

Ray Tracing: The Next Week (Ray Tracing Minibooks Book 2)

This Open Access book is a must-have for anyone interested in real-time rendering. Ray tracing is the holy grail of gaming graphics, simulating the physical behavior of light to bring real-time, cinematic-quality rendering to even the most visually intense games. Ray tracing is also a fundamental algorithm used for architecture applications, visualization, sound simulation, deep learning, and more. Ray Tracing Gems II is written by industry experts with a particular focus on ray tracing, and it offers a practical means to master the new capabilities of current and future GPUs with the latest graphics APIs. What You'll Learn: The latest ray tracing techniques for developing real-time applications in multiple domains Case studies from developers and studios who have shipped products that use real-time ray tracing. Guidance, advice and best practices for rendering applications with various GPU-based ray tracing APIs (DirectX Raytracing, Vulkan Ray Tracing) High performance graphics for 3D graphics, virtual reality, animation, and more Who This Book Is For:Game and graphics developers who are looking to leverage the latest hardware and software tools for real-time rendering and ray tracing to enhance their applications across a variety of disciplines.

Thoroughly revised, this third edition focuses on modern techniques used to generate synthetic three-dimensional images in a fraction of a second. With the advent of programmable shaders, a wide variety of new algorithms have arisen and evolved over the past few years. This edition discusses current, practical rendering methods used in games and other applications. It also presents a solid theoretical framework and relevant mathematics for the field of interactive computer graphics, all in an approachable style. The authors have made the figures used in the book available for download for fair use.Download Figures. Reviews Rendering has been a required reference for professional graphics practitioners for nearly a decade. This latest edition is as relevant as ever, covering topics from essential mathematical foundations to advanced techniques used by today's cutting edge games. -- Gabe Newell, President, Valve, May 2008 Rendering ... has been completely revised and revamped for its updated third edition, which focuses on modern techniques used to generate three-dimensional images in a fraction of the time old processes took. From practical rendering for games to math and details for better interactive applications, it's not to be missed. -- The Bookwatch, November 2008 You'll get brilliantly lucid explanations of concepts like vertex morphing and variance shadow mapping—as well as a new respect for the incredible craftsmanship that goes into today's PC games.-- Logan Decker, PC Gamer Magazine , February 2009

Beginning with the absolutely critical first moments of the outbreak in China, and ending with an epilogue on the vaccine rollout and the unprecedented events between the election of Joseph Biden and his inauguration, Lawrence Wright's The Plague Year surges forward with essential information—and fascinating historical parallels—examining the medical, economic, political, and social ramifications of the COVID-19 pandemic.

Thoroughly updated, this fourth edition focuses on modern techniques used to generate synthetic three-dimensional images in a fraction of a second. With the advent of programmable shaders, a wide variety of new algorithms have arisen and evolved over the past few years. This edition discusses current, practical rendering methods used in games and o

Ray Tracing from the Ground Up

Advanced Rendering Techniques

Hiroshima

From Theory to Implementation

The Photographer at Sixteen

Physically Based Rendering

A novel

With the increase in computing speed and due to the high quality of the optical effects it achieves, ray tracing is becoming a popular choice for interactive and animated rendering. This book takes readers through the whole process of building a modern ray tracer from scratch in C++. All concepts and processes are explained in detail with the aid o

National Bestseller Now a major motion picture starring Tom Holland and directed by the Russo Brothers. A young medic returns from deployment in Iraq to two things: the woman he loves, and the opioid crisis sweeping across the Midwest. In this "miracle of literary serendipity" (The Washington Post), after finding himself deep in the thrall of heroin addiction, the soldier arrives at what seems like the only logical solution: robbing banks. Written by a singularly talented, wildly imaginative debut novelist, Chery is a bracingly funny and unexpectedly tender work of fiction straight from the dark heart of America. A PEN/HEMINGWAY AWARD FINALIST A NEW YORK TIMES NOTABLE BOOK ONE OF THE BEST BOOKS OF THE YEAR: THE NEW YORKER • ENTERTAINMENT WEEKLY • VULTURE • VOGUE • LIT HUB

