Zhang, Wenhui

Bounded semantics.

Summary: Although there have been many works on bounded semantics, a characterization of a good definition for a bounded semantics has not been given, and this has led to definitions of bounded semantics of temporal logics that may not be appropriate with respect to the potential usefulness as a basis for developing bounded model checking approaches. On the other side, the research effort on bounded semantics has mainly focused on existentially interpreted fragments of temporal logics, due to the intricacy of defining appropriate bounded semantics for universally interpreted fragments, or for temporal logics with path quantifiers that are closed under negation. This work addresses these two problems, by defining the characteristics of bounded semantics for clarifying the concept of bounded semantics, and presenting a bounded semantics for the full set of CTL, a logic closed under negation, including possibility for specifying both existential and universal properties.

Keywords: formal methods; formal semantics; temporal logics; model checking; program correctness
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