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Refereed Article

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Minimal Knowledge Approach to Reasoning about Actions and Sensing

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Abstract: *We present an autoepistemic approach for reasoning about actions in the presence of incomplete information and sensing. Specifically, we introduce a logical formalism that combines a very expressive logic of programs, the modal mu-calculus, with a minimal knowledge modality. We show that reasoning in such a formalism can be done by integrating model checking for modal mu-calculus and propositional inference. This allows for exploiting existing model checking techniques and systems for sophisticated forms of reasoning about actions, without renouncing to deal with incomplete information about the dynamic system.*

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