Abstract

The design of a real-time system revolves heavily around a model known as a task schedule, which allots computational resources to executing tasks, i.e. programs. Many different scheduling algorithms have been invented, all of which depend on a set of temporal properties relevant to each task. One such property is the Worst Case Execution Time (WCET), intuitively described as the longest possible execution time. It is required to determine variation in execution times. If the variation is bounded then the system has time predictable behavior. Otherwise, we cannot provide any guarantees for the worst case execution time and the architecture is time unpredictable. Embedded controllers are expected to finish their tasks reliably within time bounds. Task scheduling must be performed essential: upper bound on the execution times of all tasks statically known. Commonly called the Worst-Case Execution Time (WCET). To use the GPUs in real time systems it is required to have time predictable behavior. However, it is hard to give an estimation of the WCET of a GPU program.

In this paper, we focused on comparative analysis of various WCET estimate techniques with
their results evaluations as well as observations.

References

Index Terms

Computer Science

Applied Mathematics

Keywords

WCET, IPG, ETP, Static Analysis, Hybrid Analysis, GPU.