High Dynamic Range Imaging, Second Edition, is an essential resource for anyone working with images, whether it is for computer graphics, film, video, photography, or lighting design. It describes HDRi technology in its entirety and covers a wide-range of topics, from capture devices to tone reproduction and image-based lighting. The techniques described enable students to produce images that have a dynamic range much closer to that found in the real world, leading to an unparalleled visual experience. This revised edition includes new chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices. All existing chapters have been updated to reflect the current state-of-the-art technology. As both an introductory technical reference, this book is essential for anyone working with images, whether in computer graphics, film, video, photography, or lighting design. New material includes chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices Written by the inventors and initial implementors of High Dynamic Range Imaging Covers the basic concepts (including just enough about human vision to explain why HDR images are necessary), image capture, image encoding, file formats, display techniques, tone mapping for lower dynamic range display, and the use of HDR images and calculations in 3D rendering Range and depth of coverage is good for the knowledgeable researcher as well as those who are just starting to learn about High Dynamic Range imaging The prior edition of this book included a DVD-ROM. Files from the DVD-ROM can be accessed at: http://www.erikreinhard.com/hdr_2nd/index.html

This updated edition describes both the mathematical theory behind a modern photorealistic rendering system as well as its practical implementation. Through the ideas and software in this book, designers will learn to design and employ a full-featured rendering system for creating stunning imagery.

Includes a companion site complete with source code for the rendering system described in the book, with support for Windows, OS X, and Linux.

Health Effects of Exposure to Low Levels of Ionizing Radiation

The Plague Year

Nineteen Eighty-Four

Hands-on Rust

Molybdenum-99 for Medical Imaging

Why Nations Succeed or Fail

Wolfeinstein 3D

Exploring recent developments in the rapidly evolving field of game real-time rendering, GPU Zen assembles a high-quality collection of cutting-edge contributions for programming the GPU. Rendering (Patrick Cozzi1. Adaptive GPU Tessellation with Compute Shaders by Jad Khoury, Jonathan Dupuy, and Christophe Riccio2. Applying Vectorized Visibility on All frequently Direct Illumination by Ho Chun Leung, Tze Yui Ho, Zhenmi Wang, Chi Sing Leung, Eric Wing Ming Wong3. Non-periodic Tiling of Noise-based Procedural Textures by Aleksandr Kirillov4. Rendering Surgery Simulation with Vulkan by Nicholas Milef, Di Qi, and Suvranu De5. Skinned Decals by Havar DoghranchiEnvironmental Effects (Wolfgang Engel1. Real-Time Fluid Simulation in Shadow of the Tomb Raider by Peter Sikachev, Martin Palko and Alexandre Chekroun2. Real-time Snow Deformation in Horizon Zero Dawn: The Frozen Wilds by Kevin OrtegrenShadows (Maurizio Vive)1. Soft Shadow Approximation for Dappled Light Sources by Mariano Merchante2. Parallax-Corrected Cached Shadow Maps by Pavlo Turchyn3D Engine Design (Wesam Bahmass)1. Real-Time Layered Materials Compositing Using Spatial Clustering Encoding by Sersey Makev2. Procedural Stochastic Textures by Tiling and Blending by Thomas Deliot and Eric Baudouin3. A Ray Casting Technique for Baked Texture Generation by Alain Galvan and Jef Runse114. Writing an efficient Vulkan renderer by Arseny Kapoulkine5. glTF - Runtime 3D Asset Delivery by Marco HutterRay Tracing (Anton Kaplanyan)1. Real-Time Ray-Traced One-Bounce Caustics by Holger Gruen2. Adaptive Anti-Aliasing using Conservative Rasterization and GPU Ray Tracing by Rahul Sathe, Holger Gruen, Adam Marra, Josef Spjut, Morgan McGuire, Yury Uralsky

