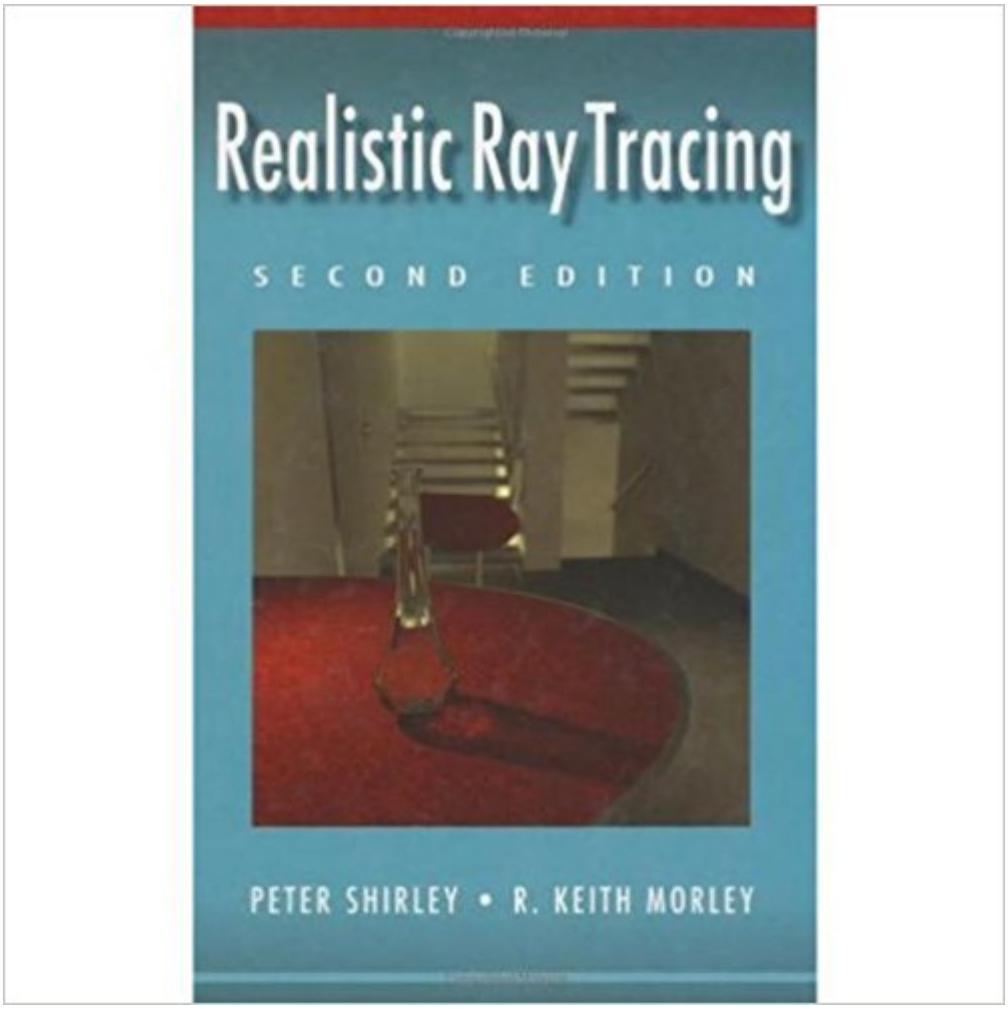
Realistic Ray Tracing, Second Edition



Synopsis

Concentrating on the "nuts and bolts" of writing ray tracing programs, this new and revised edition emphasizes practical and implementation issues and takes the reader through all the details needed to write a modern rendering system. Most importantly, the book adds many C++ code segments, and adds new details to provide the reader with a better intuitive understanding of ray tracing algorithms.

Book Information

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Customer Reviews

Peter Shirley is a professor in the School of Computing at the University of Utah. He is a member of the Visual Simulation Group, whose work focuses on the creation of images for the human visual system, including static and dynamic imagery for traditional displays and immersive environments. He has held positions at Indiana University and the Cornell Program of Computer Graphics. R. Keith Morley is currently attending the University of Utah School of Computing. His research interests include parallel programming, interactive ray tracing, and realistic image synthesis.

This book will in a very short time span teach you even some advanced features of ray-tracing. Unfortunately, it is simply to high paced, unless you are an advanced programmer with some knowledge of ray-tracing already.

