

An Ontological Approach for the Semantic Knowledge Modeling of Literature Texts and Resources

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The successful transition from the World Wide Web to the Semantic Web relies on the construction, connection, and application of domain ontologies for information and services that need to be shared by people and applications. Therefore, there are many ontology-learning researches for developing the automatic ontology construction methods facilitating text understanding of textual resources. The automatic text learning approaches, however, have difficulty in processing for concept identification and extraction from literature texts because they have lots of drawbacks in terms of correctness. In this paper, we propose a methodological guidance for creating, reusing, and publishing literature domain ontologies based on textbooks and resources. Our methodology defines three process phases, which are textual content analysis and composition, conceptualization and instantiation, and connection and publication. In addition, we provide detailed activities of each phase for domain experts, such as paragraph-centric analysis method of textual resources, incremental creation of hierarchy relationship and associations, formalization of concepts, and the creation of links with Linked Open Data corpus. As a result of the actual creation and evaluation of semantic knowledge models of philosophy textbooks and Kewen datasets, we know that our designated literature ontology and methodology can be applied to different literature fields to reduce the time and efforts required for creating handcraft domain ontologies.