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American Book Publishing Record 2006

Discrete Mathematics for Computer Scientists Cliff L Stein 2011-11-21 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Stein/Drysdale/Bogart's Discrete Mathematics for Computer Scientists is ideal for computer science students taking the discrete math course. Written specifically for computer science students, this unique textbook directly addresses their needs by providing a foundation in discrete math while using motivating, relevant CS applications. This text takes an active-learning approach where activities are presented as exercises and the material is then fleshed out through explanations and extensions of the exercises.

Loose Leaf for Discrete Mathematics and Its Applications Kenneth H Rosen 2018-07-10 Rosen's Discrete Mathematics and its Applications presents a precise, relevant, comprehensive approach to mathematical concepts. This world-renowned best-selling text was written to accommodate the needs across a variety of majors and departments, including mathematics, computer science, and engineering. As the market leader, the book is highly flexible, comprehensive and a proven pedagogical teaching tool for instructors. Digital is becoming increasingly important and gaining popularity, crowning Connect as the digital leader for this discipline. McGraw-Hill Education's Connect, available as an optional, add on item. Connect is the only integrated learning system that empowers students by continuously adapting to deliver precisely what they need, when they need it, how they need it, so that class time is more effective. Connect allows the professor to assign homework, quizzes, and tests easily and automatically grades and records the scores of the student's work. Problems are randomized to prevent sharing of answers and may also have a "multi-step solution" which helps move the students' learning along if they experience difficulty.

A Spiral Workbook for Discrete Mathematics Harris Kwong 2015-11-06 A Spiral Workbook for Discrete Mathematics covers the standard topics in a sophomore-level course in discrete mathematics: logic, sets, proof techniques, basic number theory, functions,relations, and elementary combinatorics, with an emphasis on motivation. The text explains and claries the unwritten conventions in mathematics, and guides the students through a detailed discussion on how a proof is revised from its draft to a nal polished form. Hands-on exercises help students understand a concept soon after learning it. The text adopts a spiral approach: many topics are revisited multiple times, sometimes from a dierent perspective or at a higher level of complexity, in order to slowly develop the student's problem-solving and writing skills.

Discrete Mathematics for Computer Science Gary Haggard 2005 Master the fundamentals of discrete mathematics with DISCRETE MATHEMATICS FOR COMPUTER SCIENCE with Student Solutions Manual CD-ROM! An increasing number of computer scientists from diverse areas are using discrete mathematical structures to explain concepts and problems and this mathematics text shows you how to express precise ideas in clear mathematical language. Through a wealth of exercises and examples, you will learn how mastering discrete mathematics will help you develop important reasoning skills that will continue to be useful throughout your career.

Discrete Mathematics Rowan Garnier 2020-10-28 In a comprehensive yet easy-to-follow manner, Discrete Mathematics for New Technology follows the progression from the basic mathematical concepts covered by the GCSE in the UK and by high-school algebra in the USA to the more sophisticated mathematical concepts examined in the latter stages of the book. The book punctuates the rigorous treatment of theory with frequent uses of pertinent examples and exercises, enabling readers to achieve a feel for the subject at hand. The exercise hints and solutions are provided at the end of the book. Topics covered include logic and the nature of mathematical proof, set theory, relations and functions, matrices and systems of linear equations, algebraic structures, Boolean algebras, and a thorough treatise on graph theory. Although aimed primarily at computer science students, the structured development of the mathematics enables this text to be used by undergraduate mathematicians, scientists, and others who require an understanding of discrete mathematics.

Student Solutions Guide for Discrete Mathematics and Its Applications Kenneth H. Rosen 1995 This text provides a balanced survey of major sub-fields within discrete mathematics. It demonstrates the utility of discrete mathematics in the solutions of real-world problems in diverse areas such as zoology, linguistics and business. Over 200 new problems have been added to this third edition.

Handbook of Discrete and Combinatorial Mathematics Kenneth H. Rosen 2017-10-19 Handbook of Discrete and Combinatorial Mathematics provides a comprehensive reference volume for mathematicians, computer scientists, engineers, as well as students and reference librarians. The material is presented so that key information can be located and used quickly and easily. Each chapter includes a glossary. Individual topics are covered in sections and subsections within chapters, each of which is organized into clearly identifiable parts: definitions, facts, and examples. Examples are provided to illustrate some of the key definitions, facts, and algorithms. Some curious and entertaining facts and puzzles are also included. Readers will also find an extensive collection of biographies. This second edition is a major revision. It includes extensive

additions and updates. Since the first edition appeared in 1999, many new discoveries have been made and new areas have grown in importance, which are covered in this edition.