"Startling in scope and bravado." –Janet Maslin, The New York Times "Artfully envisions a breathtakingly better world." –Los Angeles Times "Elaborate, smart and persuasive." –The Boston Globe "A pleasure to read." –The Wall Street Journal One of CBS News's Best Fall Books of 2005 • Among St Louis Post-Dispatch's Best Nonfiction Books of 2005 • One of Amazon.com's Best Science Books of 2005 A radical and optimistic view of the future course of human development from the bestselling author of How to Create a Mind and The Singularity is Nearer who Bill Gates calls "the best person I know at predicting the future of artificial intelligence" For over three decades, Ray Kurzweil has been one of the most respected and provocative advocates of the role of technology in our future. In his classic The Age of Spiritual Machines, he argued that computers would soon rival the full range of human intelligence at its best. Now he examines the next step in this inexorable evolutionary process: the union of human and machine. In which the knowledge and skills embedded in our brains will be combined with the vastly greater capacity, speed, and knowledge-sharing ability of our creations.

The American working class wouldn't disappear with the manufacturing economy. It transformed. Instead of unionized blue-collar men, today's working class is dominated by underpaid women in service jobs—especially health care. With recognition of this shift, Gabriel Winant argues, may come political clout.

Real-Time RenderingCRC Press

The Next Shift

The Shadow of the Mine

The Singularity Is Near

3D Graphics Rendering Cookbook

Reading Interactive Narratives

Coal and the End of Industrial Britain

GPU Zen 2

This book is a must-have for anyone serious about rendering in real time. With the announcement of new ray tracing APIs and hardware to support them, developers can easily create real-time applications with ray tracing as a core component. As ray tracing on the GPU becomes faster, it will play a more central role in real-time rendering. Ray Tracing Gems provides key building blocks for developers of games, architectural applications, visualizations, and more. Experts in rendering share their knowledge by explaining everything from nitty-gritty techniques that will improve any ray tracer to mastery of the new capabilities of current and future hardware. What you'll learn: The latest ray tracing techniques for developing real-time applications in multiple domains Guidance, advice, and best practices for rendering applications with Microsoft DirectX Raytracing (DXR) How to implement high-performance graphics for interactive visualizations, games, simulations, and more Who this book is for:Developers who are looking to leverage the latest APIs and GPU technology for real-time rendering and ray tracing Students looking to learn about best practices in these areas Enthusiasts who want to understand and experiment with their new GPUs

This book reevaluates the health risks of ionizing radiation in light of data that have become available since the 1980 report on this subject was published. The data include new, much more reliable dose estimates for the A-bomb survivors, the results of an additional 14 years of follow-up of the survivors for cancer mortality, recent results of follow-up studies of persons irradiated for medical purposes, and results of relevant experiments with laboratory animals and cultured cells. It analyzes the data in terms of risk estimates for specific organs in relation to dose and time after exposure, and compares radiation effects between Japanese and Western populations.

