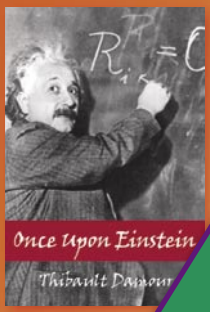
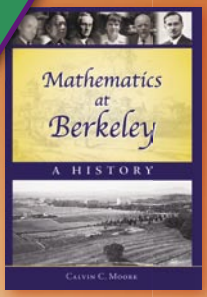
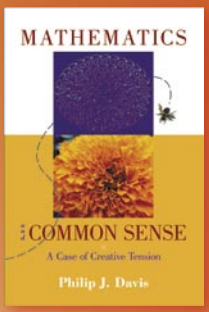
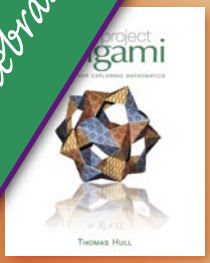




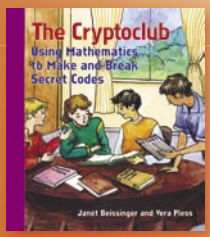


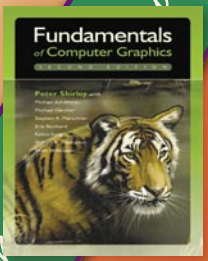


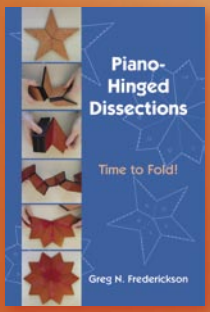
A K Peters, Ltd.

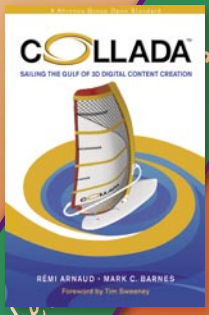
Complete Catalog

2007









Greetings from the Publisher

This past year was exciting and productive for A K Peters, with attendance at numerous successful conferences and exhibitions, several new co-publishing and distribution arrangements, and the addition of two new editors to our team.

At this year's **Eurographics** conference we concluded an agreement to be the exclusive distributor for all of the book publications, including all workshop proceedings, of the European Association for Computer Graphics (Eurographics). We have also signed a co-publishing agreement with the **Canadian Mathematical Society** for their new *Treatises in Mathematics* series. The first two publications in this series will be published in 2007.

In the beginning of 2006 we hired two new editors. **Kevin Jackson-Mead** (kevinjm@akpeters.com) will be developing our computer game publishing program and will also work with books in our existing and growing computer graphics list. **Eric Novak** (eric@akpeters.com) is focusing on our research-level mathematics books and on building our presence in physics.

As you browse through this catalog you will find an interesting and varied selection of new titles for 2007—some of which bring a unique flavor to our program. Highlights include a new edition of Laura Gould's ***Cats are Not Peas;*** a collection of mathematical detective stories written by a young high school student and aspiring mathematician, ***Crimes and Mathdemeanors***; an introductory book on the game design process, ***Game Design: From Blue Sky to Green Light***; a book that crosses the boundary between crafts and mathematics, ***Making Mathematics with Needlework***; and a popular science approach to cosmology, ***The Wraparound Universe.*** We hope you'll find the offerings in our catalog as inspiring and informative as we do.

As always, please contact us with any questions, suggestions, or project ideas.

Regards,

Alice Peters Klaus Peters

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Cats Are Not Peas

NEW

A Calico History of Genetics

SECOND EDITION

Laura Gould

Do you remember learning about dominant and recessive genes in biology class? About Gregor Mendel and his experiments with peas? The logic of genetics that came from those experiments supports the "well-known fact" that only female cats can be calico. When faced with an impossibility—an adopted cat that was definitely male and definitely calico—Laura Gould began to investigate the genetic facts behind her pet's existence. This charmingly written book offers an easily-accessible description of basic genetics and an exploration of the history of calico cats. The second edition includes an appendix outlining advances in genetics, particularly those related to cats, over the ten years since the publication of the first edition.

August 2007; ISBN 978-1-56881-320-2
Hardcover; approx. 250 pp.; $34.00

Crimes and Mathdemeanors

NEW

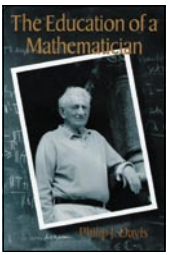
Leith Hathout

This collection of short detective stories, written by an award-winning young mathematician, provides exciting challenges for young adults who have graduated beyond the ever-popular *Encyclopedia Brown* mysteries series. The main character, Ravi, is a 14-year-old math genius who helps the local police solve cases by applying clever mathematical ideas and physical principles. Each chapter is a detective story with a mathematical puzzle at its core that Ravi is able to solve; the author invites the reader to solve the case on his or her own and then explains the mathematics used to find a solution to the puzzle.

April 2007; ISBN 978-1-56881-260-1
Paperback; approx. 150 pp. ; $16.00

The Education of a Mathematician

Philip J. Davis



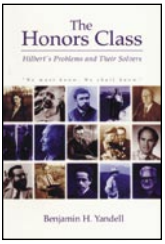
In this charming memoir, a renowned mathematician and winner of the American Book Award traces his career in mathematics from early lessons in horse racing and the realities of life to his adventures on the lecture circuit. A thought-provoking mix of autobiography, history, and insights into the role of mathematics in everyday life, this highly entertaining book will appeal to all readers.

2000; ISBN; 978-1-56881-116-1
Hardcover; 368 pp.; $34.00

The Honors Class

Hilbert's Problems and Their Solvers

Ben Yandell



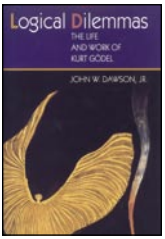
This eminently readable book focuses on the people of mathematics and draws the reader into their fascinating world. In a monumental address, given to the International Congress of Mathematicians in Paris in 1900, David Hilbert, perhaps the most respected mathematician of his time, developed a blueprint for mathematical research in the new century. Jokingly called a natural introduction to thesis writing with examples, this collection of problems has indeed become a guiding inspiration to many mathematicians, and those who succeeded in solving or advancing their solutions form an Honors Class among research mathematicians of this century. In a remarkable labor of love and with the support of many of the major players in the field, Ben Yandell has written a fascinating account of the achievements of this Honors Class, covering mathematical substance and biographical aspects.

2003; ISBN 978-1-56881-216-8 Paperback; 486 pp.; $24.95

Logical Dilemmas

The Life and Work of Kurt Gödel

John Dawson



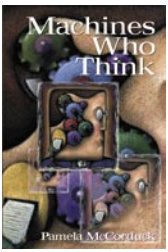
This authoritative biography of Kurt Gödel relates the life of this most important logician of our time to the development of the field. Gödel's seminal achievements that changed the perception and foundations of mathematics are explained in the context of his life from turn of the century Austria to the Institute for Advanced Study in Princeton.

2005; ISBN 978-1-56881-256-4
Paperback; 376 pp.; $34.00

Machines Who Think

SECOND EDITION—25TH ANNIVERSARY UPDATE

Pamela McCorduck



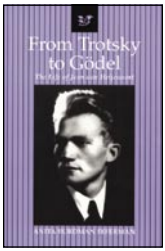
Machines Who Think, an international cult classic which stayed in print for nearly twenty years, is back, along with an extended addition that brings the field up to date in the last quarter century, including its scientific and its public faces. McCorduck shows how, from a slightly dubious fringe science, artificial intelligence has moved slowly (though not always steadily) to a central place in our everyday lives, and how it will be even more crucial as the World Wide Web moves into its next generation.

2004; ISBN 978-1-56881-205-2 Paperback; 576 pp.; $19.95

From Trotsky to Gödel

The Life of Jean van Heijenoort

Anita Burdman Feferman



This story of a highly intelligent observer of the turbulent 20th century who was intimately involved as the secretary and bodyguard to Leon Trotsky is based on extensive interviews with the subject, Jean van Heijenoort, and his family, friends, and colleagues. The author has captured the personal drama and the professional life of her protagonist—ranging from the political passion of a young intellectual to the scientific and historic work in the most abstract and yet philosophically important area of logic—in a very readable narrative.

"[A] moving, original book."—George Steiner, *The New Yorker*

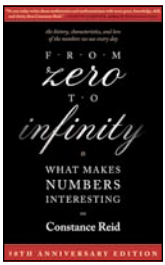
2001; ISBN 978-1-56881-148-2 Paperback; 432 pp.; $24.95

From Zero to Infinity

What Makes Numbers Interesting

50TH ANNIVERSARY EDITION

Constance Reid



After half a century in print, this small classic—like mathematics itself—is still "as fresh as May." You may have seen films, read novels, and applauded plays that have attempted to convey the beauty and power of mathematics. Now it's time for a glimpse of the real thing. *From Zero to Infinity* can be read with pleasure by anyone of any age who is mathematically inclined. All that is needed is a bit of algebra. It is a book that has on occasion changed lives. Buy one for yourself and one for a gift. You may make a youngster into a mathematician.

"No one today writes about mathematics and mathematicians with more grace, knowledge, skill, and clarity than Constance Reid."

—Martin Gardner, author of *Mathematical Games*

"With sly wit, Reid offers a quirky, insightful romp through the fascinating realm of numbers."—Ivars Peterson, *Science News*

2006; ISBN 978-1-56881-273-1 Paperback; 208 pp.; $19.95

Guaranteed Heartbreak NEW

Loving and Hating Mathematics

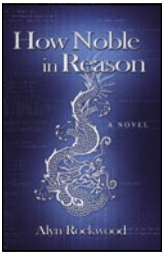
Reuben Hersh, Vera John-Steiner

Guaranteed Heartbreak reveals the emotional side of mathematical life, both for beginning learners and for the most illustrious. Narratives about famous and lesser known mathematicians tell of fascination and frustration, dejection and elation. The amazing life story of Alexander Grothendieck is a cautionary tale. The authors debunk the myth that math is a "young man's game." They explore mathematical beginnings, mathematical friendships, and mathematical culture, examine what it means to be an "insider" in mathematics, and tell about "outsiders" trying to balance their sense of marginality with their passionate engagement. This exploration of a neglected side of mathematical life will be of interest to researchers, educators, and anyone else who is interested in mathematics.

October 2007; ISBN 978-1-56881-237-3
Paperback; approx. 250 pp.; $29.95

How Noble in Reason

Alyn Rockwood



Dr. Andreas Rasmusson, creator of Cornell University's "A," "B," and "C" sentient computers, is accused of being involved in an attack that destroyed "B" while at the same time Rasmusson is approached by government officials to support a non-organic sentient monitoring bill, which goes against Rasmusson's beliefs in civil rights for the thinking machines. This is a fascinating novel that explores the controversial topic of our inevitable future with sentient robots.

"What appeals to me is the question: is destroying a sentient—that is, self-aware, conscious, feeling—computer the same as murder? After pondering this in the course of the novel, I rather think it is."
—Piers Anthony

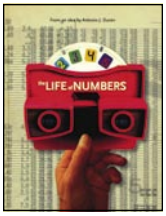
2006; ISBN 978-1-56881-288-5 Hardcover; 150 pp.; $24.95

The Life of Numbers

NEW

From an Idea by Antonio J. Durán

Articles by Antonio J. Durán, Georges Ifrah, Alberto Manguel



This book masterfully illustrates the life course of numbers, taking the reader on a walk through a museum of historical artifacts, manuscripts, and works of art. The authors recount how numbers lived in now extinct civilizations, with photographs of archaeological remains, Roman coins, pre-Romanesque manuscripts, incunabula; how people learned to use numbers to count, showing Renaissance mercantile arithmetic books; and how numbers evolved into the Western counting system that we use today, with the first recorded usage of the current arithmetic symbols. The authors explore not only the history and use of numbers, but also the physical shape of numbers assumed in writing, including their life at the printing presses at the height of the Renaissance, and in prints of Leonardo da Vinci and Durero, typographical designs, and both celestial and terrestrial maps.

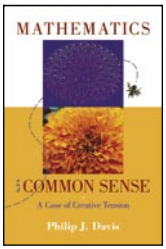
2006; ISBN 978-1-56881-325-7 Hardcover; 180 pp.; $38.00

Mathematics and Common Sense

NEW

A Case of Creative Tension

Philip J. Davis



Mathematics and its applications are amphibians that live between common sense and the irrelevance of common sense, between what is intuitive and what is counterintuitive, between the obvious and the esoteric. The tension that exists between these pairs of opposites is a source of the creative strength of mathematics. Addressed to all who are curious about mathematics and who wonder about its nature and the role it plays in society, this book provides discussions and examples from the simple to the more abstruse. What is mathematical intuition? If mathematics says "No," does it really mean it? Why is counting impossible? Phil Davis answers these questions and more as he explores the confusing relationship between mathematics and common sense.

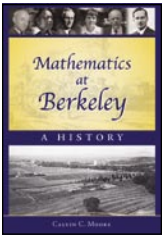
2006; ISBN 978-1-56881-270-0 Hardcover; 250 pp.; $34.95

Mathematics at Berkeley

NEW

A History

Calvin C. Moore



In this fascinating history of the mathematics department at the University of California, Berkeley, Moore describes how this institution evolved from a single faculty member at a financially troubled private college into a major research center that is ranked among the very best in the US and in the world. Moore's account spans from its origins in the 1850s to the establishment and early years of the Mathematical Sciences Research Institute (MSRI) in the early to mid 1980s.