Discrete Mathematical Structures with Applications to Computer Science Jean-Paul Tremblay 1987

Mathematics for Machine Learning Marc Peter Deisenroth 2020-04-23 The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

Discrete Mathematics Oscar Levin 2018-12-31 Note: This is the 3rd edition. If you need the 2nd edition for a course you are taking, it can be found as a "other format" on amazon, or by searching its isbn: 1534970746 This gentle introduction to discrete mathematics is written for first and second year math majors, especially those who intend to teach. The text began as a set of lecture notes for the discrete mathematics course at the University of Northern Colorado. This course serves both as an introduction to topics in discrete math and as the "introduction to proof" course for math majors. The course is usually taught with a large amount of student inquiry, and this text is written to help facilitate this. Four main topics are covered: counting, sequences, logic, and graph theory. Along the way proofs are introduced, including proofs by contradiction, proofs by induction, and combinatorial proofs. The book contains over 470 exercises, including 275 with solutions and over 100 with hints. There are also Investigate! activities throughout the text to support active, inquiry based learning. While there are many fine discrete math textbooks available, this text has the following advantages: It is written to be used in an inquiry rich course. It is written to be used in a course for future math teachers. It is open source, with low cost print editions and free electronic editions. This third edition brings improved exposition, a new section on trees, and a bunch of new and improved exercises. For a complete list of changes, and to view the free electronic version of the text, visit the book's website at discrete.openmathbooks.org

Discrete Mathematics with Applications Susanna S. Epp 2018-12-17 Known for its accessible, precise approach, Epp's DISCRETE MATHEMATICS WITH APPLICATIONS, 5th Edition, introduces discrete mathematics with clarity and precision. Coverage emphasizes the major themes of discrete mathematics as well as the reasoning that underlies mathematical thought. Students learn to think abstractly as they study the ideas of logic and proof. While learning about logic circuits and computer addition, algorithm analysis, recursive thinking, computability, automata, cryptography and combinatorics, students discover that ideas of

discrete mathematics underlie and are essential to today's science and technology. The author's emphasis on reasoning provides a foundation for computer science and upper-level mathematics courses. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Schaum's Outline of Discrete Mathematics, Revised Third Edition Seymour Lipschutz 2009-05-01 Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you: Practice problems with full explanations that reinforce knowledge Coverage of the most up-to-date developments in your course field In-depth review of practices and applications Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time-and get your best test scores! Schaum's Outlines-Problem Solved.

An Introduction to Abstract Mathematics Robert J. Bond 2007-08-24 Bond and Keane explicate the elements of logical, mathematical argument to elucidate the meaning and importance of mathematical rigor. With definitions of concepts at their disposal, students learn the rules of logical inference, read and understand proofs of theorems, and write their own proofs all while becoming familiar with the grammar of mathematics and its style. In addition, they will develop an appreciation of the different methods of proof (contradiction, induction), the value of a proof, and the beauty of an elegant argument. The authors emphasize that mathematics is an ongoing, vibrant disciplineits long, fascinating history continually intersects with territory still uncharted and questions still in need of answers. The authors extensive background in teaching mathematics shines through in this balanced, explicit, and engaging text, designed as a primer for higher- level mathematics courses. They elegantly demonstrate process and application and recognize the byproducts of both the achievements and the missteps of past thinkers. Chapters 1-5 introduce the fundamentals of abstract mathematics and chapters 6-8 apply the ideas and techniques, placing the earlier material in a real context. Readers interest is continually piqued by the use of clear explanations, practical examples, discussion and discovery exercises, and historical comments.

Discrete Mathematics And Structures Satinder Bal Gupta 2008-05 The Fifth Edition Of The Book 'Discrete Mathematics And Structures' Is An Outcome Of Author'S Continuous Discussions With His Colleagues And Students. Unlike Other Books, This Book Helps The Readers To Develop Mathematical Maturity And Understand The Basic Concepts Of Discrete Mathematics And Structures. Extensive In Its Coverage, Each New Concept Is Gently Introduced And Then Reinforced By A Lot Of Solved Examples. Questions From Various Examinations Have Been Incorporated To Enable The Students To Understand The Latest Trends In Paper-Setting.