Have you ever wanted to build your own operating system, but didn't know where to begin? Then this book is for you! In this book, the author explains everything you need to know from getting and installing the necessary tools to writing, compiling, deploying, and testing your very own operating system. By the time you are done you will have an operating system to call your own. And, don't worry about destroying your existing hardware and software environment as everything in this book is written with the intention of running in a virtualized environment. However, should you choose to do so, the author also explains how to deploy and test your new OS on bare-metal hardware as well. The first few chapters give a brief overview of how modern day computers work. In these chapters you will (re)learn everything from memory allocation, stacks, and bootloaders to low-level machine code and programming languages. After that, you will jump into downloading and installing the tools you will use for building your very own operating system. Here you will learn how to develop a bootloader and kernel just like modern day computers rely on for operating. The last few chapters will explain how to deploy and test your operating system as well as how to expand your OS to do more and even how to cross-compile your shiny new operating system for other devices such as the Raspberry Pi. To give an idea of what you can find in this book, below is the Table of Contents: 0x01 OS Basics 0x02 Intro to Machine Code 0x03 Intro to the C Programming Language 0x04 Into to the C Programming Language 0x05 Getting Started - Installing VirtualBox - Installing Linux - Installing GNOME - Preparing CentOS and the VM - Troubleshooting VirtualBox Guest Additions - Preparing the Development Environment 0x06 Bootstrapping with the Bootloader - Creating the Entry Point - GNU GRUB Compiling the Entry Point 0x07 Welcome to the Kernel 0x08 Putting it all Together 0x09 Testing Your Operating System 0x0A Starting Your Architecture Library - Expanding the Console 0x0B Expanding Your OS 0x0C Cross-Compiling for Other Architectures - Create a Custom Cross-Compiler - Porting for the Raspberry Pi - Testing on Physical Hardware Conclusion Acknowledgements Appendix Index

The decay product of the medical isotope molybdenum-99 (Mo-99), technetium-99m (Tc-99m), and associated medical isotopes iodine-131 (I-131) and xenon-133 (Xe-133) are used worldwide for medical diagnostic imaging or therapy. The United States consumes about half of the world's supply of Mo-99, but there has been no domestic (i.e., U.S.-based) production of this isotope since the late 1980s. The United States imports Mo-99 for domestic use from Australia, Canada, Europe, and South Africa. Mo-99 and Tc-99m cannot be stockpiled for use because of their short half-lives. Consequently, they must be routinely produced and delivered to medical imaging centers. Almost all Mo-99 for medical use is produced by irradiating highly enriched uranium (HEU) targets in research reactors, several of which are over 50 years old and are approaching the end of their operating lives. Unanticipated and extended shutdowns of some of these old reactors have resulted in severe Mo-99 supply shortages in the United States and other countries. Some of these shortages have disrupted the delivery of medical care. Molybdenum-99 for Medical Imaging examines the production and utilization of Mo-99 and associated medical isotopes, and provides recommendations for medical use.

The End of Books--or Books Without End?

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The Salt Path

An Introduction to Ray Tracing

The Sirens of Mars

Diet and Health

Fluid Engine Development

Rust in Action introduces the Rust programming language by exploring numerous systems programming concepts and techniques.You'll be learning Rust by delving into how computers work under the hood. You'll find yourself playing with persistent storage, memory, networking and even tinkering with CPU instructions. The book takes you through using Rust to extend other applications and teaches you tricks to write blindingly fast code. You'll also discover parallel and concurrent programming. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

The uplifting true tale of the couple who lost everything and embarked on a journey of salvation across the windswept South West coastline. Now a Top Ten Sunday Times Bestseller 'The landscape is magical: shape-shifting seas and smugglers' coves; myriads of sea birds and mauve skies. Raynor writes exquisitely . . . It's a tale of triumph: of hope over despair; of love over everything . . . home was no longer about bricks and mortar. It was a state of mind!' The Sunday Times Just days after Raynor learns that Moth, her husband of 32 years, is terminally ill, their home is taken away and they lose their livelihood. With nothing left and little time, they make the brave and impulsive decision to walk the 630 miles of the sea-swept South West Coast Path, from Somerset to Dorset, via Devon and Cornwall. Carrying only the essentials for survival on their backs, they live wild in the ancient, weathered landscape of cliffs, sea and sky. Yet through every step, every encounter and every test along the way, their walk becomes a remarkable journey. The Salt Path is an honest and life-affirming true story of coming to terms with grief and the healing power of the natural world. Ultimately, it is a portrayal of home, and how it can be lost, rebuilt and rediscovered in the most unexpected ways. 'The Salt Path is a life-affirming tale of enduring love that smells of the sea and tastes of a rich life. With beautiful, immersive writing, it is a story heart-achingly and beautifully told.' Jackie Morris

