

*The University of Alabama
Department of Computer Science
Colloquium Series Speaker*

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Intel

"Computation Models for Emerging Multicore Systems"

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11:00 AM in HO 108

Abstract

A few weeks ago, Intel Corporation announced an 80 core processor on the horizon. The ramp-up to large scale cores started with Intel shipping the quad core processors. In a similar time frame, AMD has announced what has been dubbed as a "4x4" quad core processor.

Simultaneously, General Purpose Computing on Graphics Processing Units (GPGPU) have become mainstream. They seem to be delivering better performance than CPU's in many cases. Any new high performing system cannot afford to ignore the features of the GPU's that are delivering such high performances. AMD has publicly talked about integrating the Graphics core with the CPU cores in their "Fusion Processor."

Given these circumstances, we investigate what the emerging multicore systems will likely look like, their architecture and the demands it will place on the system software and the programmers. Peripherally, we will also look at the market conditions that are driving the evolution of these systems.

In particular, we will look at the Architecture of the GPU's and their unique features that could potentially be moved to a general purpose processor, what challenges that will pose to the Architects, Systems Software Engineers and eventually to the programmers writing high performance code for such systems.