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MEKiT: Multi-source Heterogeneous Knowledge Injection Method via Instruction-Tuning for Emotion-Cause Pair Extraction

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Abstract

Although large language models (LLMs) excel in text comprehension and generation, their performance on the Emotion-Cause Pair Extraction (ECPE) task, which requires reasoning ability, is often underperform smaller language model. The main reason is the lack of auxiliary knowledge, which limits LLMs' ability to effectively perceive emotions and reason causes. To address this issue, we propose a novel Multi-source hEterogeneous Knowledge injection meThod, MEKiT, which integrates heterogeneous internal emotional knowledge and external causal knowledge. Specifically, for these two distinct aspects and structures of knowledge, we apply the approaches of incorporating instruction templates and mixing data for instruction-tuning, which respectively facilitate LLMs in more comprehensively identifying emotion and accurately reasoning causes. Experimental results demonstrate that MEKiT provides a more effective and adaptable solution for the ECPE task, exhibiting an absolute performance advantage over compared baselines and dramatically improving the performance of LLMs on the ECPE task.