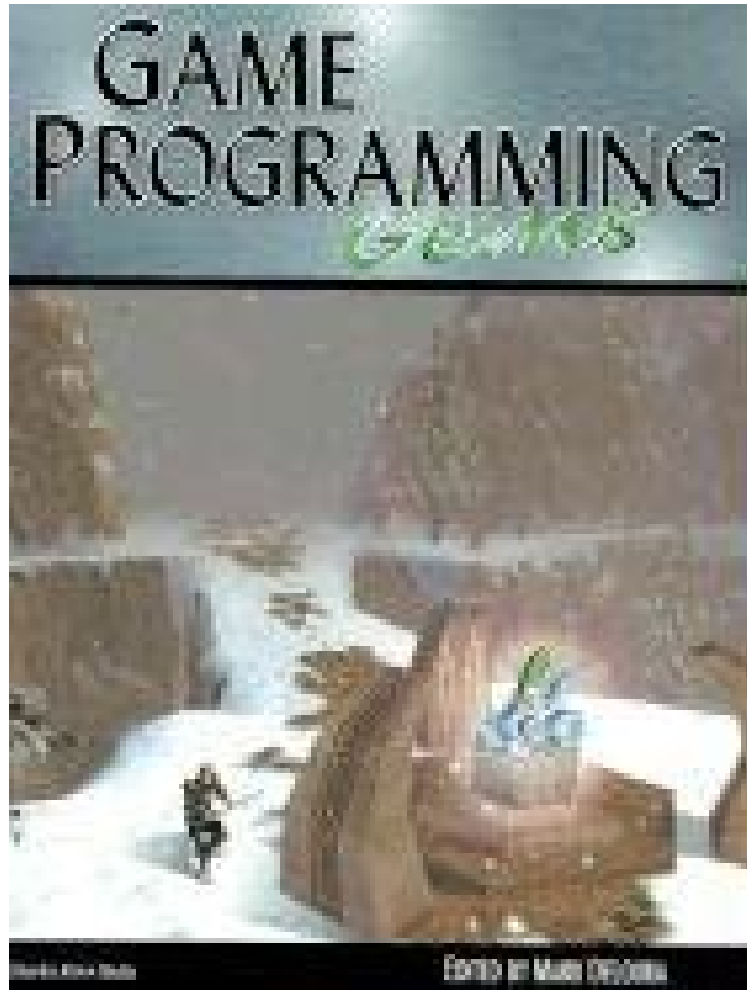


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Game Programming Gems (Game Programming Gems (W/CD))

Mark DeLoura

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Mark DeLoura : Game Programming Gems (Game Programming Gems (W/CD)) before purchasing it in order to gage whether or not it would be worth my time, and all praised Game Programming Gems (Game Programming Gems (W/CD)):

1 of 1 people found the following review helpful. Great game programming book!By Andrew PapeThe book is comprised of five sections, each containing many short articles, usually written by different authors, and each article contains references. The book assumes that you are familiar with c++, or c at the minimum, and the examples are all written in these languages. Also, the graphics library supported by the book is OpenGL, not DirectX. If you are new to c or c++ and haven't done any game programming, then this book will be too advanced for you. The code is suitable for both Windows and Linux platforms.The first section of the book discusses object-oriented design and often refers to "design patterns". Since I hadn't heard of them, and programmed my own way, there was much to learn. This is where the book's references help. If you aren't an expert at c++ programming, I suggest you read the references,

