Research on Construction of Subject Knowledge Base Based on Literature Knowledge Extraction

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Abstract : Researchers put forward higher requirements for efficient acquisition and utilization of domain knowledge in the big data era. As literature is an effective way for researchers to quickly and accurately understand the research situation in their field, the knowledge discovery based on literature has become a new research method. As a tool to organize and manage knowledge in a specific domain, the subject knowledge base can be used to mine and present the knowledge behind the literature to meet the users' personalized needs. This study designs the construction route of the subject knowledge base for specific research problems. Information extraction method based on knowledge engineering is adopted. Firstly, the subject knowledge model is built through the abstraction of the research elements. Then under the guidance of the knowledge model, extraction rules of knowledge points are compiled to analyze, extract and correlate entities, relations, and attributes in literature. Finally, a database platform based on this structured knowledge is developed that can provide a variety of services such as knowledge retrieval, knowledge browsing, knowledge q&a, and visualization correlation. Taking the construction practices in the field of activating blood circulation and removing stasis as an example, this study analyzes how to construct subject knowledge base based on literature knowledge extraction. As the system functional test shows, this subject knowledge base can realize the expected service scenarios such as a quick query of knowledge, related discovery of knowledge and literature, knowledge organization. As this study enables subject knowledge base to help researchers locate and acquire deep domain knowledge quickly and accurately, it provides a transformation mode of knowledge resource construction and personalized precision knowledge services in the data-intensive research environment.