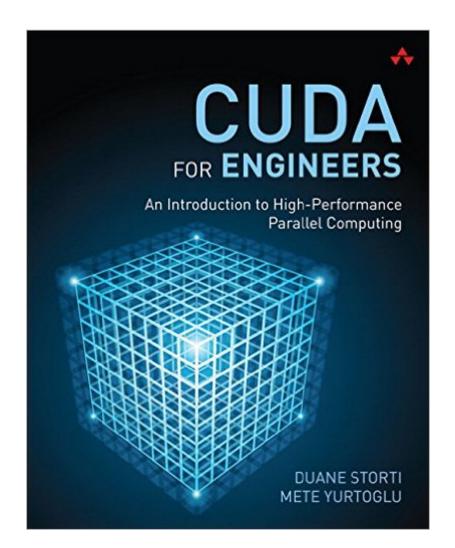
The book was found

# CUDA For Engineers: An Introduction To High-Performance Parallel Computing





## Synopsis

CUDA for Engineers gives you direct, hands-on engagement with personal, high-performance parallel computing, enabling you to do computations on a gaming-level PC that would have required a supercomputer just a few years ago. Â The authors introduce the essentials of CUDA C programming clearly and concisely, quickly guiding you from running sample programs to building your own code. Throughout, youâ <sup>™</sup>II learn from complete examples you can build, run, and modify, complemented by additional projects that deepen your understanding. All projects are fully developed, with detailed building instructions for all major platforms. A Ideal for any scientist, engineer, or student with at least introductory programming experience, this guide assumes no specialized background in GPU-based or parallel computing. In an appendix, the authors also present a refresher on C programming for those who need it. A Coverage includes Preparing your computer to run CUDA programs Understanding CUDAâ <sup>™</sup>s parallelism model and C extensions Transferring data between CPU and GPU Managing timing, profiling, error handling, and debugging Creating 2D grids Interoperating with OpenGL to provide real-time user interactivity Performing basic simulations with differential equations Using stencils to manage related computations across threads Exploiting CUDAâ <sup>TM</sup>s shared memory capability to enhance performance Interacting with 3D data: slicing, volume rendering, and ray casting Using CUDA libraries Finding more CUDA resources and code Realistic example applications include Visualizing functions in 2D and 3D Solving differential equations while changing initial or boundary conditions Viewing/processing images or image stacks Computing inner products and centroids Solving systems of linear algebraic equations Monte-Carlo computations Â

### **Book Information**

Paperback: 352 pages Publisher: Addison-Wesley Professional; 1 edition (November 12, 2015) Language: English ISBN-10: 013417741X ISBN-13: 978-0134177410 Product Dimensions: 7.3 x 0.9 x 9.1 inches Shipping Weight: 1.3 pounds (View shipping rates and policies) Average Customer Review: 4.6 out of 5 stars Â See all reviews (5 customer reviews) Best Sellers Rank: #167,503 in Books (See Top 100 in Books) #15 in Books > Computers & Technology > Programming > Parallel Programming #221 in Books > Textbooks > Computer Science > Graphics & Visualization #302 in Books > Computers & Technology > Programming > Graphics & Multimedia

#### **Customer Reviews**

This is an outstanding, relevant and timely text. However, the real guestion is: for the price, how does it compare to the plethora of FREE materials online from NVIDIA?First, registration and access to the online supplements from Addison at informit dot com is a MUST. As anyone knows who has mastered a new language, "wash on, wash off" (intense, repeated skill practice) is a must, and the steps to proficiency (especially if you know some C or  $C_{++}$ ), are really here with the online examples in addition to those in the book. On relevance, the battle between GPU and CPU supercomputing/ hpc is hardly over, regardless of IBM and Intel "flooring" the processing Ferrari with new GPU competitors. Just look at DOD buying truckloads of gaming platforms lately (including gaming systems, not just Alienware!) to pull and wire the GPUs into workstation HPCs. Buyers have to decide if the GPU phenomenon will last the next 10 years in HPC, but NVIDIA is investing SO much in this community that even hybrid CPU/GPUs like the old math co-processor dance and integration will NOT obviate you getting into this now, even if your career is just starting. I teach HPC online, but more from the circuit/CPU/GPU side than code, so my students are more C types from that point of view. Even so, if you don't have access to Argonne, Los Alamos or NOAA, this text clearly gives you the skills to work at differential equation level on gaming workstations, which is enough to get your projects to the stage of sharing time on the bigger machines. The text covers all the topics you need, in fine fashion, to understand the GPU angle of HPC, without making it so specific that it won't help your overall HPC skills.

#### Download to continue reading...

CUDA for Engineers: An Introduction to High-Performance Parallel Computing CUDA Programming: A Developer's Guide to Parallel Computing with GPUs (Applications of Gpu Computing) Introduction to Parallel Computing: Design and Analysis of Parallel Algorithms Parallel Scientific Computing in C++ and MPI: A Seamless Approach to Parallel Algorithms and their Implementation Network Performance and Optimization Guide: The Essential Network Performance Guide For CCNA, CCNP and CCIE Engineers (Design Series) Physics for Scientists and Engineers with Modern Physics: Volume II (3rd Edition) (Physics for Scientists & Engineers) Physics for Scientists and Engineers, Vol. 1: Mechanics, Oscillations and Waves, Thermodynamics (Physics for Scientists & Engineers, Chapters 1-21) High Performance Web Sites: Essential Knowledge for Front-End Engineers Introduction to Evolutionary Computing (Natural Computing Series) CUDA by Example: An Introduction to General-Purpose GPU Programming Parallel Programming: Techniques and Applications Using Networked Workstations and Parallel Computers (2nd Edition) Parallel Programming with Intel Parallel Studio XE Short Stories in Spanish: New Penguin Parallel Text (New Penguin Parallel Texts) (Spanish and English Edition) Learn German: Parallel Text - Easy, Funny Stories (German - English) - Bilingual (Learning German with Parallel Text Book 1) Learn German III: Parallel Text - Easy Stories (German - English) Bilingual - Dual Language (Learning German with Parallel Text 3) (German Edition) High Temperature Gas Dynamics: An Introduction for Physicists and Engineers Software Optimization for High Performance Computing: Creating Faster Applications High Performance Computing (RISC Architectures, Optimization & Benchmarks) Programming Massively Parallel Processors: A Hands-on Approach (Applications of GPU Computing Series) Big CPU, Big Data: Solving the World's Toughest Computational Problems with Parallel Computing

<u>Dmca</u>