January 2007; ISBN 978-1-56881-302-8
Hardcover; 376 pp.; $39.00

Numbers at Work

NEW

A Cultural Perspective

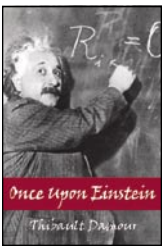
Rudolf Taschner

Drawing primarily from historical examples, this book explains the tremendous role that mathematics and, in particular, numbers play in all aspects of our civilization and culture. The lively style and illustrative examples will engage the reader who wants to understand the many ways in which mathematics enables science, technology, art, music, politics, and rational foundations of human thought. Each chapter focuses on the influence of mathematics in a specific field and on a specific historical figure, such as "Pythagoras: Numbers and Symbol"; "Bach: Numbers and Music"; and "Descartes: Numbers and Space."

April 2007; ISBN 978-1-56881-290-8
Hardcover; approx. 200 pp.; $35.00

Once Upon Einstein

Thibault Damour



Everyone knows that Einstein created the physics of the twentieth century through his work on relativity and quantum theory. But what do we really know about the essence of Einstein's ideas and how do we perceive the depth of their conceptual revolution? Through the choice of concrete scenes from the life of Einstein, the author lets us relive the formation of his theories. The book involves us in a reflection on their philosophical impact. How does one experience time after the theory of relativity, which removes any sense of "now" and shows that twins can be of different age? The book accompanies Einstein through his life and scientific work, and points out daily applications of his ideas: from Lasers to Global Positioning Systems.

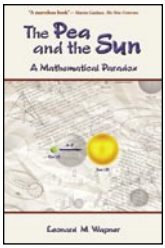
2006; ISBN 978-1-56881-289-2 Paperback; 199 pp.; $24.95

The Pea and the Sun

NOW IN PAPERBACK

A Mathematical Paradox

Leonard M. Wapner



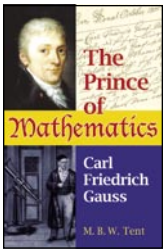
The Banach-Tarski Theorem is regarded by some as the most surprising result of modern mathematics. Also known as the Banach-Tarski Paradox, or the "Pea and the Sun" paradox, the theorem asserts that a solid ball can be decomposed into a finite number of pieces, then be reassembled to form two balls, each identical in size to the original. Paradoxical as this may appear, the theorem is generally regarded as true. The presentation includes brief biographies of the "main characters," mathematical recreations similar in appearance to the Banach-Tarski Paradox, and an interpretation of the theorem's stunning conclusion.

2007; ISBN 978-1-56881-327-1 Paperback; 232 pp.; $18.00
2005; ISBN 978-1-56881-213-7 Hardcover; 232 pp.; $34.00

The Prince of Mathematics

Carl Friedrich Gauss

M. B. W. Tent



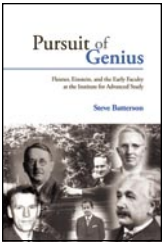
The author narrates the life of Carl Friedrich Gauss, the 18th century mathematician, from his prodigious childhood to his extraordinary achievements that earned him the title "Prince of Mathematics." Along the way, the author introduces her readers to a different culture, the era of small states in Germany where advancement on merits, such as Gauss', was supported by enlightened rulers, competing for intellectual excellence and economic advantage through scientific progress in their small states. Based on extensive research of original and secondary sources, the author has created an historical narrative that will inspire young readers and even curious adults with a story full of human touch and personal achievement.

2006; ISBN 978-1-56881-261-8 Hardcover; 264 pp.; $27.95

Pursuit of Genius

Flexner, Einstein, and the Early Faculty at the Institute for Advanced Study

Steve Batterson



The United States first attained its dominant standing in mathematical research when, in 1933, the Institute for Advanced Study opened in Princeton. Suddenly a New Jersey town surpassed the legendary European centers. Among the scholars taking up residence in the Institute's School of Mathematics were Albert Einstein, John von Neumann, Hermann Weyl, and Kurt Gödel. Two other schools soon joined Mathematics to broaden the Institute for Advanced Study's curriculum. The great art historian Erwin Panofsky and several archeologists were selected to staff the School of Humanistic Studies. Meanwhile the School of Economics and Politics opened with ambitious objectives. This book relies primarily on archival sources to explore the origin of the Institute for Advanced Study and its selection of subjects and personnel. Particular attention is devoted to the School of Mathematics. Its development is contrasted with that of the other two schools amidst the challenges of the Great Depression and available resources.

2006; ISBN 978-1-56881-259-5 Hardcover; 314 pp.; $39.00

Robots Unlimited

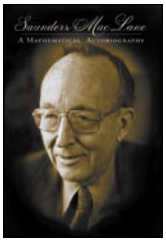
Life in a Virtual Age

David Levy

Consider this: Robots will one day be able to write poetry and prose so touching that it will make men weep; compose dozens or even hundreds of symphonies in the exact same style as Beethoven or Mozart; carry on a conversation as though from a persona of a Nobel winning scientist or a punk rocker; judge a court case with absolute impartiality and fairness; have humans fall in love with and marry them. Thought provoking and controversial? Certainly. But far-fetched? Not at all. David Levy presents a history of Artificial Intelligence, considers recent developments, and speculates about the future of AI in this engaging and informative book.

2005; ISBN 978-1-56881-239-7 Hardcover; 466 pp.; $34.95

Saunders Mac Lane
A Mathematical Autobiography
Saunders Mac Lane



Saunders Mac Lane's life has covered nearly a century of mathematical developments. During the earlier part of the 20th century, he participated in the exciting happenings in Göttingen—the Mecca of mathematics. Later, he contributed to the more abstract and general mathematical viewpoints developed in the 20th century. Perhaps the most outstanding accomplishment during his long and extraordinary career was creating the concept of categories together with Sam Eilenberg and developing them into a theory that has broad applications in different areas of mathematics, in particular topology and foundations. He was also a keen observer and active participant in the social and political themes of the 20th century. As a member and vice president of the National Academy of Science and an advisor to the Administration, he exerted considerable influence on science and education policies in the post-war period. Mac Lane's autobiography takes the reader on a journey through the most important milestones of the mathematical world in the 20th century.

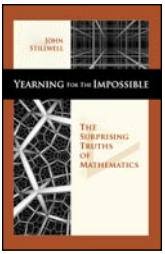
2005; ISBN 978-1-56881-150-5 Hardcover; 354 pp; $39.00

The Wraparound Universe **NEW**
Jean-Pierre Luminet

With the appearance of Einstein's theory of general relativity in the twentieth century, our understanding of the universe and its history was revolutionized, and cosmology was born as a scientific discipline. This book provides an engaging overview of the history of the subject and the science behind it for the general reader, leading to a question at the very frontier of research: what is the overall shape of the universe? Could the universe be wrapped around and reconnected to itself, leading to mirage stars as light twists along repeated paths through space? As the author explains, this is a question that modern experiments have started to address.

June 2007; ISBN 978-1-56881-309-7
Hardcover; approx. 350 pp.; $40.00

Yearning for the Impossible
The Surprising Truths of Mathematics
John Stillwell



This book is a novel introduction to mathematics and its history. It puts the difficulties of the subject up front by enthusiastically tackling the most important ones: the seemingly impossible concepts of irrational and imaginary numbers, the fourth dimension, curved space, and infinity. Related "impossibilities" arise in art, literature, philosophy, and physics—as the book shows—but only mathematics has the precision to separate the actual impossibilities from those that are only apparent. By focusing reason and imagination on several apparent impossibilities, the book aims to widen the horizons of beginning students, whose textbooks are necessarily rather narrow. It will also interest and delight readers with a good background in high school mathematics, provided they have the curiosity and perseverance to grapple with surprising ideas.

"One of the best expositors in mathematics achieves the almost impossible: to write a wonderful and readable story of the truly impossible."
—Piergiorgio Odifreddi, Columbia University, author of *The Mathematical Century: The 30 Greatest Problems of the Last 100 Years*

"This engaging book displays clearly and vividly the workings of the mathematical imagination over the centuries." —Philip J. Davis, Brown University, author of *Mathematics & Common Sense*

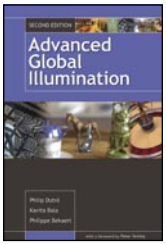
2006; ISBN 978-1-56881-254-0 Hardcover; 244 pp.; $29.95

Advanced Global Illumination

TEXT

SECOND EDITION

Philip Dutré, Kavita Bala, Philippe Bekaert



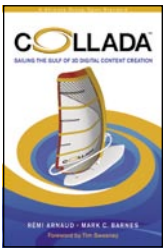
This book provides the reader with a fundamental understanding of global illumination algorithms. It discusses a broad class of algorithms for realistic image synthesis and introduces a theoretical basis for the algorithms presented.This completely updated second edition includes exercises for each chapter, new material on environment map sampling, lightcuts and precomputed radiance transfer, and expanded material on human perception.

2006; ISBN 978-1-56881-307-3 Hardcover; 384 pp.; $54.00

COLLADA

Sailing the Gulf of 3D Digital Content Creation

Remi Arnaud, Mark Barnes



COLLADA is a COLLAborative Design Activity for establishing an open standard Digital Asset schema for interactive 3D applications. It is aimed to be the centerpiece of Digital Asset tool chains. The COLLADA project was initiated by Sony Computer Entertainment during SIGGRAPH 2003, with the intent of raising the quality and ease of use of content for its next generation game platform, the Playstation 3. COLLADA was accepted by the Khronos Group as an industry standard, along with OpenGL, ES, and other APIs. The COLLADA schema is publicly accessible on the Internet for online content validation. COLLADA covers a large range of features such as animation, skinning, shader effects and physics in addition to the basics (geometry, material, transforms, and meta-data). This book explains in detail how to use the COLLADA technology in a project utilizing 3D assets, and ultimately how to create an effective content creation pipeline for the most complex development.

"This book makes available the results of a joint industry effort, spearheaded by Sony Computer Entertainment, Inc., to create a standard for digital asset exchange that enables Playstation® 3 to bring more realistic content to life and into the home like never before."
—Ken Kutaragi, President and CEO Sony Computer Entertainment

2006; ISBN 978-1-56881-287-8 Hardcover; 250 pp.; $49.00

Computational Photography

NEW

Mastering New Techniques for Lenses, Lighting, and Sensors

Ramesh Raskar, Jack Tumblin

Computational photography combines plentiful computing, digital sensors, modern optics, actuators, probes, and smart lights to escape the limitations of traditional film cameras and enables novel imaging applications. The computational techniques discussed in this book cover topics in exploiting new ideas in manipulating optics, illumination, and sensors at time of capture. In addition, the authors describe sophisticated reconstruction procedures from direct and indirect pixel measurements that go well beyond the traditional digital dark-room experience. This book provides a practical guide to topics in image capture and manipulation methods for generating compelling pictures for graphics, special effects, scene comprehension, and art.

August 2007; ISBN 978-1-56881-313-4
Hardcover; approx. 200 pp.; $39.00

Computer Facial Animation

NEW

SECOND EDITION

Frederic I. Parke, Keith Waters

Praise for the first edition: "The collaborative effort of computer animation experts Frederic I. Parke and Keith Waters, *Computer Facial Animation* is a fascinating, in-depth, and thoroughly "user friendly" technical guide to the art and craft of three-dimensional computer animation, especially as applied to faces and expressions. An in-depth, exhaustive, and scholarly "how-to" text, *Computer Facial Animation* is an impressively comprehensive, 365-page textbook which is especially recommended for advanced students of graphics, mathematics, and programming." This new edition incorporates many of the new approaches to facial modeling and animation that have been developed over the last decade while refining and updating the essential content of the original book.

July 2007; ISBN 978-1-56881-333-2
Hardcover; approx. 400 pp.; $59.00

Data Visualization

NEW
TEXT

Principles and Practice

Alexandru Telea

This is an introductory textbook to the field of data visualization that allows readers to quickly start working with its techniques. Theory and algorithms for a wide range of visualization techniques and applications are presented, including engineering, medical, and mathematical applications. The book also includes practical examples in C++ and OpenGL.

September 2007; ISBN 978-1-56881-306-6
Hardcover; approx. 400 pp.; $49.00

Essential Concepts for Building Interactive Computer Graphics Applications

NEW
TEXT
CD-ROM

Kelvin Sung, Peter Shirley, Steven Baer

This undergraduate computer graphics textbook provides students with conceptual and practical insights into how to approach building a majority of the interactive graphics applications they encounter daily. As each topic is introduced, students are guided in developing a software library that will support fast prototyping of moderately complex applications using a variety of APIs, including OpenGL and DirectX. An accompanying CD contains all of the code from the book.

December 2007; ISBN 978-1-56881-257-1
Hardcover; approx. 400 pp.; $69.00

Fluid Simulation

NEW

Robert Bridson

Animating fluids like water, smoke, and fire using physics-based simulation is increasingly important in visual effects, in particular in movies and in computer games. This book provides a practical introduction to fluid simulation for graphics. The focus of this book is on animating fully three-dimensional incompressible flow, from understanding the math and the algorithms to the actual implementation. Some advanced topics such as fire and explosions, adaptive grid methods, real-time-capable algorithms, together with the latest technology in hardware acceleration and non-Newtonian fluids like sand, will also be covered. Intuition and implementation details will be emphasized throughout.

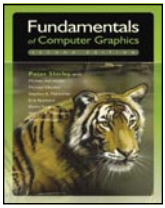
July 2007; ISBN 978-1-56881-326-4
Hardcover; approx. 300 pp.; $59.00

Fundamentals of Computer Graphics

TEXT

SECOND EDITION

Peter Shirley et al.

