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Title: Context-Sensitive Description Logics in a Dynamic Setting

Abstract: Description Logics (DLs) are a family of knowledge representation formalism that provide balances between expressivity and reasoning complexity. To represent and reason over context-sensitive knowledge, DLs of context (ConDLs) are studied and employed. In this work, we extend ConDLs with temporal facet to represent dynamic settings. The first approach that we show is extending ConDLs with action formalism that represent the changes in the system. Furthermore, we consider the projection problem, i.e., checking properties after executing a sequence of actions. Another extension being considered are ConDLs with linear temporal logic. The satisfiability problem of the formula is surprisingly well-behaved even when rigidity aspects are taken into account.