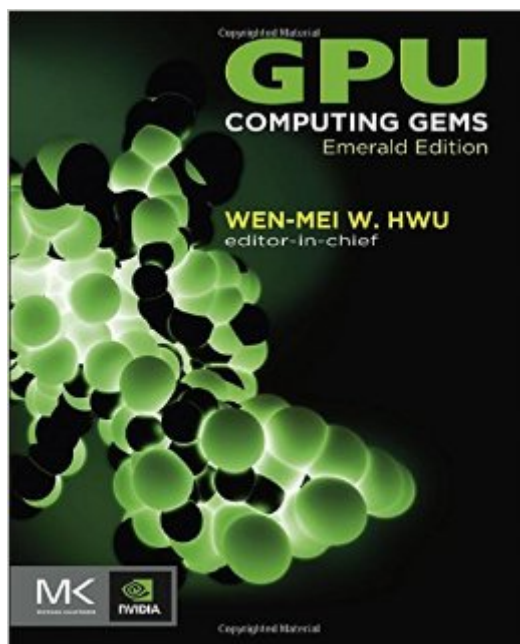


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# GPU Computing Gems Emerald Edition (Applications Of GPU Computing Series)



## Synopsis

"...the perfect companion to Programming Massively Parallel Processors by Hwu & Kirk." -Nicolas Pinto, Research Scientist at Harvard & MIT, NVIDIA Fellow 2009-2010 Graphics processing units (GPUs) can do much more than render graphics. Scientists and researchers increasingly look to GPUs to improve the efficiency and performance of computationally-intensive experiments across a range of disciplines. GPU Computing Gems: Emerald Edition brings their techniques to you, showcasing GPU-based solutions including: Black hole simulations with CUDAGPU-accelerated computation and interactive display of molecular orbitals Temporal data mining for neuroscience GPU -based parallelization for fast circuit optimization Fast graph cuts for computer vision Real-time stereo on GPGPU using progressive multi-resolution adaptive windows GPU image demosaicing Tomographic image reconstruction from unordered lines with CUDAMedical image processing using GPU -accelerated ITK image filters 41 more chapters of innovative GPU computing ideas, written to be accessible to researchers from any domain GPU Computing Gems: Emerald Edition is the first volume in Morgan Kaufmann's Applications of GPU Computing Series, offering the latest insights and research in computer vision, electronic design automation, emerging data-intensive applications, life sciences, medical imaging, ray tracing and rendering, scientific simulation, signal and audio processing, statistical modeling, and video / image processing. Covers the breadth of industry from scientific simulation and electronic design automation to audio / video processing, medical imaging, computer vision, and more Many examples leverage NVIDIA's CUDA parallel computing architecture, the most widely-adopted massively parallel programming solution Offers insights and ideas as well as practical "hands-on" skills you can immediately put to use

## Book Information

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## Customer Reviews

I have been donating spare cycles to Folding@Home. I have a 4 way Intel, and a NVidia graphics card, and the NVidia card outperforms the main computer engine by far in churning out the floating point calculations Folding@Home wants... So I had been interested in what was available. NVIDIA has a toolkit out that allows you to access the CPUs on the graphics card. The toolkit is called CUDA. I'm a retired programmer with 30 years of programming experience. While I don't work hard, these days, I like to keep my hand in, keep up with technology. And it seemed that the floating point processing power that was available in the GPU had to be looked at. It seemed serendipitous that this book became available from Vines just as I was looking at CUDA and the power of the GPU. Now, when I was a young (19 year old) programmer, someone gave me an enormous scheduling problem to do. A hundred students had to be assigned to discussion groups. Each student was available at some times and not at others (they might be in class, for example). They were male and female and it was imperative that the sexual balance of the group be respected. Study groups had to end up with 4-8 people, if too few or too many, try again using another choice set. The student's numbers, requested discussion group numbers, and sex were punched onto cards. I wrote a FORTRAN program (it was 1970) that read the cards into an array (as few bytes per student as possible) and started traversing the problem set. And it was taking a very long time.

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