

Unranked Fuzzy Reasoning

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One of the main tools in knowledge representation is ontology, which is a collection of logic-based formal language sentences. These sentences are used by automated reasoning programs to extract new knowledge and answer to the given questions.

Although ontology languages are standardized by W3C, there are still many problems remaining. One of the most important problems is related to, so called, fuzzy ontologies. These are ontologies, where information is vague and imprecise. Fuzzy ontologies are obtained by integrating fuzzy logic with ontologies. Such kind of ontologies have applications in many different fields, such as medicine, biology, e-commerce and the like.

In this talk, we develop an unranked fuzzy logic and a tableau method for reasoning over such logic. The novelty of our approach is that we will extend many-valued logics with sequence variables and flexibility function and predicate symbols. The unranked fuzzy language and corresponding reasoning method will broaden the knowledge engineering capabilities in different fields.