<<OpenCL编程指南>>

图书基本信息

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内容概要

新的OpenCL标准有助于充分利用CPU、GPU等处理器的丰富资源，已获得Apple、AMD、Intel、IBM等公司的认可，在服务器、嵌入式设备、高性能计算等领域有广阔的应用前景。

《OpenCL编程指南》由OpenCL的五大技术权威共同撰写，内容涵盖完整的规范。
在分析关键用户案例的基础上，说明了如何用OpenCL表示各类并行算法，并且提供了完整的API和OpenCLC语言的参考信息。
通过完整的案例学习和代码示例，讲解了编写复杂并行程序的方法，实现在众多不同设备间分解工作量，还介绍了OpenCL软件性能优化的要点。

《OpenCL编程指南》是第一本针对OpenCL1.1规范的全面、权威的实践指南，适合信息技术领域的研发人员和软件架构师阅读参考。

作者简介

无

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章节摘录

版权页： 插图： The solution to this problem is for the program object to be built from source at runtime.The host program defines the devices within the context.Only at that point is it possible to know how to compile the program source code to create the code for the kernels.As for the source code itself,OpenCL is quite flexible about the form.In many cases,it is a regular string either statically defined in the host program,loaded from a file at runtime,or dynamically generated inside the host program. Our context now includes OpenCL devices and a program object from which the kernels are pulled for execution.Next we consider how the kernels interact with memory.The detailed memory model used by OpenCL will be described later.For the sake of our discussion of the context,we need to understand how the OpenCL memory works only at a high level.The crux of the matter is that on a heterogeneous platform,there are often multiple address spaces to manage.The host has the familiar address space expected on a CPU platform,but the devices may have a range of different memory architectures.To deal with this situation,OpenCL introduces the idea of memory objects.These are explicitly defined on the host and explicitly moved between the host and the OpenCL devices.This does put an extra burden on the programmer,but it lets us support a much wider range of platforms.We now understand the context within an OpenCL application.The context is the OpenCL devices,program objects,kernels,and memory objects that a kernel uses when it executes.Now we can move on to how the host program issues commands to the OpenCL devices. Command-Queues The interaction between the host and the OpenCL devices occurs through commands posted by the host to the command-queue.These commands wait in the command-queue until they execute on the OpenCL device.A command-queue is created by the host and attached to a single OpenCL device after the context has been defined.

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编辑推荐

《国外信息科学与技术优秀图书系列:OpenCL编程指南(英文版)》针对最新的OpenCL1.1规范进行编写。
由OpenCL技术领域的五大权威共同撰写，内容全面，涵盖完整的规范。
提供大量的用户案例和代码示例，详尽完整的API和OpenCL C语言参考，具有很强的实用价值和参考价值。

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