Abstract

In 1970’s, Gordon Moore perceived that the number of transistors in a processor would double after every 18 months. With the addition of more transistors on a single-chip, a processor’s energy consumption increases exponentially. The solution to this problem is heterogeneous processors and machines. Heterogeneous machine is the combination of CPU and GPU platforms. Computer architecture is shifting from multi-core to heterogeneous era. Generally, computer architects practice of software simulation to model and analyze their ideas. Today, computer architects are using cycle-level simulators to discover and analyze new processor designs. To search the heterogeneous system design-space, we review and practically analyze heterogeneous simulators and their performance. In this study, we present a detailed comparative analysis of gem5-gpu, gem5, and multi2sim simulators.


**Index Terms**

Computer Science  
Information Sciences

**Keywords**

Heterogeneous simulators, gem5-gpu, gem5, multi2sim.