# Real-Time Collision Detection

*Von Christer Ericson*
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**Von Christer Ericson : Real-Time Collision Detection** before purchasing it in order to gage whether or not it would be worth my time, and all praised Real-Time Collision Detection:

KundenrezensionenHilfreichste Kundenrezensionen2 von 4 Kunden fanden die folgende Rezension hilfreich. Schnes Buch, aber fehlerhafter CodeVon M. MeyerDas Buch macht einen sehr professionellen Eindruck und will wahrscheinlich das Standard-Werk im Bereich "Real-Time Collision" sein. Ich hatte das Buch bis jetzt im Schrank stehen und habe es jetzt zum ersten mal wirklich brauchen knnen, ich brauchte die "moving AABB against AABB" Funktion aus Kapitel 5.5.8. Die Erklrung mit der Grafik fande ich nicht besonders ansprechend, den Algorithmus hat der Autor von Gomez99 bernommen, abgendert und beschleunigt. Allerdings hat er den Fehler von Gomez auch bernommen und zwar wird die Relativbewegung v zwar auf 0.0f und 0.0f, aber nicht auf == 0.0f geprft. Ich bin entuscht, da diese Funktion wohl eine der meist verwendeten Funktionen zu dem Thema ist.3 von 3 Kunden fanden die folgende Rezension hilfreich. Strukturiertes und detailliertes KompendiumVon Stefan FleischerBei dem Buch handelt es sich um eine umfangreiche und detaillierte Beschreibung gngiger Verfahren zur Kollisionserkennung. Die Gliederung ist wohlstrukturiert und wird zwischendurch immer wieder hervorgehoben, um gewisse Problemstellungen

und Techniken zur Bewltigung dieser einzuordnen, was aus meiner Sicht sehr hilfreich ist. Besonders gut gefllt mir die Behandlung angesprochener "Stolperstellen" und Probleme verschiedener Techniken und deren Vor- und Nachteile sowie die daraus resultierenden Einsatzmglichkeiten und -empfehlungen. Dabei wird insbesondere die Robustheit verschiedener Algorithmen betrachtet, die oft von der Genauigkeit in der Fliekommaarithmetik abhngt. Ferner werden Vorschlge zur Code-Optimierung einbezogen, die manchmal Sinn macht und ein andermal einen Overhead bei der Entwicklung bedeutet. Im Groen und Ganzen ein absolut gelungenes Buch, dass sowohl ein "Einsteigertutorium" als auch ein Nachschlagewerk fortgeschrittener Programmierer sein kann.5 von 5 Kunden fanden die folgende Rezension hilfreich. Ein sogenanntes Must-Read Book!Von Ein KundeJedem der auch nur annhernd etwas mit collision detection zu tun hat, lege ich dieses Buch als must-read Buch nahe. Uneingeschrnkt brauchbar! Ergnzt Gino van den Bergens Buch "Collision detection in interactive environments". Als kleines Manko sehe ich die Software auf der beiliegenden CD, welche nur einzelne Code Fragmente aber kein ablauffhiges Programm beinhaltet. Htte evtl. Sinn gemacht, gleich auch ein paar kleine Demoprojekte draufzupacken.

KurzbeschreibungWritten 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.Pressestimmen" 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." #151Eric Lengyel, Senior Programmer, Naughty Dog"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." #151Eric Lengyel, Senior Programmer, Naughty Dog"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 LimitedKurzbeschreibungWritten 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.