

A framework for data, knowledge, and reasoning: Datalog[±]

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Abstract. Datalog[±] is a family of logic programming languages for data manipulation, knowledge representation and reasoning. These languages extend Datalog with features such as existential quantifiers, equalities, and the falsum in rule heads and negation in rule bodies, and, at the same time, apply restrictions in order to achieve decidability and tractability. This talk will start with a general overview of the Datalog[±] family and its main decidability paradigms and an explanation of how tractable classes can be achieved. Subsequently, some more specialized issues will be dealt with such as nonmonotonic negation and disjunction. We will also report about a special version of Datalog[±] suitable for ontological reasoning, reasoning with reverse-engineered UML class diagrams, and about the TriQ language that expresses SPARQL with entailment regimes.