عنوان مقاله:

ILP Approach for Periodic Dependent Tasks in Multicore Mixed-criticality systems

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خلاصه مقاله:

Today, the desire to use mixed-critical systems in the industry is increasing. In order to provide the processing power required by mixed-critical systems, multi-core architectures are considered a suitable option. One of the main challenges in mixed-critical systems is task scheduling, which is even more challenging in multi-core architectures. Many studies of task scheduling in mixed-critical multi-core systems have dealt with the scheduling of independent tasks. But in many real systems, tasks are dependent on each other. In this research, we will deal with the scheduling of dependent periodic tasks in mixed-critical multi-core systems in such a way that the presented schedule satisfies the system constraints. The proposed algorithm provides the best possible schedule using linear programming. The results of the experiments showed that the presented method has been able to significantly reduce the number of preemptions while maintaining the scheduling capability.

کلمات کلیدی:

Embedded system, Real-Time, integer linear programming