namely "Effective c++", "More Effective c++" (both by Scott Meyers), and also the book on design patterns mentioned: "Design Patterns" by Gamma et. al. To make the most of the STL section, you could do with a book on STL also. The chapter on bit-arrays is especially good for compression and decompression code, preventing you from having to perform tricky bit operations. The profiling section is good because it shows how to profile with your own code, rather than relying on having a compiler to profile for you. That's just two example chapters in this section. The second section of the book is about Maths. To me, the articles are too complex given how short they are. To understand them, you need university-level Maths and understand summing notation, vectors, matrices, differentiation, and integrals. I've only done First Year university Maths, and found myself out of my depth in this section. The third section is about Artificial Intelligence. This section covers finite state machines (useful in any game), game trees (used by the computer opponent to defeat the human player in games such as chess and checkers), as well as search techniques, how to make enemies flock, and fuzzy logic. The fourth section is about polygonal techniques, which are mainly used for 3D games. The book's code for 3D games is written with OpenGL in mind. I am mostly interested in 2D game design, so I haven't read all the chapters of this section. But there's an interesting chapter that shows you how to generate smooth curves given a set of control points. This is great for making an enemy move along a curve rather than in a straight line, so you can apply it to 2D game design. The final section has a chapter on using 3D hardware for 2D sprite effects (with OpenGL). This is exactly what I needed to know. It was my favourite article because it solved my immediate problem, the answer to which I couldn't find after exhaustive web searches. This book isn't just for 3D game creation; it shows how to use OpenGL for 2D games. This way you can get the benefits of sprite scaling and rotation in a 2D game. The accompanying CD has the full source code to the articles, which is required because many chapters only contain code snippets with the text. Overall, this is a great book. It is big and comprehensive. It's better than a single-author book because you're not stuck in his particular mindset. Plus you can pick up the book and quickly read a chapter, and it's usually not necessary to read the chapters in order. The disadvantage is that some of the chapters may not interest you, but there's plenty that will interest you, as the book has a large number of articles, and the book size is 600 pages. The book is well-balanced in that it doesn't contain too much theory, nor too little, and it contains practical examples and utilities that you can readily use. Anyone with c++ knowledge and an interest in programming games should buy this book. If your c++ skills aren't too sharp, you will want to buy some of the referenced books. I look forward to reading the other books in the series.

59 of 61 people found the following review helpful. A First-Of-Its-Kind Introduction to Game Programming By Paul D. Tozour This book is hands-down the best book yet published on game programming. I have yet to find any other book that begins to approach the excellence of Game Programming Gems in terms of the breadth and depth of the subjects covered. GPG will serve as an excellent introduction to a broad variety of game programming techniques for those new to the industry, and an invaluable desk reference and for more experienced game developers. As a 7-year industry veteran, I can't count the number of times the techniques in this book would have proven useful in the past. Of particular interest are Steve Rabin's excellent chapters on the A* algorithm, the cornerstone of (most) pathfinding in computer games. These chapters go far beyond the explanation of the algorithm itself and serve up a host of rare and valuable insights for getting the most out of your pathfinding in an actual game environment. I have no doubt that this book will have a significant impact on the state of the art in the game development community, and one can only hope that this book is only a hint of what's to come.

1 of 1 people found the following review helpful. I heard it was a good book. I've only skimmed through it By Nick Jagger Got what I needed. I heard it was a good book. I've only skimmed through it. I like it so far.

For the countless tasks involved in creating a game engine there are an equal number of possible solutions. But instead of spending hours and hours trying to develop your own answers, now you can find out how the pros do it! Game Programming Gems is a hands-on, comprehensive resource packed with a variety of game programming algorithms written by experts from the game industry and edited by Mark DeLoura, former software engineering lead for Nintendo of America, Inc. and now the newly appointed editor-in-chief of Game Developer magazine. From animation and artificial intelligence to Z-buffering, lighting calculations, weather effects, curved surfaces, multiple layer Internet gaming, to music and sound effects, all of the major techniques needed to develop a competitive game engine are covered. Game Programming Gems is written in a style accessible to individuals with a range of expertise levels. All of the source code for each algorithm is included and can be used by advanced programmers immediately. For aspiring programmers, there is a detailed tutorial to work through before attempting the code, and suggestions for possible modifications and optimizations are included as well.