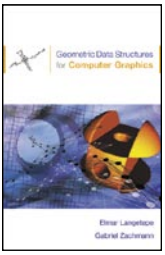


The second edition of this widely adopted text includes a wealth of new material, with new chapters on Signal Processing (Stephen R. Marschner), Using graphics hardware (Peter Willemsen), Writing graphics applications (Kelvin Sung), Perception (William B. Thompson), Curves (Michael Gleicher), Animation (Michael Ashikhmin), and Tone reproduction (Erik Reinhard). Maintaining the strengths of the first edition, the authors present the mathematical foundations of computer graphics with a focus on geometric intuition, allowing the programmer to understand and apply those foundations to the development of efficient code.

2005; ISBN 978-1-56881-269-4 Hardcover; 652 pp.; $74.00

Geometric Data Structures for Computer Graphics

Elmar Langetepe, Gabriel Zachmann



This book provides practitioners in the computer graphics field with a working knowledge of widespread geometric data structures from computational geometry, including some theoretical background. The focus is on algorithms and data structures that have proven to be versatile, efficient, fundamental, and easy to implement. Thus, this book will be a valuable source of information for practitioners' daily work.

2005; ISBN 978-1-56881-235-9 Hardcover; 369 pp.; $59.00

Graphics and Visualization

NEW
TEXT

Principles & Algorithms

Theoharis Theoharis, Georgios Papaioannou, Nikos Platis, Nicholas Patrikalakis

With contributions by Philip Dutré and Ahmad Nasri

This book encompasses pervasive recent developments in visual computing in a unified approach that bridges established computer graphics and visualization principles and algorithms. All algorithm descriptions are given in a C-like pseudocode in order to make the book as generally applicable as possible.

June 2007; ISBN 978-1-56881-274-8
Hardcover; approx. 600 pp.; $74.00

Graphics Tools

The jgt Editors' Choice

Edited by Ronen Barzel

This volume contains the editorial board's choice for the best and most practically useful papers of the first eight years of jgt.

2005; ISBN 978-1-56881-246-5 Hardcover; 376 pp.; $49.00

Haptic Rendering

NEW

Ming Lin, Miguel Otaduy

Haptic interfaces provide an effective augmentation to graphical display and improve the level of presence in a virtual environment, by exploiting the sense of touch. This book provides an authoritative overview of state-of-the-art haptic-rendering algorithms and their applications. It also covers the psychophysics of haptic rendering,haptic-device design methodologies, force-feedback control and stability analysis, tactile sensing and rendering, and many other system-integration issues. In addition, the book examines different approaches and techniques for designing touch-enabled interfaces for several applications, including medical training, model design and maintainability analysis for virtual prototyping, scientific visualization, and creative processes.

August 2007; ISBN 978-1-56881-332-5
Hardcover; approx 400 pp.; $64.00

A Hitchhiker's Guide to Virtual Reality

NEW
TEXT
CD-ROM

Karen McMenemy, Stuart Ferguson

This book is a two-part guide to the science, technology, mathematics, and practical implementation of virtual reality. Part 1 contains an explanation of what VR is (and what it is not!) and what lies inside the hardware components of a VR system. It also details the theory of many technically challenging aspects of VR in a very coherent manner. These include stereoscopy, computer vision, image-based rendering and inverse kinematics, all of which are central to creating an immersive and interactive VR system. Part 2 of the book concentrates on the actual implementation of a practical VR system. The accompanying CD provides over 30 projects and associated software programs that can be used to implement many aspects of a VR system.

April 2007; ISBN 978-1-56881-303-5
Hardcover; approx. 500 pp.; $69.00

Illustrative Graphics and Visualization

NEW
DVD-R

The Art and Science of Non-Photorealistic Rendering

Amy Gooch, Bruce Gooch, Mario Costa-Sousa

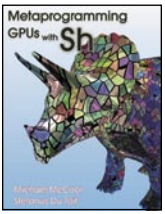
With contributions by Bill Andrews, David S. Ebert, Don Stredney, Daniel Teece, and Ivan Viola

This book provides a review of current trends in the area often referred to as "non-photorealistic rendering" (NPR). NPR images are created using a variety of methods, from the simulation of traditional artistic media to the incorporation of many types of structural correspondence and styles already developed by artists, illustrators, and scientists. The authors provide a review of this rapidly growing area, including simulating artistic materials, perception and interaction, modeling, rendering, and composition. They also cover specialized applications such as animation production and medical visualization. The book includes a DVD with a wealth of supplemental material, including imagery, movies, executables, and code.

August 2007; ISBN 978-1-56881-219-9
Hardcover; approx. 300 pp.; $49.00

Metaprogramming GPUs with Sh

Michael McCool, Stefanus Du Toit



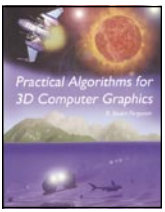
Shading, as part of the creation of realistic computer-generated images, is currently bringing major advances to computer graphics, with important practical applications in computer game design and animation. Shaders are a more sophisticated way of making 3D objects look more realistic. While most shaders are created using proprietary shading languages, Sh, a new open-source system, simplifies the shader programming process by making it part of the C++ language. This book introduces Sh and describes how to program a GPU using C++ to implement both basic and advanced shading techniques. Readers of this book will be able to start writing advanced, modular shaders using Sh within a day!

2004; ISBN 978-1-56881-229-8 Paperback; 307 pp.; $44.00

Practical Algorithms for 3D Computer Graphics

TEXT
CD-ROM

R. Stuart Ferguson



The topics covered in this book provide the tools for creating a complete suite of programs for three-dimensional computer animation, modeling, and image synthesis. The text takes the reader from the construction of polygonal models of objects through rigid body animation into hierarchical character animation, and finally down the rendering pipeline for the synthesis of realistic images. Required reading for game programmers, movie animators, and graphics programmers. CD with sample programs included.

2001; ISBN 978-1-56881-154-3 Paperback; 552 pp.; $49.00

Practical Multi-Projector Display Design

NEW
CD-ROM

Aditi Majumder, Michael S. Brown

This book provides a thorough description of the state-of-the-art techniques for building affordable and flexible large-area multi-projector displays. The emphasis is on current solutions to the practical issues that must be addressed in large-area display deployment. In addition, the role of multi-projector techniques to other projector-camera based large-scale visualization, virtual reality, computer graphics and vision applications will be discussed.

August 2007; ISBN 978-1-56881-310-3
Hardcover; approx. 350 pp.; $69.00

Ray Tracing from the Ground Up

NEW
TEXT
CD-ROM

Kevin Suffern

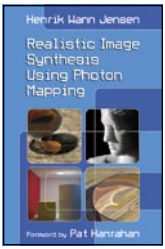
Ray tracing is the most flexible rendering technique because of its unrivaled ability to simulate optical effects. This book takes readers through the whole process of building a modern ray tracer from scratch in C++. All concepts and processes are explained in detail with the aid of hundreds of diagrams, ray traced images, and sample code. The book is self contained as far as graphics is concerned. It's suitable for undergraduate and graduate computer graphics courses and individual programmers who would like to learn ray tracing. The accompanying CD contains a simple ray tracer to get readers started, sample code, and ray traced images with C++ code for constructing each scene.

June 2007; ISBN 978-1-56881-272-4
Hardcover; approx. 700 pp.; $75.00

Realistic Image Synthesis Using Photon Mapping

TEXT

Henrik Wann Jensen



This book is a practical guide to photon mapping; it provides both the theory and the practical insight necessary to implement photon mapping and simulate all types of direct and indirect illumination efficiently.

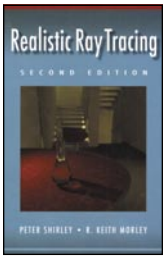
"Well presented and very well researched... well written and thorough."—*SIAM Review*

2001; ISBN 978-1-56881-147-5
Hardcover; 193 pp.; $39.00

Realistic Ray Tracing

SECOND EDITION

Peter Shirley, R. Keith Morley



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 other details to provide the reader with a better intuitive understanding of ray tracing algorithms.

2003; ISBN 978-1-56881-198-7 Hardcover; 235 pp.; $39.00

Real-Time Rendering

TEXT

SECOND EDITION

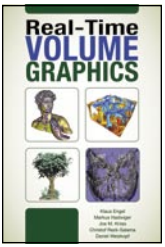
Tomas Akenine-Möller, Eric Haines

"I can't think of any higher praise for a book than the fact that it's always on my desk and within easy reach, and *Real-Time Rendering, 2nd Edition* is one of the few books that qualifies for that distinction. *Real-Time Rendering* provides thorough coverage of the current state of the art in real-time graphics, as well as case studies, appendices to help brush up your math skills, and a voluminous source bibliography. There's no doubt that this is a must-have volume for any graphics programmer."
—Herb Marselas, Ensemble Studios

2002; ISBN 978-1-56881-182-6 Hardcover; 864 pp.; $64.00

Real-Time Volume Graphics

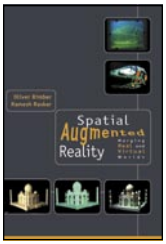
Klaus Engel, Markus Hadwiger, Joe Kniss, Christof Rezk-Salama, Daniel Weiskopf



A comprehensive guide of real-time volume graphics programming using commodity graphics hardware, this book covers both scientific applications, such as medical visualization, and volumetric effects for visual arts and games. Readers will learn to leverage the power of modern graphics processing units (GPUs) and high-level shading languages to create interactive 3D volume rendering applications. Starting off with a thorough introduction to the theory of volumetric effects, all the different solutions for real-time implementations are explained in detail. These basic techniques are improved step-by-step throughout the book, expanding them with a variety of visual effects, including non-photorealistic draw styles, global illumination, and scattering. Special attention is paid to usability aspects, including transfer function design, interaction, modeling, and animation. Detailed code samples are provided in OpenGL and Cg shading language.

2006; ISBN 978-1-56881-266-3 Hardcover; 515 pp.; $64.00

Spatial Augmented Reality
Merging Real and Virtual Worlds
Oliver Bimber, Ramesh Raskar



Novel approaches have taken augmented reality (AR) beyond traditional eye-worn or hand-held displays, enabling new application areas for museums, edutainment, research, industry, and the art community. This book discusses spatial augmented reality approaches that exploit large optical elements and video-projectors, as well as interactive rendering algorithms, calibration techniques, and display examples. It provides a comprehensive overview, detailed math, code fragments, and implementation instructions that enable interested readers to realize spatial AR displays by themselves.

2005; ISBN 978-1-56881-230-4 Hardcover; 392 pp.; $59.00

Graphics Interface Proceedings 2007 NEW
Canadian Human-Computer Communications Society
Edited by Christopher Healey, Edward Lank

Graphics Interface Proceedings is a collection of the papers presented at the annual gathering of the Canadian Human-Computer Communications Society. Graphics Interface is the Canadian annual conference devoted to computer graphics, interactive systems, and human-computer interaction. It is the oldest regularly-scheduled computer graphics and human-computer interaction conference; the first conference was held in 1969.

2007; ISBN 978-1-56881-337-0 Paperback; 250 pp.; $70.00

Earlier proceedings available at www.akpeters.com.

Video-Based Rendering
Marcus Magnor

This book provides an in-depth introduction to video-based rendering (VBR), the art of interactively rendering realistic views of real-world, dynamic scenes from multi-video recordings alone. State-of-the-art VBR algorithms, such as dynamic light field rendering, real-time visual hull reconstruction, space-time–coherent rendering, passive optical motion capture, and more, are comprehensively explained and compared, revealing the advantages and limitations of various VBR approaches.

