Multi-core processors are no longer the future of computing—they are the present day reality. A typical mass-produced CPU features multiple processor cores, while a GPU (Graphics Processing Unit) may have hundreds or even thousands of cores. With the rise of multi-core architectures has come the need to teach advanced programmers a new and essential skill: how to program massively parallel processors.

Programming Massively Parallel Processors: A Hands-on Approach shows both student and professional alike the basic concepts of parallel programming and GPU architecture. Various techniques for constructing parallel programs are explored in detail. Case studies demonstrate the development process, which begins with computational thinking and ends with effective and efficient parallel programs.

Teaches computational thinking and problem-solving techniques that facilitate high-performance parallel computing. Utilizes CUDA (Compute Unified Device Architecture), NVIDIA’s software development tool created specifically for massively parallel environments. Shows you how to achieve both high-performance and high-reliability using the CUDA programming model as well as OpenCL.

My Personal Review:
This book is a much better introduction to programming GPUs via CUDA than CUDA manual, or some presentation floating on the web. It is a little
odd in coverage and language. You can tell it is written by two people with different command of English as well as passion. One co-author seems to be trying very hard to be colorful and looking for idiot-proof analogies but is prone to repetition. The other co-author sounds like a dry marketing droid sometimes. There are some mistakes in the codes in the book, but not too many since they don't dwell too long on code listings. In terms of coverage, I wish they'd cover texture memories, profiling tools, examples beyond simple matrix multiplication, and advice on computational thinking for codes with random access patterns. Chapters 6, 8, 9, and 10 are worth reading several times as they are full of practical tricks to use to trade one performance limiter for another in the quest for higher performance.

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