Enumerative Combinatorics: Richard P. Stanley 2011-12-12 "Richard Stanley's two-volume basic introduction to enumerative combinatorics has become the standard guide to the topic for students and experts alike. This thoroughly revised second edition of Volume 1 includes ten new sections and more than 300

new exercises, most with solutions, reflecting numerous new developments since the publication of the first edition in 1986. The author brings the coverage up to date and includes a wide variety of additional applications and examples, as well as updated and expanded chapter bibliographies. Many of the less difficult new exercises have no solutions so that they can more easily be assigned to students. The material on P-partitions has been rearranged and generalized; the treatment of permutation statistics has been greatly enlarged; and there are also new sections on q-analogues of permutations, hyperplane arrangements, the cd-index, promotion and evacuation and differential posets"--

Discrete Mathematical Structures for Computer Science Bernard Kolman 1984

Discrete Mathematics Rowan Garnier 1992-05-01 In a comprehensive yet easy-to-follow manner, Discrete Mathematics for New Technology follows the progression from the basic mathematical concepts covered by the GCSE in the UK and by high-school algebra in the USA to the more sophisticated mathematical concepts examined in the latter stages of the book. The book punctuates the rigorous treatment of theory with frequent uses of pertinent examples and exercises, enabling readers to achieve a feel for the subject at hand. The exercise hints and solutions are provided at the end of the book. Topics covered include logic and the nature of mathematical proof, set theory, relations and functions, matrices and systems of linear equations, algebraic structures, Boolean algebras, and a thorough treatise on graph theory. Although aimed primarily at computer science students, the structured development of the mathematics enables this text to be used by undergraduate mathematicians, scientists, and others who require an understanding of discrete mathematics.

A Mathematical Introduction to Electronic Structure Theory Lin Lin 2019-06-05 Based on first principle quantum mechanics, electronic structure theory is widely used in physics, chemistry, materials science, and related fields and has recently received increasing research attention in applied and computational mathematics. This book provides a self-contained, mathematically oriented introduction to the subject and its associated algorithms and analysis. It will help applied mathematics students and researchers with minimal background in physics understand the basics of electronic structure theory and prepare them to conduct research in this area. The book begins with an elementary introduction of quantum mechanics, including the uncertainty principle and the Hartree?Fock theory, which is considered the starting point of modern electronic structure theory. The authors then provide an in-depth discussion of two carefully selected topics that are directly related to several aspects of modern electronic structure calculations: density matrix based algorithms and linear response theory. Chapter 2 introduces the Kohn?Sham density functional theory with a focus on the density matrix based numerical algorithms, and Chapter 3 introduces linear response theory, which provides a unified viewpoint of several important phenomena in physics and numerics. An understanding of these topics will prepare readers for more advanced topics in this field. The book concludes with the random phase approximation to the correlation energy. The book is written for advanced undergraduate and beginning graduate students, specifically those with mathematical backgrounds but without a priori knowledge of quantum mechanics, and can be used for self-study by researchers, instructors, and other scientists. The book can also serve as a starting point to learn about many-body perturbation theory, a topic at the frontier of the study of interacting electrons.

Discrete Structures, Logic, and Computability James L. Hein 2002 Discrete

Structure, Logic, and Computability introduces the beginning computer science student to some of the fundamental ideas and techniques used by computer scientists today, focusing on discrete structures, logic, and computability. The emphasis is on the computational aspects, so that the reader can see how the concepts are actually used. Because of logic's fundamental importance to computer science, the topic is examined extensively in three phases that cover informal logic, the technique of inductive proof; and formal logic and its applications to computer science.

Discrete Mathematical Structures for Computer Science Bernard Kolman 1987 This text has been designed as a complete introduction to discrete mathematics, primarily for computer science majors in either a one or two semester course. The topics addressed are of genuine use in computer science, and are presented in a logically coherent fashion. The material has been organized and interrelated to minimize the mass of definitions and the abstraction of some of the theory. For example, relations and directed graphs are treated as two aspects of the same mathematical idea. Whenever possible each new idea uses previously encountered material, and then developed in such a way that it simplifies the more complex ideas that follow.

Concrete Mathematics: A Foundation for Computer Science Ronald L. Graham 1994

Discrete Mathematics László Lovász 2006-05-11 Aimed at undergraduate mathematics and computer science students, this book is an excellent introduction to a lot of problems of discrete mathematics. It discusses a number of selected results and methods, mostly from areas of combinatorics and graph theory, and it uses proofs and problem solving to help students understand the solutions to problems. Numerous examples, figures, and exercises are spread throughout the book.

Proofs from THE BOOK Martin Aigner 2013-06-29 According to the great mathematician Paul Erdös, God maintains perfect mathematical proofs in The Book. This book presents the authors candidates for such "perfect proofs," those which contain brilliant ideas, clever connections, and wonderful observations, bringing new insight and surprising perspectives to problems from number theory, geometry, analysis, combinatorics, and graph theory. As a result, this book will be fun reading for anyone with an interest in mathematics.