It’s a classic book, worth to buy and read. It would be nice If the code printing is clearer and more

pictures.

I purchased this book at the request of and for the use of a grandniece who is studying computer science. I assume she must give it a five-star rating or she wouldn’t want to own her own copy. I ordered it via and had arrange direct shipping to her. R. Woodworth

I had begun making a ray tracer just a few days before reading this book. At the time, I had already read through quite a few articles regarding the basics, and some vector arithmetic (which I was completely ignorant of before hand). I had a basic ray tracer only capable of shadows and rendering spheres and planes. I skimmed through this book hoping to find algorithms for reflections, diffusion, and refraction. I was absolutely amazed! The algorithms were clearly explained in a way that was easy to implement them into my tracer. I later read through the book more thoroughly and found out about techniques I had never heard of before such as soft shadows and sampling. However, there are some issues. First of all, the ending is more of jumbled mentions of theory, rendering it much less practical. I would also agree with other reviewers that this is NOT a book for readers that are unfamiliar with ray tracing in general or high level mathematics. In short, this book will waste no time giving you all of what you need for a ray tracer and nothing that you don’t.

I was initially excited about this book, as I have a somewhat silly notion that books produced by authors bold enough to condense a large subject into a compact little package are generally very tight, elegant works that are a joy to read. Wirth’s Compiler Construction is an excellent example of this.As I worked through this book, I found this to be anything but the case. Maybe this is my fault; after all I did say it was a somewhat silly notion.I have found that the assumed knowledge varies widely as you work your way throughout the book, and not just in an easy-to-difficult progression from front to back. I have worked through approximately 3/4ths of this book, and have found it so riddled with errors that I often wonder if the author didn’t just submit his first draft as camera-ready to the publisher. Every time I look at a pseudocode algorithm I check the errata page, and almost every time I find that there are errors. One algorithm was so incredibly wrong that rather than try and correct the code in my book with a pencil, I had to print the correct code, cut it out, and tape it over the existing one! After all of this you start to wonder how much you can trust what is being said, which is unfortunate.The book does have some redeeming value, and if you keep in mind the large number of errors, you can actually learn quite a bit from it. It just annoys me to spend money on a "rough draft" book that could have benefited so much by a little more "proofing" by the author. I

would also take with a grain of salt reviews here that are obviously written by people who read the back cover and the introduction with great zeal and formed their summary based on that. If you have not worked your way through a substantial portion of a book, you have no business writing a review of it.I did like how the book was divided into a basic ray tracer, bells and whistles, and an advanced section. I got some nice results with just the first part. I also took some useful bits and pieces from the second part, and found the discussion about monte carlo methods and antialiasing interesting. I also did some soft shadow work, but supplemented it with a discussion from the Watt/Watt book (Advanced Animation and Rendering Techniques). This would most likely be a decent book for a dabbler new to the field (but having a decent mathematical background), and those taking a ray tracing class.

The book "Realistic Ray Tracing" contains a description of all important ray tracing techniques and a guideline to the implementation of a ray tracing program. The book covers the basics like ray-object intersection, lighting, viewing and materials, but the major part of the text deals with advanced techniques monte carlo integration, antialiasing, soft shadows or path-tracing.The book contains only some 150 pages and each technique is thus described in 3 to 10 pages. The language used is clear and the book is very readable. It is very easy to read the whole book or just to pick a specific chapter and get an idea of one topic. The main focus of this book is the implementation of a ray tracer. All techniques are described in a way that enables the reader to easily code them. All the math needed is provided and procedural pseudo code fragments are given in some chapters. Despite being quite a thin book, the selection of topics is very good and most of the important ray tracing techniques are covered.There are some problems with this book though. First of all, this book does not describe the ray tracing algorithm very well. Readers completely unfamiliar with this method might have some difficulties understanding the overall picture. This is also true for the implementation part. Although a lot of techniques and basics are explained, the author does not cover the implementation of a ray tracing framework.Some of the chapters are simply too brief. The mathematical background is covered but not explained. In the first chapter, the author introduces 4-dimensional homogeneous coordinate systems without explaining them. This could have been done in 1-2 pages and would have helped to better understand a lot of the transformations used throughout the book. And the chapter about triangle meshes only deals with different approaches to store a triangle mesh. No word about the triangulation process itself.Overall, this is a lovely book that covers a lot of ray tracing techniques, but is is no introduction to this method.

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