The Challenge

Feasibility analysis of a real-time system is the process of determining whether the system can be scheduled to meet its temporal requirements. In order to be able to build better automated tools for constructing complex real-time application systems, we must first clearly understand what factors are responsible for rendering certain systems feasible and others infeasible. This research is aimed at enhancing our understanding of the phenomenon of feasibility in real-time systems, by providing a firm theoretical foundation to the analysis of feasibility in real-time systems.

The Approach

Our approach has been to:

• Develop a generic framework for the feasibility-analysis of real-time systems, through the identification of “worst-case behavior”.

• Design new abstract models of real-time tasks to accurately capture salient features of real-life application systems, and identify rules for mapping application systems onto the most appropriate models.

• Analyze various task models in order to enhance our understanding of what intrinsic properties render a model intractable from a feasibility analysis point of view, and to identify very general classes of tractable models.

• Determine alternate methods of analysis for task models for which feasibility-analysis is provably intractable.

Selected Publications


For More Information

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