Modal Logics of Knowledge and Time

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Abstract

The talk will give a "state of the art" overview of modal logics of knowledge and time, covering both axiomatizations and model checking. In the temporal dimension, we consider both linear and branching time logics. The semantics of knowledge can be defined in a variety of ways, reflecting differing assumptions about the resources available to the agent in determining what it knows: from its current observation only, to synchrony (observation plus clock) to perfect recall. We discuss the impact of these assumptions on the axiomatizations and on the complexity of model checking of the combined logics. We also describe some initial experiments with a model checker based on these results.

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