



GPU Gems: Programming Techniques, Tips and Tricks for Real-Time Graphics

By Randima Fernando (Series Editor)

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GPU Gems: Programming Techniques, Tips and Tricks for Real-Time Graphics By Randima Fernando (Series Editor) Bibliography

- Sales Rank: #1157471 in Books
- Published on: 2004-04-01
- Ingredients: Example Ingredients
- Original language: English
- Number of items: 1
- Dimensions: 9.50" h x 1.40" w x 7.62" l, 3.15 pounds
- Binding: Hardcover
- 816 pages



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Editorial Review

From the Back Cover

"This collection of articles is particularly impressive for its depth and breadth. The book includes product-oriented case studies, previously unpublished state-of-the-art research, comprehensive tutorials, and extensive code samples and demos throughout."

--Eric Haines, Author of *Real-Time Rendering* "*GPU Gems* is a cool toolbox of advanced graphics techniques. Novice programmers and graphics gurus alike will find the Gems practical, intriguing and useful."

--Tim Sweeney, Lead Programmer of Unreal at Epic Games

GPU Gems is a compilation of articles covering practical real-time graphics techniques arising from the research and practice of cutting edge developers. It focuses on the programmable graphics pipeline available in today's graphics processing units (GPUs) and highlights quick and dirty tricks used by leading developers, as well as fundamental, performance-conscious techniques for creating advanced visual effects. The contributors and editors, collectively, bring countless years of experience to enlighten and propel the reader into the fascinating world of programmable real-time graphics.

Major topics covered include:

University of Waterloo The accompanying CD-ROM includes complimentary examples and sample programs.

About the Author

Randima (Randy) Fernando is Manager of Developer Education at NVIDIA.

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This book is an extensive and practical collection of articles about real-time computer graphics, accumulating the knowledge and experience of experts in both industry and academia. Building, in the same style, upon the wealth of the great "Gems" books already available, *GPU Gems* is a collection of short chapters. However, a number of key characteristics make this book unique and valuable to today's developers as they attempt to harness the ever-increasing power of the graphics processing unit (GPU). First and foremost, this book focuses squarely on real-time programmable graphics--specifically, on techniques relevant to GPUs. Each chapter was carefully selected to present ideas and techniques that are directly useful in interactive applications, such as computer games. The chapters provide insight and understanding, rather than focusing on low-level API calls or specific mathematical tricks. Furthermore, each chapter is packed with numerous full-color diagrams and images to illustrate and drive home key concepts. Finally, the experience and diversity of the contributors help readers gain a broad understanding, as well as a certain confidence that the advice they are getting comes from experts in the field. NVIDIA's strongest asset is its people: the depth and quality of their collective expertise inspired the initial idea for *GPU Gems*. With so much knowledge and expertise at hand, we felt that the thoughts and insights of the teams that brought us many recent advances in real-time graphics would make for a wonderfully instructive book. So, we started the project with an internal call for participation. Having the good fortune to work with people from leading game development houses, tool developers, film studios, and academic institutions who are shaping the

future of real-time computer graphics, we also wanted to highlight their real-world contributions in *GPU Gems*. Hence, a wider, public call for participation allowed us to coalesce a great amount of talent and refreshing perspective into this volume. Whether you're creating new effects, architecting a graphics engine, or squeezing out the last bits of performance, we hope that this book provides valuable guidance and saves you from some of the challenges the authors faced on their own projects. All of us who worked on *GPU Gems* hope that it will help you to adopt new ideas and take your projects to the next level of graphical realism.

Our Intended Audience This book provides intermediate and advanced readers with useful information that will help them in their projects. Focusing beyond the fundamentals of high-level shading, *GPU Gems* looks at how to take existing projects further by removing the mystery behind complex effects and advanced GPU programming. With the rapid evolution of real-time shading languages, the collection of algorithms available to real-time graphics developers is larger than ever. By compiling and distributing the information in this book, our goal is to make high-quality, high-performance graphics more accessible to a wider audience that includes game developers, technical directors, professors, and students.

Trying the Examples Many of the chapters in this book include code samples to make their subject matter more concrete. The authors used whichever shading language they wanted, so the code samples ended up in DirectX 9's High-Level Shader Language (HLSL) or Cg, which were the only two high-level shading languages widely in use during this project. Almost everything that is presented can be applied to either language, as well as to languages that came later, such as the OpenGL Shading Language. The code samples are available on the CD that accompanies this book, along with standalone examples wherever possible. This makes it easy for you to integrate or experiment with the various examples. Updated sample code, as well as additional supplementary materials, is available at the book's Web site: <http://developer.nvidia.com/GPUGems/>.

Randima (Randy) Fernando

NVIDIA Corporation

Users Review **From reader reviews:**

Jeffrey Martinez: Now a day people who Living in the era everywhere everything reachable by talk with the internet and the resources inside can be true or not require people to be aware of each data they get. How individuals to be smart in receiving any information nowadays? Of course the answer is reading a book. Reading through a book can help persons out of this uncertainty Information mainly this GPU Gems: Programming Techniques, Tips and Tricks for Real-Time Graphics book because this book offers you rich data and knowledge. Of course the data in this book hundred pct guarantees there is no doubt in it you probably know this.

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Sean Jones: The reason why? Because this GPU Gems: Programming Techniques, Tips and Tricks for Real-Time Graphics is an unordinary book that the inside of the book waiting for you to snap this but latter it will surprise you with the secret the idea inside. Reading this book next to it was fantastic author who have write the book in such remarkable way makes the content inside of easier to understand, entertaining means but still convey the meaning fully. So , it is good for you because of not hesitating having this ever again or you going to regret it. This phenomenal book will give you a lot of advantages than the other book have got such as help improving your proficiency and your critical thinking way. So , still want to hesitate having that book? If I were you I will go to the reserve store hurriedly.

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