2005; ISBN 978-1-56881-244-1 Hardcover; 224 pp.; $45.00

Andrew Glassner's Other Notebook
Further Recreations in Computer Graphics
Andrew Glassner

2002; ISBN 978-1-56881-171-0 Paperback; 276 pp.; $45.00

Cloth Modeling and Animation
Edited by Donald House, David Breen

2000; ISBN 978-1-56881-090-4 Hardcover; 360 pp.; $49.00

Curves and Surfaces in Geometric Design
Edited by Pierre-Jean Laurent, Alain Le Méhauté, Larry Schumaker

1994; ISBN 978-1-56881-039-3 Hardcover; 490 pp.; $85.00

The Essentials of CAGD TEXT
Gerald Farin, Dianne Hansford

2000; ISBN 978-1-56881-123-9 Hardcover; 248 pp.; $49.00

A Field Guide to Digital Color
Maureen Stone

2003; ISBN 978-1-56881-161-1 Paperback; 250 pp.; $48.00

Fundamentals of Computer Aided Geometric Design
Josef Hoschek, Dieter Lasser

1993; ISBN 978-1-56881-007-2 Hardcover; 752 pp.; $84.00

Geometric Concepts for Geometric Design
Wolfgang Boehm, Hartmut Prautzsch

1994; ISBN 978-1-56881-004-1 Hardcover; 424 pp; $59.00

Geometric Modeling with Splines
An Introduction
Elaine Cohen, Richard F. Riesenfeld, Gershon Elber

2001; ISBN 978-1-56881-137-6 Hardcover; 638 pp. $59.00

Morphs, Mallards, and Montages
Computer-Aided Imagination
Andrew Glassner

2004; ISBN 978-1-56881-231-1 Paperback; 360 pp.; $49.00

Multiprocessor Methods for Computer Graphics Rendering
Scott Whitman

1992; ISBN 978-0-86720-229-8 Hardcover; 232 pp.; $65.00

Non-Photorealistic Rendering
Bruce Gooch, Amy Gooch
2001; ISBN 978-1-56881-133-8 Hardcover; 254 pp.; $39.00

NURBS for Curve and Surface Design
From Projective Geometry to Practical Use
SECOND EDITION
Gerald Farin
1999; ISBN 978-1-56881-084-3 Hardcover; 282 pp.; $49.00

A Physical Approach to Color Image Understanding
Gudrun Klinker
1993; ISBN 978-1-56881-013-3 Hardcover; 192 pp.; $49.00

Physics-Based Vision: Principles and Practice
Three-Volume Set: $230.00

Radiometry, Vol. 1
Edited by Lawrence B. Wolff, Steven A. Shafer, Glenn E. Healey
1992; ISBN 978-0-86720-294-6 Hardcover; 424 pp.; $86.00

Color, Vol. 2
Edited by Steven A. Shafer, Glenn E. Healey, Lawrence B. Wolff
1992; ISBN 978-0-86720-295-6 Hardcover; 432 pp.; $86.00

Shape Recovery, Vol. 3
Edited by Lawrence B. Wolff, Steven A. Shafer, Glenn E. Healey
1992; ISBN 978-0-86720-296-0 Hardcover; 544 pp.; $86.00

Practical Parallel Rendering
Edited by Alan Chalmers, Erik Reinhard, Tim Davis
2002; ISBN 978-1-56881-179-6 Hardcover; 384 pp.; $49.00

Real-Time Shading
Marc Olano, John Hart, Wolfgang Heidrich, Michael McCool
2002; ISBN 978-1-56881-180-2 Hardcover; 368 pp.; $49.95

Two- and Three-Dimensional Patterns of the Face
Peter W. Hallinan, Gaile Gordon, A. L. Yuille, Peter Giblin, David Mumford
1999; ISBN 978-1-56881-087-4 Hardcover; 270 pp.; $48.00

Wavelets, Images, and Surface Fitting
Edited by Pierre-Jean Laurent, Alain Le Méhauté, Larry Schumaker
1994; ISBN 978-1-56881-040-9 Hardcover; 544 pp.; $85.00

Eurographics

A K Peters is pleased to be the distributor of all Eurographics workshop proceedings. Titles published in 2006 and those forthcoming in 2007 are listed below. Earlier proceedings can also be ordered and are listed on our website.

Data Visualization 2007

Edited by Ken Museth, Torsten Möller, Anders Ynnerman

2007; ISBN 978-1-56881-362-2
Paperback; approx. 350 pp.; $74.00

Geometry Processing 2007

Edited by Alexander Belyaev, Michael Garland

2007; ISBN 978-1-56881-365-3
Paperback; approx. 250 pp.; $45.00

Parallel Graphics and Visualization 2007

Edited by Jean M. Favre, Luis Paulo dos Santos, Dirk Reiners

2007; ISBN 978-1-56881-363-9
Paperback; approx. 200 pp.; $39.00

Point Based Graphics 2007

Edited by M. Botsch, R. Pajarola

2007; ISBN 978-1-56881-366-0
Paperback; approx. 175 pp.; $39.00

Rendering Techniques 2007
Edited by Jan Kautz, Sumanta Pattanaik
2007; ISBN 978-1-56881-364-6
Paperback; approx. 450 pp.; $79.00

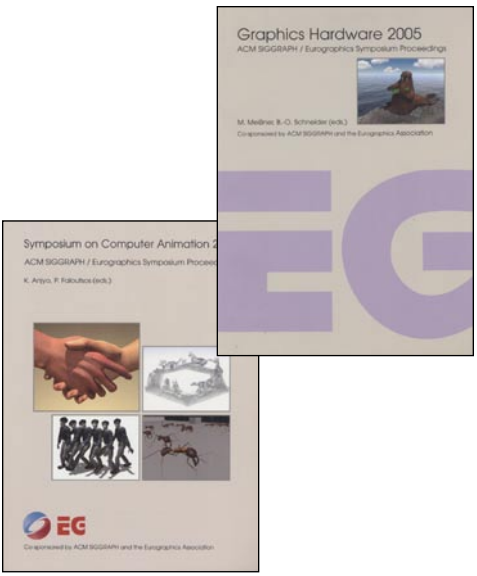
Volume Graphics 2007
Edited by H.-C. Hege, R. Machiraju
2007; ISBN 978-1-56881-367-7
Paperback; approx. 150 pp.; $39.00

Data Visualization 2006
Edited by Beatriz Sousa Santos, Thomas Ertl, Ken Joy
2006; ISBN 978-1-56881-359-2 Paperback; 380 pp.; $74.00

Geometry Processing 2006
Edited by Konrad Polthier, Alla Sheffer
2006; ISBN 978-1-56881-350-9 Paperback; 246 pp.; $49.00

Graphics Hardware 2006
Edited by Marc Olano, Philipp Slusallek
2006; ISBN 978-1-56881-354-7 Paperback; 130 pp.; $45.00

Natural Phenomena 2006
Edited by Eric Galin, Norishige Chiba
2006; ISBN 978-1-56881-355-4 Paperback; 98 pp.; $39.00



Parallel Graphics and Visualization 2006
Edited by Alan Heirich, Bruno Raffin, Luis Paulo dos Santos
2006; ISBN 978-1-56881-361-5 Paperback; 187 pp.; $39.00

Rendering Techniques 2006
Edited by Tomas Akenine-Möller, Wolfgang Heidrich
2006; ISBN 978-1-56881-351-6 Paperback; 444 pp.; $79.00

Sketch-Based Interfaces and Modeling 2006
Edited by Thomas Stachovich, Mario Costa-Sousa, Joaquim Armando Pires Jorge
2006; 978-1-56881-357-8 Paperback; 176 pp.; $45.00

Symposium on Computer Animation 2006
Edited by Marie-Paule Cani, James O'Brien
2006; ISBN 978-1-56881-356-1 Paperback; 374 pp.; $74.00

Symposium on Point-Based Graphics 2006
Edited by Mario Botsch, Baoquan Chen, Mark Pauly, Matthias Zwicker
2006; ISBN 978-1-56881-352-3 Paperback; 169 pp.; $39.00

VAST 2006
Edited by David Arnold, Marinos Ioannides, Katerina Mania, Franco Niccolucci
2006; ISBN 1-56881-358-5 Paperback; 276 pp.; $59.00

Virtual Environments 2006
Edited by Roger Hubbold, Ming Lin
2006; ISBN 978-1-56881-360-8 Paperback; 152 pp.; $35.00

Volume Graphics 2006
Edited by Torsten Möller, Raghu Machiraju, Min Chen, Thomas Ertl
2006; ISBN 978-1-56881-353-0 Paperback; 146 pp.; $39.00

Advanced Game Development with Programmable Graphics Hardware

TEXT **CD-ROM**

Alan Watt, Fabio Policarpo

Written by established authors in games technology and computer graphics, this book covers GPU techniques and supporting applications that are commonly used in games and similar real-time 3D applications. The authors describe the design of programs and systems that can be used to implement games and other applications whose requirements are to render real-time animation sequences as walks through (such complex scenes) at the high quality now available from GPUs. The book's CD includes implementation for most of the techniques covered and full source code for an advanced render library in C++/OpenGL. This library can be used to quickly develop 3D games and applications which make use of the advanced features available in current programmable graphics hardware like GPU-based animation, lighting, shadows and special effects.

2005; ISBN 978-1-56881-240-3 Hardcover; 384 pp.; $62.00

Artificial Intelligence for Computer Games

An Introduction

TEXT

John David Funge

This book concentrates on the techniques and strategies for developing efficient AI Engines for gaming applications. It will provide readers with a springboard for diving into more advanced and specialized material. Building on fundamental principles of artificial intelligence, the author explains how to create non-player characters (NPCs) with progressively more sophisticated capabilities. Starting with the basic capability of acting in the game world, the book explains how to develop NPCs who can then perceive the game world, react to what they perceive, remember what they perceive, and then to continue in the game play to think about the effects of possible actions and finally to learn from their experience. The author considers the system architecture and explains how to implement potential behaviors (both reactive and deliberate) for intelligent and responsive NPCs allowing for games that are more fun and engaging.

2004; ISBN 978-1-56881-208-3 Hardcover; 200 pp.; $35.00

AI for Games and Animation

John David Funge

1999; ISBN 978-1-56881-103-1 Hardcover; 228 pp; $39.00

Game Design

NEW **TEXT**

From Blue Sky to Green Light

Deborah Todd

This book takes a real-world, in-depth journey through the game design process, from the initial blue sky sessions to the decision and brainstorming phase, through character development and story wrap, to the creation of content and context outlines, flowcharting game play, creating design docs, and ultimately pitching for a green light. Special features include examples of both classic and contemporary games, plus interviews with many of the game industry's brightest professionals who share their insights on key elements in game design, and their analysis on what makes a game a blockbuster hit.

April 2007; ISBN 978-1-56881-318-9
Paperback; 350 pages; $45.00

Game Development

NEW **TEXT**

Design, Process, and Innovation of Computer Games

Morgan McGuire, Odest Chadwicke Jenkins

This book is a comprehensive overview of the technology and mechanisms of game design. It emphasizes the broad view of a games team and teaches you enough about your teammates' areas so that you can work effectively with them. It includes many worksheets and exercises to help get your small indie team off the ground. By the end of the book, you'll have a game!

December 2007; ISBN 978-1-56881-305-9
Hardcover; approx. 200 pp.; $34.95

The Game Programmer's Guide to Torque

Under the Hood of the Torque Game Engine

CD-ROM

Edward F. Maurina III

Powerful game engines drive the core technologies in modern 3D games. *The Game Programmer's Guide to Torque* takes readers on an in-depth walkthrough of the Torque Game Engine—one of the most popular, powerful, and easy to use game engines available today. With clear explanations of how to use Torque to create your own games and detailed discussions of the engine's inner workings, this book is a must read for any programmer interested in making games for fun or profit. Step-by-step examples, detailed system descriptions, in-depth references, and practical tips and tricks provide readers all they need to understand and develop advanced 3D games on their own terms.

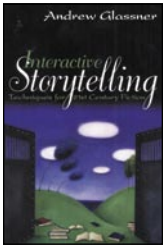
2006; ISBN 978-1-56881-284-7 Paperback; 600 pp. $59.00

A GARAGEGAMES BOOK

Interactive Storytelling

Techniques for 21st Century Fiction

Andrew Glassner



We are on the verge of developing an exciting new kind of interactive story form that will involve audiences as active participants. This book provides a solid foundation in the fundamentals of classical story and game structure and explains why it has been surprisingly difficult to bring these two activities together. With this foundation in place, the book presents several ideas for ways to move forward in this appealing quest. "The intersection of story and games will be one of the most influential creative impacts in the future of media. Andrew Glassner's book is the most comprehensive and in-depth reference I have seen that examines how both story and games can work in concert to create the future of storytelling." —Christopher Stapleton, Director of Entertainment Research, Institute for Simulation and Training

2004; ISBN 978-1-56881-221-2 Paperback; 528 pp.; $35.00

Modeling and Simulation Design

NEW TEXT

Philip Tavel

This is an introduction to modeling and simulation with applications in the military, academia, serious games, and more. This textbook covers design, programming, and assessment of modeling and simulation technologies, highlighted with real-world examples. The author also discusses the economics of the modeling and simulation industry, including how and where to get a job.

November 2007; ISBN 978-1-56881-317-2
Hardcover; approx. 350 pp.; $59.00

Working Indie

NEW

The Independent Industry in Film and Video Games

Trevor Elkington

This book uses a blend of history, statistical analysis, and qualitative case studies to draw prescriptive conclusions about independent production. In addition to looking at larger industry trends, each chapter focuses on illustrative examples of film and video game development that demonstrate successful and unsuccessful strategies for negotiating specific obstacles within each stage of creation. These case studies are then set against the larger context of industry history. Each chapter concludes with a summary of specific challenges facing independent video game production, the lessons that can be drawn from independent film history and the apparent successful and unsuccessful strategies learned from the selected video game case studies.

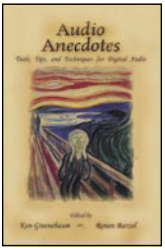
December 2007; ISBN 978-1-56881-311-0
Paperback; approx. 350 pp.; $39.00

Audio Anecdotes

CD-ROM

Tools, Tips, and Techniques for Digital Audio

Edited by Ken Greenebaum, Ronen Barzel



Audio Anecdotes does for the technology of computer sound what *Graphics Gems* did for computer graphics. It provides short articles on current research and development that deal with the production, capture, and manipulation of sound by computers. Its scope reaches from signal processing algorithms to essays on the creative process. Programmers, researchers, sound engineers, and audio artists interested in new technology will find this book indispensable.

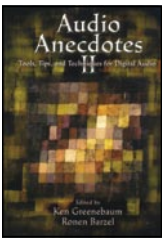
2004; ISBN 978-1-56881-104-8 Hardcover; 512 pp.; $65.00

Audio Anecdotes II

CD-ROM

Tools, Tips, and Techniques for Digital Audio

Edited by Ken Greenebaum, Ronen Barzel



The second volume in this collection continues the exploration and coverage of topical issues in digital audio.

It is written for a professional audience of users and draws on the experience of experts who are at the cutting edge of their subject.

