Project Name:

Can LLM Models Understand Human Logic?

Team Members:

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Project Purpose:

The goal of this project is to explore and evaluate the ability of Large Language Models (LLMs) to understand human logic. Despite the recent popularity of LLM models, few studies have focused on their capacity for logical reasoning. Our project aims to teach one model to solve logic problems and another to generate logic problems.

Project Innovation:

The innovation of this project lies in its in-depth analysis of the logical abilities of current LLM models, examining their limitations through various experiments. We will focus on optimizing these models through techniques like prompt engineering, metacognitive instruction, and contextual reasoning scaffolding. Our goal is to create a system that can not only solve logic problems but also generate them autonomously.

Project Scope:

The project will begin with a review of existing studies in the field, followed by an analysis of the limitations of current models. We will then evaluate popular models in terms of their ability to solve and generate logic problems. The project will include optimizing these models, using prompt engineering and metacognitive instruction for the model generating problems, and applying contextual reasoning support and systematic error correction mechanisms for the model solving problems. Finally, we will create evaluation metrics and protocols to assess the results.