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Autore	Shortal Joseph Adams <1908->
Titolo	Preliminary stability and control tests in the NACA free-flight wind tunnel and correlation with full-scale flight tests / / by Joseph A. Shortal and Clayton J. Osterhout
Pubbl/distr/stampa	Washington, [D.C.] : , : National Advisory Committee for Aeronautics, , 1941
Descrizione fisica	1 online resource (19 pages, 10 unnumbered pages) : illustrations
Collana	Technical note / National Advisory Committee for Aeronautics ; ; no. 810
Soggetti	Airplanes - Control Stability of airplanes Wind tunnel testing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
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2. Record Nr.	UNINA9910786356103321
Titolo	Heterogeneous computing with OpenCL [[electronic resource] /] / Benedict R. Gaster ... [et al.]
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/MK, c2013
ISBN	1-283-71652-6 0-12-405520-6
Edizione	[Rev. OpenCL 1.2 ed.]
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Altri autori (Persone)	GasterBenedict R
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Soggetti	OpenCL (Computer program language) Parallel programming (Computer science)
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Heterogeneous Computing with OpenCL; Copyright; Contents; Foreword to the Revised OpenCL 1.2 Edition; Foreword to the First Edition; Preface; Our Heterogeneous World; OpenCL; This Text; Acknowledgments; About the Authors; Chapter 1: Introduction to Parallel Programming; Introduction; OpenCL; The Goals of This Book; Thinking Parallel; Concurrency and Parallel Programming Models; Threads and Shared Memory; Message-Passing Communication; Different Grains of Parallelism; Data Sharing and Synchronization; Structure; Reference; Further Reading and Relevant Websites Chapter 2: Introduction to OpenCL Introduction; The OpenCL Standard; The OpenCL Specification; Kernels and the OpenCL Execution Model; Platform and Devices; Host-Device Interaction; The Execution Environment; Contexts; Command Queues; Events; Memory Objects; Buffers; Images; Flush and Finish; Creating an OpenCL Program Object; The OpenCL Kernel; Memory Model; Writing Kernels; Full Source Code Example for Vector Addition; Vector Addition with C++ Wrapper; Summary; Reference; Chapter 3: OpenCL Device Architectures; Introduction; Hardware trade-offs Performance Increase by Frequency, and Its Limitations Superscalar Execution; VLIW; SIMD and Vector Processing; Hardware Multithreading; Multi-Core Architectures; Integration: Systems-on-Chip and the APU; Cache Hierarchies and Memory Systems; The architectural design

space; CPU Designs; Low-Power CPUs; Mainstream Desktop CPUs; Intel Itanium 2; Niagara; GPU Architectures; Handheld GPUs; At the High End: AMD Radeon HD7970 and NVIDIA GTX580; APU and APU-Like Designs; Summary; References; Chapter 4: Basic OpenCL Examples; Introduction; Example Applications; Simple Matrix Multiplication Example
Step 1: Set Up Environment Step 2: Declare Buffers and Move Data; Step 3: Run time Kernel Compilation; Step 4: Run the Program; Step 5: Return Results to Host; Image Rotation Example; Step 1: Set Up Environment; Step 2: Declare Buffers and Move Data; Step 3: Run time Kernel Compilation; Step 4: Run the Program; Step 5: Read Result Back to Host; Image Convolution Example; Step 1: Create Image and Buffer Objects; Step 2: Write the Input Data; Step 3: Create Sampler Object; Step 4: Compile and Execute the Kernel; Step 5: Read the Result; The Convolution Kernel; Compiling OpenCL Host Applications
Summary Chapter 5: Understanding OpenCL's Concurrency and Execution Model; Introduction; Kernels, Work-Items, Workgroups, and the Execution Domain; OpenCL Synchronization: Kernels, Fences, and Barriers; Queuing and Global Synchronization; Memory Consistency in OpenCL; Events; Command Queues to Multiple Devices; Event Uses beyond Synchronization; User Events; Event Callbacks; Native Kernels; Command Barriers and Markers; The Host-Side Memory Model; Buffers; Manipulating Buffer Objects; Images; The Device-Side Memory Model; Device-Side Relaxed Consistency; Global Memory; Local Memory Constant Memory

Sommario/riassunto

Heterogeneous Computing with OpenCL teaches OpenCL and parallel programming for complex systems that may include a variety of device architectures: multi-core CPUs, GPUs, and fully-integrated Accelerated Processing Units (APUs) such as AMD Fusion technology. Designed to work on multiple platforms and with wide industry support, OpenCL will help you more effectively program for a heterogeneous future. Written by leaders in the parallel computing and OpenCL communities, this book will give you hands-on OpenCL experience to address a range of fundamental parallel algorithms. The
