Datalog+/–: A New Family of Languages for Knowledge Representation and Reasoning

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Abstract

Datalog+/– is a recently introduced family of expressive extensions of Datalog for knowledge representation and reasoning. In particular, Datalog+/– allows for representing ontological axioms and for query answering under such axioms. The Datalog+/– languages are derived from Datalog by allowing existentially quantified variables, equality, and the falsum in rule heads, and, at the same time, by enforcing suitable restrictions to achieve decidability and tractability. I will give a general overview of the Datalog+/– family of languages, including complexity results for query answering, main application areas, as well as extensions for handling inconsistencies, probabilistic uncertainty, and preferences.