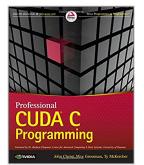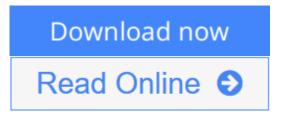# Professional CUDA C Programming

By John Cheng, Max Grossman, Ty McKercher

Professional CUDA C Programming By John Cheng, Max Grossman, Ty McKercher

Break into the powerful world of parallel GPU programming with this down-to-earth, practical guide

Designed for professionals across multiple industrial sectors, *Professional CUDA C Programming* presents CUDA -- a parallel computing platform and programming model designed to ease the development of GPU programming -- fundamentals in an easy-to-follow format, and teaches readers how to think in parallel and implement parallel algorithms on GPUs. Each chapter covers a specific topic, and includes workable examples that demonstrate the development process, allowing readers to explore both the "hard" and "soft" aspects of GPU programming.

Computing architectures are experiencing a fundamental shift toward scalable parallel computing motivated by application requirements in industry and science. This book demonstrates the challenges of efficiently utilizing compute resources at peak performance, presents modern techniques for tackling these challenges, while increasing accessibility for professionals who are not necessarily parallel programming experts. The CUDA programming model and tools empower developers to write high-performance applications on a scalable, parallel computing platform: the GPU. However, CUDA itself can be difficult to learn without extensive programming experience. Recognized CUDA authorities John Cheng, Max Grossman, and Ty McKercher guide readers through essential GPU programming skills and best practices in *Professional CUDA C Programming*, including:

- CUDA Programming Model
- GPU Execution Model
- GPU Memory model
- Streams, Event and Concurrency
- Multi-GPU Programming
- CUDA Domain-Specific Libraries
- Profiling and Performance Tuning

The book makes complex CUDA concepts easy to understand for anyone with knowledge of basic software development with exercises designed to be both

readable and high-performance. For the professional seeking entrance to parallel computing and the high-performance computing community, *Professional CUDA C Programming* is an invaluable resource, with the most current information available on the market.

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