The creation of ever more realistic 3-D images is central to the development of computer graphics. The ray tracing technique has become one of the most popular and powerful means by which photo-realistic images can now be created. The simplicity, elegance and ease of implementation makes ray tracing an essential part of understanding and exploiting state-of-the-art computer graphics. An Introduction to Ray Tracing develops from fundamental principles to advanced applications, providing "how-to" procedures as well as a detailed understanding of the scientific foundations of ray tracing. It is also richly illustrated with four-color and black-and-white plates. This is a book which will be welcomed by all concerned with modern computer graphics, image processing, and computer-aided design. Provides practical "how-to" information Contains high quality color plates of images created using ray tracing techniques Progresses from a basic understanding to the advanced science and application of ray tracing

On August 6, 1945, Hiroshima was destroyed by the first atom bomb ever dropped on a city. This book, John Hersey's journalistic masterpiece, tells what happened on that day. Told through the memories of survivors, this timeless, powerful and compassionate document has become a classic "that stirs the conscience of humanity" (The New York Times). Almost four decades after the original publication of this celebrated book, John Hersey went back to Hiroshima in search of the people whose stories he had told. His account of what he discovered about them is now the eloquent and moving final chapter of Hiroshima.

The X-ray: Or, Photography of the Invisible and Its Value in Surgery

Create Your Own Operating System

Direct3D Rendering Cookbook

A Test-driven Guide to Your First 3D Renderer

Acquisition, Display, and Image-Based Lighting

The Ray Tracer Challenge

A comprehensive guide to exploring rendering algorithms in modern OpenGL and Vulkan

Brace yourself for a fun challenge: build a photorealistic 3D renderer from scratch! In just a couple of weeks, build a ray tracer that renders beautiful scenes with shadows, reflections, refraction effects, and subjects composed of various graphics primitives: spheres, cubes, cylinders, triangles, and more. With each chapter, implement another piece of the puzzle and move the renderer forward. Use whichever language and environment you prefer, and do it entirely test-first, so you know it's correct.

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

This is a practical cookbook that dives into the various methods of programming graphics with a focus on games. It is a perfect package of all the innovative and up-to-date 3D rendering techniques supported by numerous illustrations, strong sample code, and concise explanations. Direct3D Rendering Cookbook is for C#. .NET developers who want to learn the advanced rendering techniques made possible with DirectX 11.2. It is expected that the reader has at least a cursory knowledge of graphics programming, and although some knowledge of Direct3D 10+ is helpful, it is not necessary. An understanding of vector and matrix algebra is required. George Orwell's Nineteen Eighty-Four is unquestionably the most famous dystopian novel of all times. Written in the year of 1948, the author swapped the last two digits while describing a future totalitarian society where the minds, attitudes and actions of the subjects are thoroughly scrutinized by the "Thought Police", suspected dissidents tracked down and where the worship of the mythical party leader Big Brother is forced upon the masses. The low-ranking party member Winston Smith begins secretly to question the whole system and initiates a forbidden love affair with another party member.

The uplifting true story. A Sunday Times Bestseller. Shortlisted for The Wainwright Prize

Real-Time Rendering

InfoWorld

Real-Time Rendering, Fourth Edition

A BBC RADIO 4 BOOK OF THE WEEK

The Epilepsies

When Humans Transcend Biology

The Epilepsies: Seizures, Syndromes and Management is the latest work from one of the world's leading experts and offers an exhaustive account of the classification and management of epileptic disorders. In thirteen chapters, Dr Panayiotopoulos gives clear and didactic guidance on the diagnosis, treatment and ongoing management of the full spectrum of epileptic syndromes with an insight and perception that only he can bring to the subject. This text is published in full colour throughout and is complemented by a pharmacopoeia and CD ROM with patient video-EEGs. An attractive, clear page layout and the accompanying supplementary material help the reader to easily identify the key components of each disorder, syndrome and seizure. Drawing on the author's outstanding collection of video-EEGs the accompanying CD ROM is cross-referenced from legends that link both a clinical and visual description of the various epileptic disorders and further aiding diagnosis.