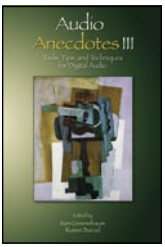
2004; ISBN 978-1-56881-214-4
Hardcover; 456 pp.; $65.00

Audio Anecdotes III

NEW CD-ROM

Tools, Tips, and Techniques for Digital Audio

Edited by Ken Greenebaum, Ronen Barzel

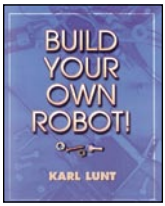


The third volume in this collection completes the coverage of current methods and techniques in digital audio. The three volumes form a comprehensive library for practitioners as well as researchers and developers who need interdisciplinary knowledge in the field of digital audio and its applications.

March 2007; ISBN 978-1-56881-215-1
Hardcover; approx. 400 pp.; $65.00

Build Your Own Robot!

Karl Lunt



This book, a compilation of articles from Karl Lunt's long-running column for Nuts & Volts magazine, is a must-read for all beginner and intermediate-level robotics enthusiasts. Written in a friendly, straight forward manner, it contains entertaining anecdotes as well as practical advice and instruction. The author's stories about his various robotics projects will inspire you to try them yourself—and he shares his tips and code to help you. Possible projects range from transforming a TV remote control into a robot controller to building a robot from a drink cooler. You'll want to build them all—the author's enthusiasm for robotics is contagious!

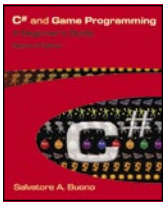
2000: ISBN 978-1-56881-102-4 Paperback; 592 pp.; $34.00

C# and Game Programming CD-ROM

A Beginner's Guide

SECOND EDITION

Salvatore Buono



This second edition offers the same practical, hands-on approach as the first edition to learning the C# language through classic arcade game applications. This new edition supports DirectX 9.0, includes revised programs and examples, and improved frame rate for game examples. Complete source code on CD-ROM for action-packed games such as Battle Tennis, Asteroid Miner, Rat Racer, Space Fighter, Ground Assault, and more.

2005; ISBN 978-1-56881-236-6 Paperback; 492 pp.; $49.00

Computer Arithmetic Algorithms

SECOND EDITION

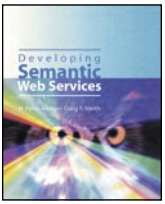
Israel Koren

The author explains the fundamental principles of algorithms available for performing arithmetic operations on digital computers, independent of a particular technology employed for their implemetation. Numerical examples illustrate the working of the algorithms presented and explain the concepts behind the algorithms without relying on gate diagrams.

2002; ISBN 978-1-56881-160-4 Hardcover; 296 pp.; $54.00

Developing Semantic Web Services CD-ROM

H. Peter Alesso, Craig F. Smith



With the development of the next generation Web architecture, the Semantic Web, new markup languages poised to unleash the power, flexibility, and above all—logic—of these Web Services have been created. This book presents the new generation of Web markup languages, including Resource Description Framework (RDF), Ontology Web Language (OWL) and OWL-Services (OWL-S) along with examples and software demos. Software development tools, including parsers, validators, editors, development environments, and inference engines are described.

2004; ISBN 978-1-56881-212-0 Paperback; 464 pp.; $59.00

Fundamental Concepts of Computer Science NEW TEXT

James Arvo

The focus of this text is automata theory, formal languages, and computability. It covers mathematical formalisms like set theory, induction, and logic, and covers several models of computation, including Turing machines, random access machines, and recursive functions. Much emphasis is placed on the theory of NP-Completeness and its parallels with undecidability.

May 2007; ISBN 978-1-56881-278-6
Hardcover; approx. 250 pp.; $49.00

Reconfiguring the Firewall NEW

Recruiting Women to Information Technology Across Cultures and Continents

Edited by Carol J. Burger, Elizabeth G. Creamer, Peggy S. Meszaros

This edited volume addresses the challenge of recruiting girls and women into majors and careers in information technology. This is explored across cultures and regions, and the studies are both illuminating and prescriptive for designing and implementing intervention programs. The cross-cultural aspect is emphasized, including studies in Europe, Africa, and Australia.

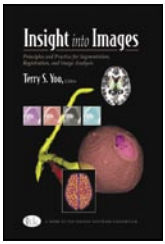
April 2007; ISBN 978-1-56881-314-1;
Hardcover; approx. 350 pages; $39.00

Insight into Images

Principles and Practice for Segmentation, Registration, and Image Analysis

Edited by Terry S. Yoo

A WORK OF THE INSIGHT CONSORTIUM



The Insight Toolkit (ITK) is an open source library of object-oriented software components for image processing, data segmentation, and registration; it provides advanced algorithms for filtering, segmentation, and registration of volumetric data. This book describes the principles of all methods implemented in the Toolkit including greater background on the theory behind the methods and as such is an extended reference for ITK. The book can also be the basis for a graduate course on medical image processing.

2004; ISBN 978-1-56881-217-5 Hardcover; 410 pp.; $64.00

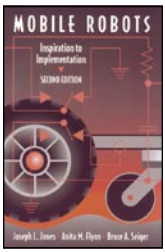
Mobile Robots

TEXT

Inspiration to Implementation

SECOND EDITION

Joseph L. Jones, Anita M. Flynn, Bruce A. Seiger



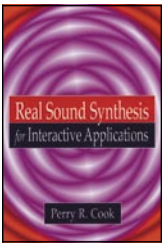
With the publication of the second edition, the authors keep pace with the ever-growing and rapidly expanding field of robotics. The new edition reflects technological developments and includes programs and activities for robot enthusiasts. Using photographs, illustrations, and informative text, Mobile Robots guides the reader through the step-by-step process of constructing two different and inexpensive, yet fully functional, robots.

1999; ISBN 978-1-56881-097-3 Paperback; 486 pp.; $34.00

Real Sound Synthesis for Interactive Applications

CD-ROM

Perry R. Cook



Virtual environments such as games and animated and "real" movies require realistic sound effects that can be integrated by computer synthesis. This book investigates the physics and mathematics of creating sounds in the real world for use in interactive digital settings. An enclosed CD follows along with the text, allowing readers to listen to the guitar strings, African drums, and squeaky doors that Cook models. Code examples are also provided. *Real Sound Synthesis* is a book for anyone who wants to learn about computational sound, including game developers, graphics programmers, hobbyists, students.

2002; ISBN 978-1-56881-168-0 Paperback; 263 pp.; $39.00

Robot Teams

From Diversity to Polymorphism

Edited by Tucker Balch, Lynne E. Parker

This volume provides not only the essentials of multi-agent robotics theory but also descriptions of exemplary implemented systems demonstrating the key concepts of multi-robot research. Information is presented in a descriptive manner and augmented with detailed mathematical formulations, photos, diagrams, and source examples.

2001; ISBN 978-1-56881-155-0
Hardcover; 425 pp.; $49.00

Algebraic 3-D Modeling

Andreas Hartwig

1996; ISBN 978-1-56881-023-2 Hardcover; 232 pp.; $59.00

Algorithms and Complexity

TEXT

SECOND EDITION

Herbert S. Wilf

2002; ISBN 978-1-56881-178-9 Hardcover; 219 pp.; $39.00

Augmented Reality

Placing Artificial Objects in Real Scenes

Edited by Reinhold Behringer, Gudrun Klinker, David Mizell

1999; ISBN 978-1-56881-098-0 Hardcover; 256 pp.; $59.00

Automating the Design of Computer Systems

William P. Birmingham, Anurag P. Gupta, Daniel P. Siewiorek

1992; ISBN 978-0-86720-241-0 Hardcover; 296 pp.; $64.00

Computer Algebra and Symbolic Computation

TEXT
CD-ROM

Elementary Algorithms

Joel S. Cohen

2002; ISBN 978-1-56881-158-1 Hardcover; 323 pp.; $55.00

Computer Algebra and Symbolic Computation

TEXT
CD-ROM

Mathematical Methods

Joel S. Cohen

2003; ISBN 978-1-56881-159-8 Hardcover; 472 pp.; $59.00

An Introduction to Scientific, Symbolic, and Graphical Computation

Eugene Fiume

1995; ISBN 978-1-56881-051-5 Hardcover; 328 pp.; $54.00

Introductory Lectures on Data-Parallel Computing

P. Takis Metaxas, editor/producer

1996; ISBN 978-1-56881-059-1 CD; $54.00

Languages for Developing User Interfaces

Edited by Brad A. Myers

1992; ISBN 978-0-86720-450-6 Hardcover; 480 pp.; $72.00

The Most Complex Machine

TEXT

A Survey of Computers and Computing

David J. Eck

2000; ISBN 978-1-56881-128-4 Paperback; 464 pp.; $34.00

Reliable Computer Systems

Design and Evaluation

THIRD EDITION

Daniel P. Siewiorek, Robert S. Swarz

1998; ISBN 978-1-56881-092-8 Hardcover; 908 pp.; $69.00

Sensors for Mobile Robots

H. R. Everett

Foreword by Rodney Brooks

1995; ISBN 978-1-56881-048-5 Hardcover; 544 pp.; $69.00

Service Robots

Rolf Dieter Schraft, Gernot Schmierer

2000; ISBN 978-1-56881-109-3 Hardcover; 228 pp.; $47.50

Symbolic Computation and Automated Reasoning

The CALCULEMUS-2000 Symposium

Edited by Manfred Kerber, Michael Kohlhase

2001; ISBN 978-1-56881-145-1 Hardcover; 288 pp.; $60.00

Connection Games
Variations on a Theme

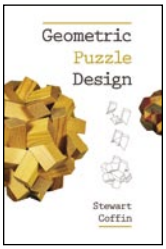
Cameron Browne

A comprehensive study of the connection game genre, *Connection Games* provides a survey of known connection games while exploring common themes and strategies. This book aims to impose some structure on this increasingly large family of games, and to define exactly what constitutes a connection game. Key games are examined in detail and complete rules for over 200 connection games and variants are provided.

2005; ISBN 978-1-56881-224-3 Paperback; 416 pp.; $48.00

Geometric Puzzle Design NEW

Stewart Coffin



This book, by one of the most original and versatile puzzle designers, discusses how to design "good" geometric puzzles: two-dimensional dissection puzzles, polyhedral dissections, and burrs. Challenges and thoughtful questions, as well as practical design and woodworking tips, are complemented by excursions into the history and philosophy of puzzle design and encourage the reader to build his own puzzles and experiment with his own designs.

January 2007; ISBN 978-1-56881-312-7
Hardcover; 220 pp.; $39.00

Homage to a Pied Puzzler NEW

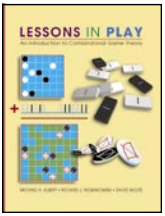
Edited by Ed Pegg Jr, Alan Schoen, Tom Rodgers

This book contains a unique collection of articles in tribute to Martin Gardner, many of which are a result of presentations given at the 7th *Gathering for Gardner*, March 16–19, 2006. The contributing authors are preeminent puzzle designers, magicians, and mathematicians who have been inspired by the writings and work of Martin Gardner.

October 2007; ISBN 978-1-56881-315-8
Hardcover; approx. 300 pp.; $38.00

Lessons in Play NEW TEXT
An Introduction to Combinatorial Game Theory

Michael H. Albert, Richard Nowakowski, David Wolfe



Lessons in Play is the authoritative textbook on combinatorial game theory. As the perfect complement to *Winning Ways*, it is a formal, yet playful, introduction to the subject and covers the core concepts needed to understand and play combinatorial games. Classic techniques are introduced and applied in novel ways to analyze both old and new games, several appearing for the first time in this book. This book makes an excellent guide for undergraduates or for self-study by the enterprising reader, with a generous collection of exercises and problems scattered throughout the book.

January 2007; ISBN 978-1-56881-277-9
Hardcover; 304 pp.; $49.00

A Lifetime of Puzzles NEW
A Collection of Puzzles in Honor of Martin Gardner's 90th Birthday

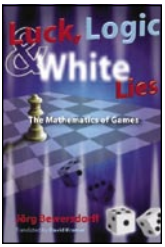
Edited by Erik D. Demaine, Martin L. Demaine, Tom Rodgers

Martin Gardner has entertained the world with his puzzles for decades and inspired countless mathematicians and scientists. As he rounds out another decade, his colleagues are paying him tribute with this special collection that contains contributions from some of the most respected puzzlemasters, magicians and mathematicians.

May 2007; ISBN 978-1-56881-245-8
Hardcover; approx. 350 pp.; $35.00

Luck, Logic, and White Lies
The Mathematics of Games

Jörg Bewersdorff



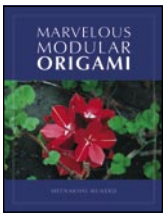
A comprehensive review of the mathematical foundations of popular games, including Roulette, Monopoly™, Chess, Go, numerous card games, and many more Probability, combinatorics, and mathematical game theory are the three pillars of this investigation and the author explains the basic assumptions and theories behind these approaches using entertaining examples and implementing strategies to improve the chances of players who use these methods. An extensive bibliography and sections describing the historical developments are welcome features to put the subject in a broader context.

2005; ISBN 978-1-56881-210-6 Paperback; 504 pp.; $49.00

Marvelous Modular Origami

NEW

Meenakshi Mukerji



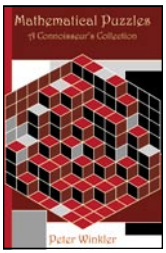
Prompted by hundreds of requests posted to the author's website, *Meenakshi's Modular Mania* (www.origamee.net), the author gathers in this book modular-unit folding diagrams and instructions for building over 30 models as well as photographs of finished models. The author provides origami basics for beginners as well as folding tips and information about polyhedra. The book's appendix offers additional information about mathematical aspects of modular origami and origami in general.

