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Coupling Large Language Models with Disaster Knowledge Graphs for Intelligent Construction

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Abstract : In the context of escalating global climate change and environmental degradation, the complexity and frequency of natural disasters are continually increasing. Confronted with an abundance of information regarding natural disasters, traditional knowledge graph construction methods, which heavily rely on grammatical rules and prior knowledge, demonstrate suboptimal performance in processing complex, multi-source disaster information. This study, drawing upon past natural disaster reports, disaster-related literature in both English and Chinese, and data from various disaster monitoring stations, constructs question-answer templates based on large language models. Utilizing the P-Tune method, the ChatGLM2-6B model is fine-tuned, leading to the development of a disaster knowledge graph based on large language models. This serves as a knowledge database support for disaster emergency response.

Keywords : large language model, knowledge graph, disaster, deep learning
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