

BUILDING ONTOLOGY-DRIVEN TUTORING MODELS FOR INTELLIGENT TUTORING SYSTEMS USING DATA MINING

ABSTRACT

Pedagogical (Tutor or Tutoring) Models are an important element of Intelligent Tutoring Systems (ITS) and they can be described by sets of (tutoring) rules. The implementation of a Tutoring Model includes both the formal representation of the aforementioned rules and a mechanism able to interpret such representation and execute the rules. One of the most suitable approaches to formally represent pedagogical rules is to construct semantic web ontologies that are highly interoperable and can be integrated with other models in an ITS like the subject domain and the student model. However, the main drawback of semantic web based approaches is that they require a considerable human effort to prepare and build relevant ontologies. This project proposes a novel approach to maintain the benefits of the semantic web based approach in representing pedagogical rules for an ITS, while overcoming its main drawback by employing a data mining technique to automatically extract rules from real-world tutoring sessions and represent them by means of Web Ontology Language (OWL).