

Nonmonotonic Multi-Context Systems in Dynamic Environments^{*}

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Abstract. Multi-context systems (MCS) have been developed as a means for interlinking stand-alone knowledge bases, called contexts, via bridge rules for information exchange. Expressive MCS can host heterogeneous components with different (possibly nonmonotonic) semantics, and allow to capture a range of application logics, providing a versatile framework for interlinking heterogeneous knowledge bases. A underlying assumption of MCS is, however, that the underlying collection of knowledge bases and their interlinkage is fixed. This hinders, however, to usage of MCS in an open or dynamic environment, where the available knowledge bases might change. To improve on this aspect, recent work at TU Wien developed Dynamic MCS, which consist of schematic contexts where part of the information interlinkage can remain open at design time; a concrete linkage is established by a configuration step at run time. In this talk, we present dynamic MCS, methods for distributed configuration, and some results of an experimental implementation.

Short Biography. Thomas Eiter is a full professor (since 1998) in the Faculty of Informatics at Vienna University of Technology (TU Wien), Austria, where he leads the Knowledge Based Systems Group. His current research interests include knowledge representation and reasoning, logic programming, complexity in AI, knowledge-based agents, database foundations, and logic in computer science. He serves on the boards of several international journals and program committees in his fields (e.g., co-chair of KR 2012). He is a Fellow of the European Coordinating Committee for Artificial Intelligence (ECCAI), and a Corresponding Member of the Austrian Academy of Sciences.

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