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Learning Rules on top of Ontologies: An Inductive Logic Programming Approach

New challenging application areas like the Semantic Web require the definition of rules on top of ontologies. Hybrid systems for Knowledge Representation and Reasoning (KR&R) that combine (fragments of) Horn clausal logic and Description Logics, notably AL-log, have been invented to provide one such unified framework for dealing with both relational and structural data. Yet acquiring hybrid rules is a demanding and time-consuming task. It can be (partially) automated by applying Machine Learning algorithms, more precisely those ones following the approach known under the name of Inductive Logic Programming (ILP).

In this seminar I shall present a general framework for learning rules on top of ontologies that adopts the methodological apparatus of ILP within the KR&R setting of AL-log. Also I shall briefly discuss an ILP system that implements an instantiation of the framework and the preliminary results of its application in the Semantic Web context.