March 2007; ISBN 978-1-56881-316-5
Paperback; approx. 100 pp.; $20.00

Mathematical Puzzles

A Connoisseur's Collection

Peter Winkler



"Winkler's book is a treasure chest filled with a fascinating collection of gems!" —Elwyn R. Berlekamp, Coauthor of *Winning Ways for Your Mathematical Plays*

2004; ISBN 978-1-56881-201-4
Paperback; 180 pp. $18.00

More Mathematical Puzzles

NEW

Peter Winkler

More Mathematical Puzzles is a sequel to the highly successful, albeit challenging, puzzle collection *Mathematical Puzzles* by Peter Winkler. The mathematically less challenging geographic puzzles from the first book will be replaced by a group of word puzzles.

October 2007; ISBN 978-1-56881-336-3
Paperback; approx. 200 pp.; $20.00

Origami Design Secrets

Mathematical Methods for an Ancient Art

Robert J. Lang

Robert Lang, one of the world's foremost origami artists and scientists, presents the never-before-described mathematical and geometric principles that allow anyone to design original origami, something once restricted to an elite few. Existing origami aficionados will find previously unpublished models such as the "Black Forest Cuckoo Clock." Origami novices will appreciate the organization of the book, which begins with easy techniques and progresses with straightforward algorithms for intuitive, concrete examples like rivers, packing of circles, and assembly of tiles. An appendix includes the advanced mathematical concepts. From the theoretical underpinnings to detailed step-by-step folding sequences, this book takes a modern look at the heart of the centuries-old art of origami.

2003; ISBN 978-1-56881-194-9 Paperback; 594 pp.; $48.00

Piano-Hinged Dissections

NEW
CD-ROM

Time to Fold!

Greg N. Frederickson

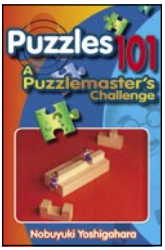
A piano hinge is a long, narrow hinge that runs the full length of the joint—like the top of a piano—so that one piece flaps on top of or under the other piece. This mechanism can be simulated by folding a piece of paper, so you can test and experiment with piano-hinged dissections without needing special materials: just paper and scissors—and some intuition and creativity! The author provides over 100 dissections and outlines methods for discovering them. The videos on the CD provide demonstrations for creating your own dissections.

2006; ISBN 978-1-56881-299-1 Hardcover; 320 pp.; $49.00

Puzzles 101

A Puzzlemaster's Challenge

Nob Yoshigahara



This collection of puzzles from the internationally acclaimed puzzlemaster Nob Yoshigahara covers a wide variety of puzzles from physical to visual, conceptual to mathematical. Solutions are provided in a separate section, which will help novices get on the right track, and will give seasoned aficionados a chance to check their work.

2004; ISBN 978-1-56881-206-9 Paperback; 125 pp.; $14.00

Twists, Tilings, and Tessellations NEW

Robert J. Lang

While traditional origami focused on representations of nature, modern origami artists have used the principles of origami to create an astonishing variety of geometric shapes incorporating periodic folded patterns reminiscent of Moorish tilings, elaborate twisted forms, and curved and three-dimensional shapes. This book explores both the mathematics and the artistry of this new form of origami, ranging from the underlying principles to detailed folding instructions and numerous photographs.

November 2007; ISBN 978-1-56881-232-8
Paperback; approx. 500 pp.; $60.00

Winning Ways for Your Mathematical Plays

SECOND EDITION

Elwyn R. Berlekamp, John H. Conway, Richard K. Guy

In the quarter of a century since three mathematicians and game theorists collaborated to create *Winning Ways for Your Mathematical Plays,* the book has become the definitive work on the subject of mathematical games. Now carefully revised and broken down into four volumes to accommodate new developments, the Second Edition retains the original's wealth of wit and wisdom. The authors' insightful strategies, blended with their witty and irreverent style, make reading a profitable pleasure.

Volume 1
2001; 978-ISBN 1-56881-130-7 Paperback; 296 pp.; $49.95

Volume 2
2003; ISBN 978-1-56881-142-0 Paperback; 212 pp.; $39.00

Volume 3
2003; ISBN 978-1-56881-143-7 Paperback; 362 pp.; $49.00

Volume 4
2004; ISBN 978-1-56881-144-4 Paperback; 224 pp.; $39.00

The Dots-and-Boxes Game

Sophisticated Child's Play

Elwyn Berlekamp

2000; ISBN 978-1-56881-129-1 Paperback; 144 pp.; $14.95

A Gardner's Workout

Training the Mind and Entertaining the Spirit

Martin Gardner

2001; ISBN 978-1-56881-120-8 Hardcover; 330 pp.; $35.00

Hex Strategy

Making the Right Connections

Cameron Browne

2000; ISBN 978-1-56881-117-8 Paperback; 384 pp.; $39.00

The Mathemagician and Pied Puzzler

Edited by Elwyn Berlekamp, Tom Rodgers

1999; ISBN 978-1-56881-075-1 Hardcover; 266 pp.; $35.00

Mathematical Go

Chilling Gets the Last Point

Elwyn Berlekamp, David Wolfe

1994; ISBN 978-1-56881-032-4 Hardcover; 256 pp.; $39.00

On Numbers and Games

SECOND EDITION

John H. Conway

2001; ISBN 978-1-56881-127-7 Hardcover; 256 pp.; $45.00

Puzzlers' Tribute

A Feast for the Mind

Edited by David Wolfe, Tom Rodgers

2002; ISBN 978-1-56881-121-5 Hardcover; 436 pp. $35.00

Tribute to a Mathemagician

Edited by Barry Cipra, Erik Demaine, Martin Demaine, Tom Rodgers

2004; ISBN 978-1-56881-204-5 Hardcover; 350 pp.; $38.00

Algebraic Combinatorics and Coinvariant Spaces

NEW
TEXT

François Bergeron

CMS TREATISES IN MATHEMATICS

This book is an introduction to algebraic combinatorics, the goal of which is to study various deep interactions between combinatorics, representation theory, algebraic geometry, and other classical subfields of algebra. The focus is on the study of interesting n!-dimensional spaces of polynomials that naturally appear in all of these contexts. The prerequisites have been kept to a minimum, but basic linear algebra and undergraduate group theory are required. This text is intended for beginning graduate students as well as for researchers in other fields.

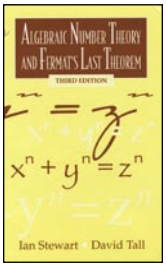
November 2007; ISBN 978-1-56881-324-0
Hardcover; approx. 200 pp.; $35.00

Algebraic Number Theory and Fermat's Last Theorem

TEXT

THIRD EDITION

Ian Stewart, David Tall



First published in 1979 and written by two distinguished mathematicians with a special gift for exposition, this book is now available in a completely revised third edition. It reflects the exciting developments in number theory during the past two decades that culminated in the proof of Fermat's Last Theorem. Intended as an upper level textbook, it is also eminently suited as a text for self-study.

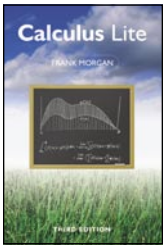
2002; ISBN 978-1-56881-119-2 Hardcover; 336 pp.; $38.00

Calculus Lite

TEXT

THIRD EDITION

Frank Morgan



Calculus Lite breaks the mold of heavyweight calculus books and presents a straightforward introduction to calculus. The author uses an intuitive approach to explain real world problems and then develops a rigorous mathematical treatment for their solution. Standard preliminary topics like trigonometry and limits are introduced by using them in context. This book can serve as an excellent tutorial for self-study and exam preparation. It is also currently being used as a text for beginning courses at major universities and colleges.

2001; ISBN 978-1-56881-157-4 Paperback; 320 pp.; $39.00

Computational Aspects of Polynomial Identities

Alexei Kanel-Belov, Louis Halle Rowen

RESEARCH NOTES IN MATHEMATICS

Polynomial Identities are used to study the properties of algebras through polynomial conditions. Starting from simple properties such as commutativity a beautiful theory has evolved that studies algebras through the set of all their identities or classes of algebras satisfying a given set of identities. The goal of this book is to expose the more mature aspects of PI-theory to the general mathematical community, covering the important advances in the past 20 years.

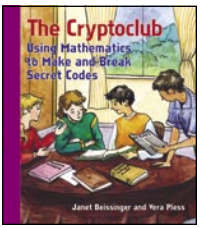
2005; ISBN 978-1-56881-163-5 Hardcover; 400 pp.; $69.00

The Cryptoclub

TEXT

Using Mathematics to Make and Break Secret Codes

Janet Beissinger, Vera Pless



Join the Cryptokids as they apply basic mathematics to make and break secret codes. This book has many hands-on activities that have been tested in both classrooms and informal settings. Ciphers include classic ciphers such as Caesar, substitution, Vigenère, and multiplicative, as well as the modern RSA. Math topics include addition and subtraction with negative numbers, decimals, and percent; factorization; modular arithmetic; exponentiation; prime numbers; and frequency analysis.

2006; ISBN 978-1-56881-223-6 Paperback; 215 pp.; $35.00

The Cryptoclub Workbook

Using Mathematics to Make and Break Secret Codes

Janet Beissinger, Vera Pless

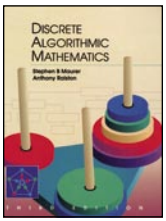
This workbook provides students with problems related to each section in the book to help them master the concepts introduced throughout the book.

2006; ISBN 978-1-56881-298-4 Paperback; 80 pp.; $14.00

Discrete Algorithmic Mathematics **TEXT**

THIRD EDITION

Stephen B Maurer, Anthony Ralston



Thoroughly revised for a one-semester course, this well-known and highly regarded book is an outstanding text for undergraduate discrete mathematics. It has been updated with new or extended discussions of order notation, generating functions, chaos, aspects of statistics, and computational biology. Written in a lively, clear style that talks to the reader, the book is unique for its emphasis on algorithmics and the inductive and recursive paradigms as central mathematical themes. It includes a broad variety of applications, not just to mathematics and computer science, but to natural and social science as well. A complete solutions manual is available to course instructors.

2004; ISBN 978-1-56881-166-6 Hardcover; 600 pp.; $88.00

Complete Solutions for Discrete Algorithmic Mathematics

Stephen B Maurer, Anthony Ralston, Laurel Evans, Hal Pomeranz, Gil Rosenberg, Brian D. Taylor

Available to instructors with text adoptions.

Selected Solutions for Discrete Algorithmic Mathematics

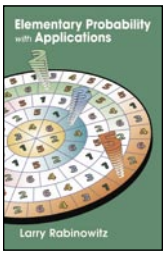
Stephen B Maurer, Anthony Ralston, Laurel Evans, Hal Pomeranz, Gil Rosenberg, Brian D. Taylor

This manual contains solutions to all problems from *Discrete Algorithmic Mathematics* whose labels are printed in color. The manual is intended for use by students.

2005; ISBN 978-1-56881-255-7 Paperback; 236 pp.; $30.00

Elementary Probability with Applications **TEXT**

Larry Rabinowitz



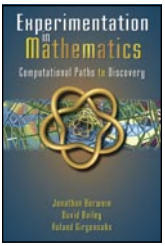
This book uses real world case studies about sports, elections, airline over-bookings, and more, to provide an introduction to probability and its applications in the real world. It is based on many years of teaching and its style encourages the use for self-study. This book is intended as an undergraduate text or as a reference for courses that include some probability.

2004; ISBN 978-1-56881-222-9
Hardcover; 208 pp.; $35.00

Experimentation in Mathematics

Computational Paths to Discovery

Jonathan Borwein, David Bailey, Roland Girgensohn



New mathematical insights and rigorous results are often gained through extensive experimentation using numerical examples or graphical images and analyzing them. Today computer experiments are an integral part of doing mathematics. This allows for a more systematic approach to conducting and replicating experiments. The authors address the role of experimental research in the statement of new hypotheses and the discovery of new results and chart the road to future developments. Following the lead of *Mathematics by Experiment: Plausible Reasoning in the 21st Century*, this book gives numerous additional case studies of experimental mathematics in action, including sequences, series, products, integrals, Fourier series, zeta functions, partitions, primes, and polynomials.

2004; ISBN 978-1-56881-136-9 Hardcover; 368 pp.; $49.00

Experimental Mathematics in Action **NEW**

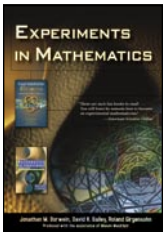
David H. Bailey, Jonathan M. Borwein, Neil Calkin, Roland Girgensohn, Russell Luke, Victor Moll

The emerging field of experimental mathematics has expanded to encompass a wide range of studies, all unified by the aggressive utilization of modern computer technology in mathematical research. This volume presents a number of case studies of experimental mathematics in action, together with some high-level perspectives, all written by leading researchers in the field. Specific studies addressed in the book include: (1) analytic evaluation of integrals by means of symbolic and numeric computing techniques, (2) evaluation of Apery-like summations, (3) finding dependencies among high-dimension vectors (with applications to factoring large integers), (4) inverse scattering (reconstruction of physical objects based on electromagnetic or acoustic scattering), and (5) investigation of continuous but nowhere differentiable functions. In addition to these case studies, the book includes some background on the computational techniques used in these analyses.

