



Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology)

By Christer Ericson

Download now

Read Online →

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson

Written by an expert in the game industry, Christer Ericson's new book is a comprehensive guide to the components of efficient real-time collision detection systems. The book provides the tools and know-how needed to implement industrial-strength collision detection for the highly detailed dynamic environments of applications such as 3D games, virtual reality applications, and physical simulators.

Of the many topics covered, a key focus is on spatial and object partitioning through a wide variety of grids, trees, and sorting methods. The author also presents a large collection of intersection and distance tests for both simple and complex geometric shapes. Sections on vector and matrix algebra provide the background for advanced topics such as Voronoi regions, Minkowski sums, and linear and quadratic programming.

Of utmost importance to programmers but rarely discussed in this much detail in other books are the chapters covering numerical and geometric robustness, both essential topics for collision detection systems. Also unique are the chapters discussing how graphics hardware can assist in collision detection computations and on advanced optimization for modern computer architectures. All in all, this comprehensive book will become the industry standard for years to come.

↓ [Download Real-Time Collision Detection \(The Morgan Kaufmann ...pdf](#)

📖 [Read Online Real-Time Collision Detection \(The Morgan Kaufma ...pdf](#)

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology)

By Christer Ericson

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson

Written by an expert in the game industry, Christer Ericson's new book is a comprehensive guide to the components of efficient real-time collision detection systems. The book provides the tools and know-how needed to implement industrial-strength collision detection for the highly detailed dynamic environments of applications such as 3D games, virtual reality applications, and physical simulators.

Of the many topics covered, a key focus is on spatial and object partitioning through a wide variety of grids, trees, and sorting methods. The author also presents a large collection of intersection and distance tests for both simple and complex geometric shapes. Sections on vector and matrix algebra provide the background for advanced topics such as Voronoi regions, Minkowski sums, and linear and quadratic programming.

Of utmost importance to programmers but rarely discussed in this much detail in other books are the chapters covering numerical and geometric robustness, both essential topics for collision detection systems. Also unique are the chapters discussing how graphics hardware can assist in collision detection computations and on advanced optimization for modern computer architectures. All in all, this comprehensive book will become the industry standard for years to come.

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson Bibliography

- Sales Rank: #306869 in Books
- Brand: Brand: CRC Press
- Published on: 2004-12-22
- Original language: English
- Number of items: 1
- Dimensions: 1.30" h x 7.80" w x 9.50" l, 3.06 pounds
- Binding: Hardcover
- 632 pages

 [Download Real-Time Collision Detection \(The Morgan Kaufmann ...pdf](#)

 [Read Online Real-Time Collision Detection \(The Morgan Kaufma ...pdf](#)

Download and Read Free Online **Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology)** By Christer Ericson

Editorial Review

Review

"Accurate and efficient collision detection in complex environments is one of the foundations of today's cutting-edge computer games. Yet collision detection is notoriously difficult to implement robustly and takes up an increasingly large fraction of compute cycles in current game engines as increasingly detailed environments are becoming the norm. **Real-time Collision Detection** is a comprehensive reference on this topic, covering it with both breadth and depth. Not only are the fundamental algorithms explained clearly and in detail, but Ericson's book covers crucial implementation issues, including geometric and numeric robustness and cache-efficient implementations of the algorithms. Together, these make this book a 'must have' practical reference for anyone interested in developing interactive applications with complex environments." -Matt Pharr, NVIDIA

"Christer Ericson's **Real-time Collision Detection** is an excellent resource that covers the fundamentals as well as a broad array of techniques applicable to game development." -Jay Stelly, Valve

"Christer Ericson provides a practical and very accessible treatment of real-time collision detection. This includes a comprehensive set of C++ implementations of a very large number of routines necessary to build such applications in a context which is much broader than just game programming. The programs are well-thought out and the accompanying discussion reveals a deep understanding of the graphics, algorithms, and ease of implementation issues. It will find a welcome home on any graphics programmer's bookshelf although it will most likely not stay there long as others will be constantly borrowing it...." -Hanan Samet, University of Maryland

"**Real-Time Collision Detection** is an excellent resource that every serious engine programmer should have on his bookshelf. Christer Ericson covers an impressive range of techniques and presents them using concise mathematics, insightful figures, and practical code." -Eric Lengyel, Senior Programmer, Naughty Dog

"If you think you already know everything about collision detection, you're in for a surprise! This book not only does an excellent job at presenting all the collision detection methods known to date, it also goes way beyond the standard material thanks to a plethora of juicy, down-to-earth, hard-learned implementation tips and tricks. This produces a perfect blend between theory and practice, illustrated by the right amount of source code in appropriate places. Basically the book just oozes with experience. Christer doesn't forget all the alternative topics that, despite not directly related to collision detection, can ruin your implementation if you don't include them in your design. The chapters on robustness and optimization are priceless in this respect. Its carefully crafted compact kd-tree implementation beautifully concludes a unique book full of luminous gems." -Pierre Terdiman, principal software engineer, NovodeX AG, and writer of the popular collision detection library OPCODE

