

Cross-Knowledge Graph Relation Completion for Non-Isomorphic Cross-Lingual Entity Alignment

Authors : Yuhong Zhang, Dan Lu, Chenyang Bu, Peipei Li, Kui Yu, Xindong Wu

Abstract : The Cross-Lingual Entity Alignment (CLEA) task aims to find the aligned entities that refer to the same identity from two knowledge graphs (KGs) in different languages. It is an effective way to enhance the performance of data mining for KGs with scarce resources. In real-world applications, the neighborhood structures of the same entities in different KGs tend to be non-isomorphic, which makes the representation of entities contain diverse semantic information and then poses a great challenge for CLEA. In this paper, we try to address this challenge from two perspectives. On the one hand, the cross-KG relation completion rules are designed with the alignment constraint of entities and relations to improve the topology isomorphism of two KGs. On the other hand, a representation method combining isomorphic weights is designed to include more isomorphic semantics for counterpart entities, which will benefit the CLEA. Experiments show that our model can improve the isomorphism of two KGs and the alignment performance, especially for two non-isomorphic KGs.

Keywords : knowledge graphs, cross-lingual entity alignment, non-isomorphic, relation completion

Conference Title : ICDAR 2022 : International Conference on Document Analysis and Recognition

Conference Location : Jerusalem, Israel

Conference Dates : November 29-30, 2022