March 2007; ISBN 978-1-56881-271-7
Hardcover; approx. 200 pp.; $40.00

Experiments in Mathematics CD

Jonathan M. Borwein, David H. Bailey, Roland Girgensohn



In the short time since the first edition of *Mathematics by Experiment: Plausible Reasoning in the 21st Century* and *Experimentation in Mathematics: Computational Paths to Discovery*, there has been a noticeable upsurge in interest in using computers to do real mathematics. The authors have updated and enhanced the book files and have now made them available in PDF format on a CD-ROM. The CD includes several "smart" enhancements, including: hyperlinks for all numbered equations; hyperlinks for all Internet URLs; hyperlinks for bibliographic references; an enhanced search facility, which assists one with a search for a particular mathematical formula or expression. These enhancements will significantly improve the usability of these files and the CD-ROM itself will enhance the reader's experience.

2005; ISBN 978-1-56881-283-0 **CD-ROM; $47.50**

generatingfunctionology

THIRD EDITION

Herbert S. Wilf

Generating functions are one of the most important tools in combinatorics, and they have application to large numbers of counting problems. This book, in the words of Richard Stanley's review, "is the first book suitable for undergraduates to be devoted exclusively to this topic. It performs an admirable job of conveying the essential features of generating functions.".

2006; ISBN 978-1-56881-279-3
Hardcover; 192 pp.; $39.00

Making Mathematics with Needlework

Ten Papers and Ten Projects **NEW**

Edited by sarah-marie belcastro, Carolyn Yackel

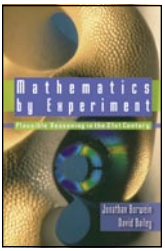
The focus of this book, written for mathematicians, needleworkers, and teachers of mathematics, is on the relationship between mathematics and the fiber arts (including knitting, crocheting, tatting, and quilting). Following a review of the mathematics that arises in the fiber arts, each chapter covers a specific mathematical concept and a needlework project, presented at a level where needleworkers can understand the mathematical concepts and mathematicians can understand the basics of the needlework. In addition, each chapter contains technical sections on mathematics, introducing the mathematics in the classroom through needlework, and needlework instructions where the pattern will exemplify the interplay between the craft and the mathematics.

April 2007; ISBN 978-1-56881-331-8
Hardcover; approx. 250 pp.; $30.00

Mathematics by Experiment

Plausible Reasoning in the 21st Century

Jonathan Borwein, David Bailey



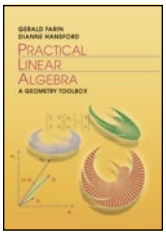
This new approach to mathematics—the utilization of advanced computing technology in mathematical research—is often called experimental mathematics. The computer provides the mathematician with a "laboratory" in which to perform experiments—analyzing examples, testing out new ideas, or searching for patterns. This book presents the rationale and historical context of experimental mathematics, and includes a series of examples that best portray the experimental methodology. For more examples and insights, the book Experimentation in Mathematics: Computational Paths to Discovery is a highly recommended companion.

2003; ISBN 978-1-56881-211-3 **Hardcover; 298 pp.; $45.00**

Practical Linear Algebra — TEXT

A Geometry Toolbox

Gerald Farin, Dianne Hansford



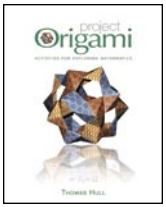
Practical Linear Algebra introduces students in math, science, engineering, and computer science to Linear Algebra from an intuitive and geometric viewpoint, creating a level of understanding that goes far beyond mere matrix manipulations. Practical aspects, such as computer graphics topics and numerical strategies, are covered throughout, and thus students can build a "Geometry Toolbox," based on a geometric understanding of the key concepts. This book covers all the standard linear algebra material for a first-year course; the authors teach by motivation, illustration, and example rather than by using a theorem/ proof style.

2005; ISBN 978-1-56881-234-2 Hardcover; 394 pp.; $67.00

Project Origami

Activities for Exploring Mathematics

Thomas Hull



The art and technique of origami provides a surprising range of tools for explaining complicated mathematical concepts. Based on years of experience, the author has created an entertaining workbook that can be used in a variety of mathematics classes to visualize the solutions to mathematical problems. Using origami, learn about: Dividing a Length into Equal Nths: Fujimoto Approximation • Solving Cubic Equations • Buckyballs and PHiZZ Units • Impossible Crease Patterns • Gaussian Curvature • Designing your own origami folding patterns, and much more!

2006; ISBN 1-56881-258-8 Paperback; 272 pp.; $30.00

Scientific Computing and Visualization — NEW TEXT

Gerald Farin, Dianne Hansford

This textbook is not a traditional introduction to the mathematics of scientific computation. Instead, it describes the principles behind the major methods, from statistics, applied mathematics, scientific visualization, and elsewhere, in a way that is accessible to a large part of the scientific community. Many examples using *Mathematica* are included in favor of any proofs, but not only those examples that actually work—it is often more important to understand and learn from failed attempts than from successful ones. A companion website includes all illustrations and code from the book, as well as a complete set of classroom presentations.

November 2007; ISBN 978-1-56881-321-9
Hardcover; approx. 300 pp.; $59.00

Semigroups for Delay Equations

András Bátkai, Susanna Piazzera

RESEARCH NOTES IN MATHEMATICS

The authors provide an overview of semigroup theory, including recent new results, discuss abstract delay equations and the solutions of delay equations from semigroups, study the qualitative behavior of the solutions, and finish with second order Cauchy problems. Topics addressed include Banach spaces, Cauchy problems, and properties such as well-posedness, regularity, and asymptotic almost periodicity.

2005; ISBN 978-1-56881-243-4 Hardcover; 272 pp.; $49.00

Signal Processing — TEXT

A Mathematical Approach

Charles L. Byrne

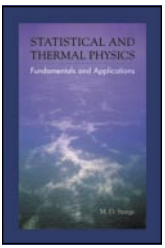
This book provides the necessary mathematical background to understand and employ signal processing techniques in an applied environment. The author addresses Fourier series and transforms in one and several variables, applications to acoustic and electromagnetic propagation models, transmission and emission tomography and image reconstruction, optimization techniques, high resolution methods, and more. The book will serve as a reference for professors and graduate students in applied mathematics and electrical engineering and can be used as a text for some undergraduate mathematics and physics courses.

2005; ISBN 978-1-56881-242-7 Hardcover; 397 pp.; $69.00

Statistical and Thermal Physics — TEXT

Fundamentals and Applications

Michael D. Sturge



This book assumes no previous knowledge of thermodynamics, kinetic energy, or probability—the only prerequisites are an elementary knowledge of classical and modern physics, and of multivariable calculus. The first half of the book introduces the subject inductively, but rigorously, proceeding from the concrete and specific to the abstract and general. In clear physical language the book explains the key concepts, such as temperature, heat, entropy, free energy, chemical potential, and distributions, both classical and quantum. The second half of the book applies these concepts to a wide variety of phenomena, including perfect gases, electrons in metal and semiconductors, phase transitions, heat engines, and transport processes. Each chapter contains fully worked examples and real-world problems drawn from physics, astronomy, biology, chemistry, electronics, and mechanical engineering. An instructor's solutions manual is available.

2003; ISBN 978-1-56881-196-3 Hardcover; 480 pp.; $59.00

Summa Summarum NEW

Mogens Esrom Larsen

CMS TREATISES IN MATHEMATICS

Every mathematician needs to know how to manipulate sums or to find and handle combinatorial identities. So do many other users of mathematics. In this book, the author provides a coherent tour of many known finite algebraic sums and offers a guide for devising simple ways of changing a given sum to a standard form that can be evaluated. *Summa Summarum* serves as both an introduction and a reference for researchers, graduates, upper-level undergraduate students, and non-specialists: from tools as distinct as the most classical ideas of Euler to the recent effective computer algorithms by Gosper and Wilf-Zeilberger. The book is self-contained with relatively few prerequisites and is accessible to a very broad readership.

April 2007; ISBN 978-1-56881-323-3
Hardcover; approx. 250 pp.; $40.00

The Symmetries of Things NEW

John H. Conway, Heidi Burgiel, Chaim Goodman-Strauss

The authors detail the various types of symmetries that appear in art and geometric patterns (in two and three dimensions) and present a standard notation for describing those symmetries. The notation leads to mathematical operations and theorems involving symmetries. The book is full of colorful illustrations demonstrating the various types of symmetries.

April 2007; ISBN 978-1-56881-220-5
Hardcover; approx. 350 pp.; $49.00

A = B

Marko Petkovsek, Herbert Wilf, Doron Zeilberger

Foreword by Donald E. Knuth

1996; ISBN 978-1-56881-063-8 Hardcover; 224 pp.; $45.00

Abelian I-adic Representations and Elliptic Curves

Jean-Pierre Serre

RESEARCH NOTES IN MATHEMATICS

1998; ISBN 978-1-56881-077-5 Hardcover; 208 pp.; $35.00

Adapted Wavelet Analysis from Theory to Software

Mladen Victor Wickerhauser

1994; ISBN 978-1-56881-041-6 Hardcover; 504 pp.; $69.00

Algebra: Groups, Rings, and Fields TEXT

Louis Rowen

1995; ISBN 978-1-56881-028-7 Hardcover; 264 pp.; $59.00

Asymptotics and Special Functions

Frank Olver

1997; ISBN 978-1-56881-069-0 Hardcover; 592 pp.; $79.00

The Atiyah-Patodi-Singer Index Theorem

Richard Melrose

RESEARCH NOTES IN MATHEMATICS

1993; ISBN 978-1-56881-002-7 Hardcover; 392 pp.; $69.00

Cake Cutting Algorithms

Be Fair if You Can

Jack Robertson, William Webb

1998; ISBN 978-1-56881-076-8 Hardcover; 177 pp.; $38.00

Differential Algebras in Topology

David Anick

RESEARCH NOTES IN MATHEMATICS

1993; ISBN 978-1-56881-001-0 Hardcover; 304 pp.; $69.00

Discrete Iterated Function Systems

Mario Peruggia

1993; ISBN 978-1-56881-015-7 Hardcover; 200 pp.; $49.00

Drawbridge Up

Mathematics—A Cultural Anathema

Hans Magnus Enzensberger

2001; ISBN 978-1-56881-156-7 Hardcover; 48 pp.; $9.95

Elliptic and Parabolic Methods in Geometry

Edited by Ben Chow, Robert Gulliver, Silvio Levy, John Sullivan

1996; ISBN 978-1-56881-064-5 Hardcover; 216 pp.; $59.00

Erdős on Graphs

His Legacy of Unsolved Problems

Fan Chung, Ron Graham

1998; ISBN 978-1-56881-079-9 Hardcover; 142 pp.; $35.00

Excursions into Mathematics

The Millennium Edition

Anatole Beck, Michael N. Bleicher, Donald W. Crowe

2000; ISBN 978-1-56881-115-4 Paperback; 528 pp.; $39.00

Free Resolutions in Commutative Algebra and Algebraic Geometry

Edited by David Eisenbud, Craig Huneke

RESEARCH NOTES IN MATHEMATICS

1992; ISBN 978-0-86720-285-4 Paperback; 160 pp.; $39.00

Fundamental Groups and Covering Spaces
Elon Lages Lima **TEXT**
2003; ISBN 978-1-56881-131-4 Hardcover; 214 pp.; $49.00

Fundamentals of Abstract Analysis
Andrew Gleason
1991; ISBN 978-0-86720-209-0 Hardcover; 416 pp.; $69.00

The Geometry of Kerr Black Holes
Barrett O'Neill
1995; ISBN 978-1-56881-019-5 Hardcover; 400 pp.; $88.00

Handbook of Integration
Daniel Zwillinger
1992; ISBN 978-0-86720-293-9 Hardcover; 384 pp.; $69.00

How to Win More
Strategies for Increasing a Lottery Win
Norbert Henze, Hans Riedwyl
1998; ISBN 978-1-56881-078-2 Paperback; 149 pp.; $19.95

On Quaternions and Octonions
John H. Conway, Derek A. Smith
2003; ISBN 978-1-56881-134-5 Hardcover; 160 pp.; $29.00

The Mathematics of Ciphers
Number Theory and RSA Cryptography
S. C. Coutinho
1999; ISBN 978-1-56881-082-9 Hardcover; 198 pp.; $39.95

Matrix Algebra Using MINImal MATlab
Joel Robbin
1995; ISBN 978-1-56881-024-9 Hardcover with 3.5"diskette; 560 pp.; $69.00

Misteaks …and how to find them before the teacher does…
THIRD EDITION
Barry Cipra
2000; ISBN 978-1-56881-122-2 Paperback; 88 pp.; $5.95

Modeling and Simulation
Hartmut Bossel
Includes 3.5"diskette.
1994; ISBN 978-1-56881-033-1 Hardcover; 504 pp.; $69.00
(DISTRIBUTED IN EUROPE BY FRIEDR. VIEWEG & SOHN)

Number Theory for the Millennium
Edited by Bruce Berndt et al.
Volume 1
2002; ISBN 978-1-56881-126-0 Hardcover; 480 pp.; $50.00
Volume 2
2002; ISBN 978-1-56881-146-8 Hardcover; 466 pp.; $50.00
Volume 3
2002; ISBN 978-1-56881-152-9 Hardcover; 470 pp.; $50.00

Numerical Methods
Wolfgang Boehm, Hartmut Prautzsch
1993; ISBN 978-1-56881-020-1 Paperback; 196 pp.; $40.00
(DISTRIBUTED IN EUROPE BY FRIEDR. VIEWEG & SOHN)

One-Dimensional Spline Interpolation Algorithms
Helmuth Späth
1995; ISBN 978-1-56881-016-4 Hardcover; 416 pp.; $69.00

Two-Dimensional Spline Interpolation Algorithms
Helmuth Späth
1995; ISBN 978-1-56881-017-1 Hardcover; 312 pp.; $69.00