"When I received a copy of **Real-Time Collision Detection** for review, I was in the midst of redesigning an architectural visualization and lighting design program. The Bounding Volume Hierarchies chapter allowed me to quickly and easily design and implement an efficient ray tracing acceleration scheme. It also provided me with a wealth of information on various design strategies, which gave me the confidence that I had

chosen a near-optimal approach. What one of my clients recently said about the finished software reflects my opinion of this fantastic book: 'Holy cow! Excellent work!'" -Ian Ashdown, byHeart Consultants Limited

From the Back Cover

Written by an expert in the game industry, Christer Ericson's new book is a comprehensive guide to the components of efficient real-time collision detection systems. The book provides the tools and know-how needed to implement industrial-strength collision detection for the highly detailed dynamic environments of applications such as 3D games, virtual reality applications, and physical simulators.

Of the many topics covered, a key focus is on spatial and object partitioning through a wide variety of grids, trees, and sorting methods. The author also presents a large collection of intersection and distance tests for both simple and complex geometric shapes. Sections on vector and matrix algebra provide the background for advanced topics such as Voronoi regions, Minkowski sums, and linear and quadratic programming.

Of utmost importance to programmers but rarely discussed in this much detail in other books are the chapters covering numerical and geometric robustness, both essential topics for collision detection systems. Also unique are the chapters discussing how graphics hardware can assist in collision detection computations and on advanced optimization for modern computer architectures. All in all, this comprehensive book will become the industry standard for years to come.

Features

*Presents algorithms and data structures with wide applications to the fields of game development, virtual reality, physically based simulation, CAD/CAM, architectural and scientific visualization, molecular modeling, engineering simulation, GIS, ray tracing, and more.

*Describes tested, real-world methods, liberally illustrated by C & C++ code.

*Reviews necessary concepts from mathematics and computational geometry, and includes extensive references to other sources and research literature.

About the Author

Christer Ericson is a senior principal programmer and the tools and technology lead at Sony Computer Entertainment America in Santa Monica. Before joining Sony in 1999, he was a senior programmer at Neversoft Entertainment. Christer received his Masters degree in computer science from Umeå University, Sweden, where he also lectured for several years before moving to the US in 1996. Christer has served on the advisory board for Full Sail's Game Design and Development degree program since 2002. His interests are varied, but he takes a particular interest in program optimization, a topic he has spoken on at the Game Developers Conference.

Users Review

From reader reviews:

Marina Rutt:

What do you regarding book? It is not important along? Or just adding material when you need something to explain what the ones you have problem? How about your extra time? Or are you busy man or woman? If you don't have spare time to try and do others business, it is make one feel bored faster. And you have free time? What did you do? Everybody has many questions above. The doctor has to answer that question mainly because just their can do that will. It said that about book. Book is familiar on every person. Yes, it is right. Because start from on pre-school until university need this Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) to read.

Catherine Crider:

Hey guys, do you really want to find a new book to see? Maybe the book with the subject Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) suitable to you? The particular book was written by a well-known writer in this era. The particular book titled Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) is a single of several books which everyone reads now. This kind of book has inspired many people in the world. When you read this publication, you will enter the new shape that you have never known before. The author explained their strategy in a simple way, therefore all of people can easily understand the core of this reserve. This book will give you a lot of information about this world now. To help you to see the representation of the world in this book.

Benjamin King:

The guide with title Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) has a lot of information that you can study it. You can get a lot of help after reading this book. That book exists, new understanding the information that exists in this e-book represents the condition of the world today. That is important to you to learn how the improvement of the world. This specific book will bring you inside the new era of the internationalization. You can read the e-book on the smart phone, so you can read it anywhere you want.

Joyce Pippin:

Playing with family in a park, coming to see the marine world or hanging out with friends is something that usually you might have done when you have spare time, and then why you don't try something that is really opposite from that. A single activity that makes you not feel tired but still relaxing, thrilling like on a roller coaster you have been riding on and with addition of information. Even you love Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology), you can enjoy both. It is a fine combination, right, you still want to miss it? What kind of hang-out type is it? Oh come on its mind hangout men. What? Still don't buy it, oh come on its referred to as reading friends.

Download and Read Online Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson #UTSN3KHPFXM

Read Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson for online ebook

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson books to read online.

Online Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson ebook PDF download

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson Doc

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson Mobipocket

Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson EPub

UTSN3KHPFXM: Real-Time Collision Detection (The Morgan Kaufmann Series in Interactive 3-D Technology) By Christer Ericson