.com Aimed at the working (or aspiring) Visual C/C++ game programmer, Game Programming Gems contains over 60 programming tips that have been gathered from more than 40 working game gurus. If you want to build your own games or are interested simply in how games work, this text provides an intriguing glimpse into how the pros create state-of-the-art 3-D animation. The guiding principle in this book is to publish the best available tips for game programming; most of these fit into 10 pages or fewer. But don't let the efficient presentation fool you; almost every one of these tips will be invaluable to any serious game developer. Early sections concentrate on techniques for

creating more maintainable, faster code. A guide to using scripts for data-driven game modules and techniques teaches you better resource management (like using handles). A quick-start tutorial to the Standard Template Library (STL) will help you learn how to use these fast collection classes in your code right away. Several contributors show off strategies for better game debugging and profiling--there's even a set of classes that can provide onscreen feedback during testing. The mathematical underpinnings that are required to do leading-edge 3-D graphics processing--including the use of quaternions, instead of matrices, in certain calculations--also are discussed. (One section looks at simulating water surfaces.) And artificial intelligence (AI) techniques for games--like Finite State Machines (FSMs), fuzzy logic, and neural networks--are explained. (The extremely cool flocking algorithms, which will let you add the behavior of birds or fish to your next game level, are especially appealing.) Over 20 techniques for doing work with polygons (a staple of representing 3-D virtual worlds) are laid out, too. You'll learn a variety of important concepts, such as collision detection, working with key frames, better skinning for character animation, and realistic terrain generation (including fractals). A discussion of pixel effects, with some cutting-edge ways to add more realistic lighting and shadows to your games, closes the discussion. (One of the more exciting sections shows you how to simulate glass objects within 3-D scenes.) With its leading-edge material on the algorithms that are used by the competition, *Game Programming Gems* will be a virtual must-read for anyone who works in the game industry. With code samples that are geared to OpenGL and that should run on both Windows and Linux, this book will help developers hone their game-programming skills.

--Richard Dragan

Topics covered:

- Tips and strategies for game developers
- Data-driven design and scripting languages
- Object-oriented design primer
- Using Visual C++ templates for faster math calculations
- Resource-management techniques (Singleton patterns, resource handles, and tips for fast data loads)
- The C++ Standard Template Library (STL) for games
- Bit arrays
- Network protocols for online games
- Using asserts and profiling for games
- Random numbers
- Interpolation methods
- Equations for rigid body motion
- Using polynomial approximations for trig functions
- Implicit Euler integration
- Wavelets
- Simulating water surfaces
- Quaternion vs. matrix calculations
- Artificial-intelligence (AI) techniques for gamers
- Sending messages
- Finite State Machines (FSMs)
- Game trees
- Pathing strategies (including A* and 3-D pathing solutions)
- Flocking algorithms
- Introduction to fuzzy logic and neural networks
- Techniques for faster graphics with polygons (and 3-D fundamentals)
- Loading vertices faster into OpenGL
- The vector camera
- Camera-control strategies
- 3-D collision detection
- Multiresolution maps
- Distance calculation
- Object occlusion
- Working with octrees
- Interpolating between 3-D keyframes
- Skinning techniques
- Terrain-generation algorithms (including fractals)
- 2-D lens flare
- 2-D sprite effects with 3-D hardware
- Techniques for more realistic lighting
- Shadows and texturing
- Simulating glass and liquids in games

From the Publisher

Key Features:

- * A must-have for every game programmer's library!
- * Written by Game Programming Experts and edited by Nintendo's Mark DeLoura
- * Comprehensive coverage of all major techniques used in game development
- * CD ROM is packed with the source code in C C++ completely portable to Windows and Linux, and all graphics displays use the popular Open GL language

About the Author

Mark DeLoura is the creator and series editor of the *Game Programming Gems* series of books. In his role as Vice President of Technology for GreenScreen Interactive, Mark focuses on pushing the boundaries of technology for games and making great games more efficiently. Over his 15+ years in the games industry, Mark has served in a variety of technology-related roles at Nintendo, Sony, Ubisoft, *Game Developer* magazine, and as an independent consultant. He is an adamant believer in sharing and reusing technology, and he believes that everyone should be able to make games. He maintains a website at www.satori.org.