Ontology extraction

Abstract

Ontology is an important emerging discipline that has the huge potential to improve information organization, management and understanding. Ontology has become an important mean for structuring knowledge and building knowledge-intensive systems. The importance of domain ontologies is widely recognized, particularly in its relation to the expected advent of the Semantic Web. As the term refers to the shared understanding of some domains of interest, which is often conceived as a set of concepts, relations, functions, axioms and instances (Gruber, 1993), the goal of a domain ontology is to reduce the conceptual and terminological confusion among the members of a virtual community of users that need to share electronic documents and information of various kinds. According to Uschold and Jasper (1999), `An ontology may take a variety of forms, but necessarily it will include a vocabulary of terms, and some specification of their meaning. This includes definitions and an indication of how concepts are interrelated which collectively impose a structure on the domain and constrain the possible interpretations of terms.' Gruber (1993) defines ontology as `the specification of conceptualizations, used to help programs and humans share knowledge'. The conceptualization is the couching of knowledge about the world in terms of entities (things, the relationships they hold and the constraints between them). The specification is the representation of this conceptualization in a concrete form. One step in this specification is the encoding of the conceptualization in a knowledge representation language.