RAPIDMIND

RapidMind for
IMAGE PROCESSING

Building Applications for Image Processing

Multi-core Development Made Simple

Digital content creation involves the need to perform a variety of sophisticated image and video processing functions, including custom algorithms and operations. For large image resolutions and long image sequences, image processing typically requires a large number of processors and long execution times. This demonstration shows a simple application that combines a variety of image processing operations and applies them to various images and video. The development of this image processing application using RapidMind was as simple as single-threaded, single-core processing, yet achieves 10x the performance on 8 cores.

Image processing is only one example of the wide variety of digital media applications that can leverage RapidMind's programmability, portability and performance. Whether you are processing geometry, reconstructing volume data, or rendering images, RapidMind can make your applications flourish on the latest and greatest processors.

By leveraging the RapidMind Multi-core Development Platform, applications can harness the full potential of the latest multi-core processors from Intel and AMD as well as seamlessly take advantage of the application acceleration available in today's stream processors such as the GPU or the Cell BE.

With RapidMind, software developers focus on the algorithms to best drive innovation in their application and the RapidMind platform provides the cutting edge performance promised by these new processors. The resulting applications is hardware independent and will automatically scale to additional cores and future multi-core processors.

Digital Image Processing

In this demonstration the images and video can be manipulated with various standard operations. Image processing is often performed in a pipeline with several operations following one another. Fusing these passes into one can lead to major speedups. This is straight forward using RapidMind's simple yet powerful operations on programs.

RapidMind not only enables full use of all cores on a given machine, transparently to the application, it also makes direct use of the latest features such as Streaming SIMD Extensions 3 (SSE3) and Supplemental Streaming SIMD Extensions 3 (SSSE3) available on the Intel Core Microarchitecture within Intel Core 2 processors. Like most types of computations, image processing operations can benefit from significant performance increases taking advantage of these instructions.

About RapidMind

Visit http://www.rapidmind.com or email info@rapidmind.com for more information.