Drawing on an impressive roster of experts in the field, Fundamentals of Computer Graphics, Fourth Edition offers an ideal resource for computer course curricula as well as a user-friendly personal or professional reference. Focusing on geometric intuition, the book gives the necessary information for understanding how images get onto the screen by using the complementary approaches of ray tracing and rasterization. It covers topics common to an introductory course, such as sampling theory, texture mapping, spatial data structure, and splines. It also includes a number of contributed chapters from authors known for their expertise and clear way of explaining concepts. Highlights of the Fourth Edition Include: Updated coverage of existing topics Major updates and improvements to several chapters, including texture mapping, graphics hardware, signal processing, and data structures A text now printed entirely in four-color to enhance illustrative figures of concepts The fourth edition of Fundamentals of Computer Graphics continues to provide an outstanding and comprehensive introduction to basic computer graphic technology and theory. It retains an informal and intuitive style while improving precision, consistency, and completeness of material, allowing aspiring and experienced graphics programmers to better understand and apply foundational principles to the development of efficient code in creating film, game, or web designs. Key Features Provides a thorough treatment of basic and advanced topics in current graphics algorithms Explains core principles intuitively, with numerous examples and pseudo-code Gives updated coverage of the graphics pipeline, signal processing, texture mapping, graphics hardware, reflection models, and curves and surfaces Uses color images to give more illustrative power to concepts

From legendary investor Ray Dalio, author of the international bestseller Principles, who has spent half a century studying global economies and markets, Principles for Dealing with the Changing World Order examines history's most turbulent economic and political periods to reveal why the times ahead will likely be radically different from those we've experienced in our lifetimes - but similar to those that have happened many times before. A few years ago, Ray Dalio noticed a confluence of political and economic conditions he hadn't encountered before. They included huge debt and zero or near-zero interest rates that led to massive printing of money in the world's three major reserve currencies; big political and social conflicts within countries, especially the US, due to the largest wealth, political and values disparities in more than 100 years; and the rising of a world power (China) to challenge the existing world power (US) and the existing world order. The last time that this confluence occurred was between 1930 and 1945. This realisation sent Dalio on a search for the repeating patterns and cause/effect relationships underlying all major changes in wealth and power over the last 500 years. In this remarkable and timely addition to his Principles series, Dalio brings readers along for his study of the major empires - including the Dutch, the British and the American - putting into perspective the 'Big Cycle' that has driven the successes and failures of all the world's major countries throughout history. Dalio reveals the timeless and universal forces behind these shifts and uses them to look into the future, offering practical principles for positioning oneself for what's ahead.

How was WolfeStein 3D made and what were the secrets of its speed? How did it software manage to turn a machine designed to display static images for photo processing and spreadsheet applications into the best gaming platform in the world, capable of running games at seventy frames per seconds? If you have ever asked yourself these questions, Game Engine Black Book is for you. This is an engineering book. You will find as much prose in here (the author's English is broken anyway.) Instead, this book has only bit of text and plenty of drawings attempting to describe in great detail the WolfeStein 3D game engine and its hardware, the IBM PC with an Intel 386 CPU and a VGA graphic card. Game Engine Black Book details techniques such as raycasting, compiled scalars, deferred rendition, VGA Mode-Y, linear feedback shift register, fixed point arithmetic, pulse width modulation, runtime generated code, self-modifying code, and many others tricks. Open up to discover the architecture of the software which pioneered the first Person Shooter genre.

