Software Engineering Seminar

Study on Real-Time Model Checkers

Description

Model checking is a computer-assisted verification method. In order to perform verification, the system specification is translated to a temporal-logic formula and the system description is translated to a system model. One of the famous real-time model checkers is UPPAAL [1]. Recently, the qualitative model checker NuXMV [2] has been extended to support timed transition systems and temporal properties [3]. Both these model checkers have their own advantage and disadvantage. For instance, NuXMV extends LTL logic to represent linear timed properties MTL logic while, UPPAAL supports branching logic TCTL. Therefore, NuXMV is not suitable for verifying branching time logic.

The student should provide an overview of the real-time model checker NuXMV and UPPAAL, investigate their potentials and discuss the inference.

References


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