Operator Algebras, Mathematical Physics, and Low Dimensional Topology
Edited by Richard Herman, Betül Tanbay
RESEARCH NOTES IN MATHEMATICS
1993; ISBN 978-1-56881-027-0 Hardcover; 336 pp.; $69.00

Origami^3
Edited by Thomas Hull
2002; ISBN 978-1-56881-181-9 Paperback; 352 pp.; $49.00

Polynomial Invariants of Finite Groups
Larry Smith
1995; ISBN 978-1-56881-053-9 Hardcover; 376 pp.; $69.00

The Queen of Mathematics
A Historically Motivated Guide to Number Theory
Jay Goldman
2002; ISBN 978-1-56881-006-5 Hardcover; 525 pp.; $59.95

Regular Sequences and Resultants
Günter Scheja, Uwe Storch
RESEARCH NOTES IN MATHEMATICS
2001; ISBN 978-1-56881-151-2 Hardcover; 142 pp.; $39.00

Riemannian Geometry
A Beginner's Guide
SECOND EDITION
Frank Morgan
1998; ISBN 978-1-56881-073-7 Hardcover; 160 pp.; $35.00

Statistical Curves and Parameters
Choosing an Appropriate Approach
Michael E. Tarter
2000; ISBN: 978-1-56881-105-5 Hardcover, 400 pp; $64.00

A Survey of Modern Algebra
Garrett Birkhoff, Saunders Mac Lane
1997; ISBN 978-1-56881-068-3 Hardcover; 512 pp.; $59.00

Surveys in Number Theory
Papers from The Millennial Conference on Number Theory
Edited by Bruce Berndt et al.
2002; ISBN 978-1-56881-162-8 Paperback; 368 pp.; $30.00

Topics in Galois Theory
Jean-Pierre Serre
RESEARCH NOTES IN MATHEMATICS
1992; ISBN 978-0-86720-210-6 Paperback; 144 pp.; $34.00

TriMathlon
A Workout Beyond the School Curriculum
Judith Sally, Paul Sally
2003; ISBN 978-1-56881-184-0 Paperback; 200 pp.; $30.00

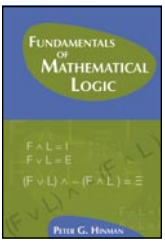
Understanding Probability and Statistics
A Book of Problems
Ruma Falk
1998; ISBN 978-1-56881-071-3 Paperback; 256 pp.; $30.00

Wavelets: A Primer
Christian Blatter
1998; ISBN 978-1-56881-195-6 Paperback; 212 pp.; $35.00

Word Processing in Groups
David B. A. Epstein, et al.
1992; ISBN 978-0-86720-244-1 Hardcover; 352 pp.; $59.00

The World According to Wavelets
The Story of a Mathematical Technique in the Making
SECOND EDITION
Barbara Burke Hubbard
1998; ISBN 978-1-56881-072-0 Hardcover; 286 pp.; $49.00

Aspects of Incompleteness
LECTURE NOTES IN LOGIC 10
Per Lindström
This thoroughly revised second edition of a classic book on the main ideas and results of general meta-mathematics contains new results and simplified proofs, as well as an up-to-date bibliography. In addition to the standard results of Gödel and others on incompleteness, (non-) finite axiomatizability, interpretability, etc., it contains a thorough treatment of partial conservativity and degrees of interpretability. The reader should be familiar with the widely used method of arithmetization and with the elements of recursion theory. The expanded number of exercises and the wide collection of results make the book useful as a textbook for a graduate course and a valuable reference for researchers.
2003; ISBN 978-1-56881-173-4 Paperback; 176 pp. $35.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Fundamentals of Mathematical Logic **TEXT**
Peter G. Hinman


This introductory graduate text covers modern mathematical logic from propositional, first-order and infinitary logic and Gödel's Incompleteness Theorems to extensive introductions to set theory, model theory and recursion (computability) theory. Based on the author's more than 35 years of teaching experience, the book develops students' intuition by presenting complex ideas in the simplest context for which they make sense. The book is appropriate for use as a classroom text, for self study, and as a reference on the state of modern logic.
2005; ISBN 978-1-56881-262-5 Hardcover; 896 pp.; $80.00

Inexhaustibility
A Non-Exhaustive Treatment
LECTURE NOTES IN LOGIC 16
Torkel Franzén
Gödel's Incompleteness Theorems are among the most significant results in the foundation of mathematics. These results have a positive consequence: any system of axioms for mathematics that we recognize as correct can be properly extended by adding as a new axiom a formal statement expressing that the original system is consistent. This suggests that our mathematical knowledge is inexhaustible, an essentially philosophical topic to which this book is devoted. Basic material in predicate logic, set theory and recursion theory is presented, leading to a proof of incompleteness theorems. The inexhaustibility of mathematical knowledge is treated based on the concept of transfinite progressions of theories as conceived by Turing and Feferman. All concepts and results necessary to understand the arguments are introduced as needed, making the presentation self-contained and thorough.
2004; ISBN 978-1-56881-174-1 Hardcover; 263 pp.; $85.00
2004; ISBN 978-1-56881-175-8 Paperback; 263 pp.; $40.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

The Incompleteness Phenomenon **TEXT**

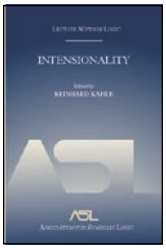
Martin Goldstern, Haim Judah

1998; ISBN 978-1-56881-093-5 Paperback; 264 pp.; $39.00

Intensionality

LECTURE NOTES IN LOGIC 22

Edited by Reinhard Kahle



This book is a compilation of articles about intensionality in philosophy, logic, linguistics, and mathematics. The articles approach the concept of intensionality from different perspectives. Some articles address philosophical issues raised by the possible worlds approach to intensionality; others are devoted to technical aspects of modal logic. The volume highlights the particular interdisciplinary nature of intensionality with articles spanning the areas of philosophy, linguistics, mathematics, and computer science.

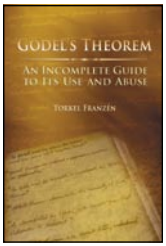
2005; ISBN 978-1-56881-267-1 Hardcover; 280 pp.; $50.00
2005; ISBN 978-1-56881-268-7 Paperback; 280 pp.; $35.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Gödel's Theorem

An Incomplete Guide to Its Use and Abuse

Torkel Franzén



This book gives an up-to-date explanation of Gödel's incompleteness theorem for a general audience, including a presentation of the topics of computability, complexity, and formal systems. It also comments on a wide selection of arguments invoking the incompleteness theorem, in fields ranging from postmodernism and theology to the philosophy of mathematics. It is a book both for college courses and for the general reader.

2005; ISBN 978-1-56881-238-0; Paperback; 182 pp.; $24.95

Gödel '96: Logical Foundations of Mathematics, Computer Science and Physics

Kurt Gödel's Legacy

LECTURE NOTES IN LOGIC 6

Edited by Petr Hájek

2001; ISBN 978-1-56881-153-6 Paperback; 336 pp.; $50.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Logic Colloquium '01

LECTURE NOTES IN LOGIC 20

Edited by Matthias Baaz, Sy-David Friedman, Jan Krajícek

2005; ISBN 978-1-56881-247-2 Hardcover; 504 pp.; $70.00
2005; ISBN 978-1-56881-248-9 Paperback; 504 pp.; $40.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Earlier proceedings available at www.akpeters.com.

Logicism Renewed

Logical Foundations for Mathematics and Computer Science

LECTURE NOTES IN LOGIC 23

Paul C. Gilmore

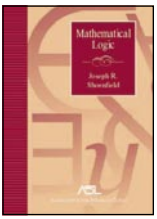
Logicism is the thesis that all mathematical concepts are definable as logical concepts. This book introduces intensional type theory (ITT) based on rules of intensionality rather than rules of extensionality. ITT is used to provide a unified logical foundation for mathematics and computer science, yielding a much simpler foundation for recursion theory and the semantics of computer programs than that currently provided by category theory. The monograph unifies three contending theses on the nature of mathematics, namely logicism, formalism, and intuitionism.

2005; ISBN 978-1-56881-275-5 Hardcover; 252 pp.; $69.00
2005; ISBN 978-1-56881-276-2 Paperback; 252 pp.; $39.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Mathematical Logic **TEXT**

Joseph R. Shoenfield



"This classic text is as fresh and useful today as when first published. Noted for the economy of its presentation, it includes a wealth of basic and key results from all parts of mathematical logic."
—Solomon Feferman, Stanford University

2001; ISBN 978-1-56881-135-2
Paperback; 356 pp.; $39.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Model Theory of Fields, Second Edition

LECTURE NOTES IN LOGIC 5

Dave Marker, Margit Messmer, Anand Pillay

An advanced graduate-level mathematics textbook in model theory and algebra, this book contains four chapters surveying various applications of model theory to algebra. It provides background for some of Hrushovski's later applications of model theory in Diophantine geometry.

2005; ISBN 978-1-56881-281-6 Hardcover; 170 pp.; $59.00
2005; ISBN 978-1-56881-282-3 Paperback; 170 pp.; $26.00

PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Model Theory of Stochastic Processes

LECTURE NOTES IN LOGIC 14

Sergio Fajardo, H. Jerome Keisler

2002; ISBN 978-1-56881-167-3 Hardcover; 140 pp.; $70.00
2002; ISBN 978-1-56881-172-7 Paperback; 140 pp.; $32.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Recursion Theory

LECTURE NOTES IN LOGIC 1

Joseph R. Shoenfield

2001; ISBN 978-1-56881-149-9 Paperback; 96 pp.; $25.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Reflections on the Foundations of Mathematics

Essays in Honor of Solomon Feferman

LECTURE NOTES IN LOGIC 15

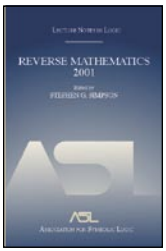
Edited by Wilfried Sieg, Richard Sommer, Carolyn Talcott

2002; ISBN 978-1-56881-169-7 Hardcover; 460 pp.; $95.00
2002; ISBN 978-1-56881-170-3 Paperback; 460 pp.; $45.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Reverse Mathematics 2001

LECTURE NOTES IN LOGIC 21

Edited by Stephen G. Simpson



Reverse Mathematics is a program of research in the foundations of mathematics, motivated by the foundational questions of what are appropriate axioms for mathematics, and what are the logical strengths of particular axioms and particular theorems. The book contains 24 original papers by leading researchers. These articles exhibit the exciting recent developments in reverse mathematics and subsystems of second order arithmetic.

2005; ISBN 978-1-56881-263-2 Hardcover; 416 pp.; $70.00
2005; ISBN 978-1-56881-264-9 Paperback; 416 pp.; $40.00
PUBLISHED BY THE ASSOCIATION FOR SYMBOLIC LOGIC

Set Theory

On the Structure of the Real Line

Tomek Bartoszynski, Haim Judah

1995; ISBN 978-1-56881-044-X Hardcover; 560 pp.; $85.00

Outside In

The Geometry Center, University of Minnesota

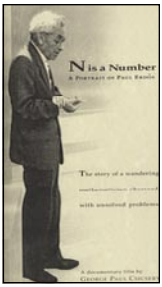
This award-winning video visualizes the discovery that a sphere can be turned inside out by means of smooth motion if self-intersection of the material is allowed. Stunning computer animation combined with thorough explanations in the spoken text and the accompanying four-color booklet, *Making Waves*, classify this film as "educational entertainment."

1994; 22 minutes. VHS video includes paperback supplement.
ISBN 978-1-56881-046-1 VHS/NTSC; $44.00
ISBN 978-1-56881-052-2 PAL; $54.00

N is a Number

A Portrait of Paul Erdős

Paul Csicsery



A documentary filmed in England, Hungary, Poland, and the United States over a five-year period, this video presents Erdős' mathematical quest in its personal and philosophical dimensions, and the tragic historical events that molded his life.

Documentary film, 57 minutes
ISBN 978-1-56881-088-1 VHS/NTSC; $29.95
ISBN 978-1-56881-094-2 PAL; $35.00
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Not Knot

The Geometry Center, University of Minnesota

This award-winning animation of non-Euclidean hyperbolic space combines extraordinary techniques of computer graphics, insight into higher mathematics, and clever pedagogy to bring an understanding of fairly recent research to a broad audience. It can be appreciated by high school students, math buffs, and professional mathematicians alike.

1991; 16 minutes. VHS video includes paperback supplement.
ISBN 978-1-56881-042-3 VHS/NTSC; $44.00
ISBN 978-1-56881-060-7 PAL; $54.00

Turning a Sphere Inside Out

Nelson L. Max

"This re-issued video [originally produced in 1976] is a treasured time capsule that shows three brilliant scientists making the intriguing concept of sphere inversion understandable to the general public. The carefully crafted modeling sequence brings to life this abstract concept which is almost impossible to explain and visualize using only text and static pictures."—Carlo H. Sequin, UC Berkeley

2004; 23 minutes.
ISBN 978-1-56881-218-2 VHS/NTSC; $35.00
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Experimental Mathematics

Experimental Mathematics is a journal devoted to experimental aspects of mathematical research. The journal's goal is to make the interplay between mathematical theory and experimentation more fruitful and visible. It also aims to aid in the development of mathematical standards for reporting experimental results such as exist in other sciences. EM publishes formal results inspired by experimentation; conjectures suggested by experiment; descriptions of algorithms and software for mathematical exploration; surveys of areas in mathematics from the experimental point of view; and general articles of interest to the community.

Website: http://www.expmath.org

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Website: http://www.internetmathematics.org

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