Goodnight Mister Tom

Seizures, Syndromes and Management : Based on the ILAE Classifications and Practice Parameter Guidelines

Robust Monte Carlo Methods for Light Transport Simulation

A Programmer's Introduction to 3D Rendering

The Fall of Industry and the Rise of Health Care in Rust Belt America

Game Engine Black Book

Next Generation Real-Time Rendering with DXR, Vulkan, and OptiX

As a new wave of interplanetary exploration unfolds, a talented young planetary scientist charts our centuries-old obsession with Mars. 'Beautifully written, emotive - a love letter to a planet' DERMOT O'LEARY, BBC Radio 2 Mars - bewilderingly empty, coated in red dust - is an unlikely place to pin our hopes of finding life elsewhere. And yet, right now multiple spacecraft are circling, sweeping over Terra Sabaea, Syrtis Major, the dunes of Elysium and Mare Sirenum - on the brink, perhaps, of a discovery that would inspire humankind as much as any in our history. With poetic precision and grace, Sarah Stewart Johnson traces the evocative history of our explorations of Mars. She interlaces her personal journey as a scientist with tales of other seekers - from Galileo to William Herschel to Carl Sagan - who have scoured this enigmatic planet for signs of life and transformed it in our understanding from a distant point of light into a complex world. Ultimately, she shows how its story is also a story about Earth: it is a foil, a mirror, a tall-tale reflection of our own anxieties and yearnings to find - if we're lucky - that we're not alone. 'Elegantly written and boundlessly entertaining' Sunday Telegraph 'Beguiling' The Times Johnson's prose swirls with lyrical wonder, as varied and multi-hued as the apricot deserts, butterscotch skies and blue sunsets of Mars' Anthony Doerr, New York Times Book Review 'Elegantly crafted' Lord Martin Rees, Astronomer Royal

Revealing glimpses of the Philippine Revolution and the Filipino writer Jose Rizal emerge despite the worst efforts of feuding academics in Apostol's hilariously erudite novel, which won the Philippine National Book Award. Gina Apostol's riotous second novel takes the form of a memoir by one Raymundo Mata, a half-blind bookworm and revolutionary, tracing his childhood, his education in Manila, his love affairs, and his discovery of writer and fellow revolutionary, Jose Rizal. Mata's 19th-century story is complicated by present-day foreword(s), afterword(s), and footnotes from three fiercely quarrelsome and comic voices: a nationalist editor, a neo-Freudian psychoanalytic critic, and a translator, Mimi C. Magallon. In telling the contested and fragmentary story of Mata, Apostol finds new ways to depict the violence of the Spanish colonial era, and to reimagine the nation's great writer, Jose Rizal, who was executed by the Spanish for his revolutionary activities, and is considered by many to be the father of Philippine independence. The Revolution According to Raymundo Mata offers an intoxicating blend of fact and fiction, uncovering lost histories while building dazzling, anarchic modes of narrative.

Computer Graphics from Scratch demystifies the algorithms used in modern graphics software and guides beginners through building photorealistic 3D renders. Computer graphics programming books are often math-heavy and intimidating for newcomers. Not this one. Computer Graphics from Scratch takes a simpler approach by keeping the math to a minimum and focusing on only one aspect of computer graphics, 3D rendering. You'll build two complete, fully functional renderers: a raytracer, which simulates rays of light as they bounce off objects, and a rasterizer, which converts 3D models into 2D pixels. As you progress you'll learn how to create realistic reflections and shadows, and how to render a scene from any point of view. Pseudocode examples throughout make it easy to write your renderers in any language, and links to live JavaScript demos of each algorithm invite you to explore further on your own. Learn how to: • Use perspective projection to draw 3D objects on a 2D plane • Simulate the way rays of light interact with surfaces • Add mirror-like reflections and cast shadows to objects • Render a scene from any camera position using clipping planes • Use flat, Gouraud, and Phong shading to mimic real life surface lighting • Paint texture details onto basic shapes to create realistic-looking objects Whether you're an aspiring graphics engineer or a novice programmer curious about how graphics algorithms work, Gabriel Gambetta's simple, clear explanations will quickly put computer graphics concepts and rendering techniques within your reach. All you need is basic coding knowledge and high school math. Computer Graphics from Scratch will cover the rest.

