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PiPMRE: A Pipeline Based on Language Model for Medical Relation Extraction

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Abstract

Medical relation extraction (MRE) is commonly known to extract entities and their relations jointly from a medical text, which has attracted much attention in recent years. Previous studies treat MRE as a sequence tagging task, which results in either a challenging design of the tagging schema or a failed extraction of multiple relations, due to intricate relationships among medical entities. In this work, we review the task from a linguistic perspective and propose a novel pipeline framework, PiPMRE, developed on language models to enhance MRE performance. Specifically, PiPMRE consists of a relation generator and a relation filter. Given a text, the generator first yields multiple relational triplets, and then the filter scores each triplet and retains only those that pass the borderline as the final results. Implementing PiPMRE requires no tagging schema, instead, we use a simple template to reformulate the input text while ensuring entities and relations are generated in contextual order. Extensive experimental results on two public datasets demonstrate the advancement of PiPMRE. It surpasses the previous state-of-the-art by an average of 5.6 recall points and 4.4 accuracy points. PiPMRE's superiorities are also demonstrated in few-shot settings.