limitations of and Lessons from the Learning of Large Language Models"

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This is an interesting article discussing the ability of LLMs to perform logical reasoning. My comments are as follows:

- One of the advantages of using LLM for logical reasoning is the ability to reason in natural language, just like humans. Does this study address reasoning with natural language? Or does it target programmatic reasoning?
- LLMs only predict and output the words that follow the input string, which may be accompanied by hallucinations. Current LLMs seem to have difficulty directly performing complex logical reasoning. I believe, as the author argues, that the limited length of tokens that can be input into the LLM is one of the reasons that limit the LLM's ability to perform logical reasoning. On the other hand, LLMs that allow reading and writing to external memory^[1] have been studied. They may be able to store the reasoning process in external memory. I would like you to discuss the logical reasoning abilities of these LLMs.
- Other than the length of the tokens that can be input into the LLMs, are there any other possible factors that would limit the LLM's ability to perform logical reasoning?

References

1. [^] Packer, Charles, et al.. (2023). *MemGPT: Towards LLMs as Operating Systems*. *arXiv preprint*.