Build a 3D rendering engine from scratch while solving problems in a step-by-step way with the help of useful recipes Key Features Learn to integrate modern rendering techniques into a single performant 3D rendering engine Leverage Vulkan to render 3D content, use AZDO in OpenGL applications, and understand modern real-time rendering methods Implement a physically based rendering pipeline from scratch in Vulkan and OpenGL Book Description OpenGL is a popular cross-language, cross-platform application programming interface (API) used for rendering 2D and 3D graphics, while Vulkan is a low-overhead, cross-platform 3D graphics API that targets high-performance applications. 3D Graphics Rendering Cookbook helps you learn about modern graphics rendering algorithms and techniques using C++ programming along with OpenGL and Vulkan APIs. The book begins by setting up a development environment and takes you through the steps involved in building a 3D rendering engine with the help of basic, yet self-contained, recipes. Each recipe will enable you to incrementally add features to your codebase and show you how to integrate different 3D rendering techniques and algorithms into one large project. You'll also get to grips with core techniques such as physically based rendering, image-based rendering, and CPU/GPU geometry culling, to name a few. As you advance, you'll explore common techniques and solutions that will help you to work with large datasets for 2D and 3D rendering. Finally, you'll discover how to apply optimization techniques to build performant and feature-rich graphics applications. By the end of this 3D rendering book, you'll have gained an improved understanding of best practices used in modern graphics APIs and be able to create fast and versatile 3D rendering frameworks. What you will learn Improve the performance of legacy OpenGL applications Manage a substantial amount of content in real-time 3D rendering engines Discover how to debug and profile graphics applications Understand how to use the Approaching Zero Driver Overhead (AZDO) philosophy in OpenGL Integrate various rendering techniques into a single application Find out how to develop Vulkan applications Implement a physically based rendering pipeline from scratch Integrate a physics library with your rendering engine Who this book is for This book is for 3D graphics developers who are familiar with the mathematical fundamentals of 3D rendering and want to gain expertise in writing fast rendering engines with advanced techniques using C++ libraries and APIs. A solid understanding of C++ and basic linear algebra, as well as experience in creating custom 3D applications without using premade rendering engines is required.

Principles for Dealing with the Changing World Order

The Revolution According to Raymundo Mata

High-Quality and Real-Time Rendering with DXR and Other APIs

Implications for Reducing Chronic Disease Risk

Rust in Action

Fundamentals of Computer Graphics

The rise and fall of Britain's most important industry No one personified the age of industry more than the miners. The Shadow of the Mine tells the story of King Coal in its heyday - and what happened to mining communities after the last pits closed. Coal was central to the British economy, powering its factories and railways. It carried everything in a year-long strike against Thatcher's shutdowns. Defeat foretold the death of their industry. Tens of thousands were cast onto the labour market with a minimum amount of advice and support. Yet British politics all of a sudden revolves around the coalfield constituencies that lent their votes to Boris Johnson's Conservatives. It still stands, support for the Labour Party has halved in a generation. Huw Beynon and Ray Hudson draw on decades of research to chronicle these momentous changes through the words of the people who lived through them.

Diet and Health examines the many complex issues concerning diet and its role in increasing or decreasing the risk of chronic disease. It proposes dietary recommendations for reducing the risk of the major diseases and causes of death today: atherosclerotic cardiovascular diseases (including heart attack and stroke), cancer, high blood pressure, and dental caries.

Rust is an exciting new programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters - and what better way to learn than by making games. Each chapter in this book presents hands-on, practical projects ranging from "Hello, World" to building a full dungeon crawler game. With this book, you'll learn how to use Rust to create a game engine, and how to use Rust to create a game. Rust is an exciting programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters. With Rust, you have a shiny new playground where your game ideas can flourish. Each chapter in this book presents hands-on, practical projects that take you through the process of building a game engine, and how to use Rust to create a game. Rust is an exciting programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters. 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