Discrete Mathematics and Its Applications Kenneth Rosen 2016-07-19

Discrete Mathematical Algorithm, and Data Structures Sanjib Sinha 2021-03-26 Readers will learn discrete mathematical abstracts as well as its implementation in algorithm and data structures shown in various programming languages, such as C, C++, PHP, Java, C#, Python and Dart. This book combines two major components of Mathematics and Computer Science under one roof. Without the core conceptions and tools derived from discrete mathematics, one cannot understand the abstract or the general idea involving algorithm and data structures in Computer Science. The objects of data structures are basically objects of discrete mathematics. This book tries to bridge the gap between two major components of Mathematics and Computer Science.In any computer science course, studying discrete mathematics is essential, although they are taught separately, except in a few cases. Yet, a comprehensive book, combining these two major components, is hard to find out; not only that, it is almost impossible to understand one without the help of other.Hope, this book will

fill the gap. Readers will learn discrete mathematical abstracts as well as its implementation in algorithm and data structures shown in various programming language, such as C++, Java, C#, Python and Dart.1. Introduction to the Discourse Is Discrete Mathematics enough to study Computer Science? A short Introduction to Discrete Mathematics What is Discrete Mathematics What is the relationship between Discrete Mathematics and Computer Science Introducing necessary conceptions 2. Introduction to Programming Language and Boolean Algebra Logic, Mathematics, and Programming Language Introduction to Boolean Algebra 3. De Morgan's Laws on Boolean Algebra, Logical Expression, and Algorithm Logical Expression Short Circuit EvaluationSyntax, Semantics and Conditional ExecutionWhy we need Control Constructs Discrete Mathematical Notations and Algorithm 4. Data Structures in different Programming languages Mean, Median and Mode Array, the First Step to Data Structure Let us understand some Array features Set Theory, Probability and Array Skewed Mean, Maximized Median Complex Array Algorithm 5. Data Structures: Abstractions and Implementation How objects work with each other More Algorithm and Time Complexity Introducing Data Structures How Calculus and Linear Algebra are Related to this Discourse 6. Data Structures in Detail Frequently Asked Questions about Data Structures Abstract Data Type (ADT) Linear Data Structures Modeling of a Structure ArrayList to overcome limitations of Array ArrayList or LinkedList, which is faster? Collection Framework in programming languages Stack and Queue in Java Deque, a high-performance Abstract Data Type 7. Algorithm, Data Structure, Collection Framework and Standard Template Library (STL) Introducing Algorithm Library Different types of Algorithms Binary Tree and Data Structure Collection Framework in Java Discrete Mathematical Abstractions and Implementation through Java Collection Comparator, Comparable and Iterator Standard Template Library in C++ 8. Time Complexity Order of n, or O(n) Big O Notation 9. Set, Symmetric Difference and Propositional Logic Why Set is important in Data Structures How Symmetric Difference and Propositional Logic combine 10. Combinatorics and Counting, Permutation and Combinations Permutation and CombinationWhat Next

Handbook of Mathematics I.N. Bronshtein 2015-03-19 This guide book to mathematics contains in handbook form the fundamental working knowledge of mathematics which is needed as an everyday guide for working scientists and engineers, as well as for students. Easy to understand, and convenient to use, this guide book gives concisely the information necessary to evaluate most problems which occur in concrete applications. In the newer editions emphasis was laid on those fields of mathematics that became more important for the formulation and modeling of technical and natural processes, namely Numerical Mathematics, Probability Theory and Statistics, as well as Information Processing. Besides many enhancements and new paragraphs, new sections on Geometric and Coordinate Transformations, Quaternions and Applications, and Lie Groups and Lie Algebras were added for the sixth edition.

Discrete Mathematics Using a Computer Cordelia Hall 2013-04-17 Several areas of mathematics find application throughout computer science, and all students of computer science need a practical working understanding of them. These core subjects are centred on logic, sets, recursion, induction, relations and functions. The material is often called discrete mathematics, to distinguish it from the traditional topics of continuous mathematics such as integration and differential equations. The central theme of this book is the connection between computing and discrete mathematics. This connection is useful in both directions: • Mathematics is used in many branches of computer science, in applica tions including program specification, datastructures,design and

analysis of algorithms, database systems, hardware design, reasoning about the correctness of implementations, and much more; • Computers can help to make the mathematics easier to learn and use, by making mathematical terms executable, making abstract concepts more concrete, and through the use of software tools such as proof checkers. These connections are emphasised throughout the book. Software tools (see Appendix A) enable the computer to serve as a calculator, but instead of just doing arithmetic and trigonometric functions, it will be used to calculate with sets, relations, functions, predicates and inferences. There are also special software tools, for example a proof checker for logical proofs using natural deduction.

Discrete Mathematics and Its Applications Kenneth H. Rosen 2003 Discrete Mathematics and its Applications is a focused introduction to the primary themes in a discrete mathematics course, as introduced through extensive applications, expansive discussion, and detailed exercise sets. These themes include mathematical reasoning, combinatorial analysis, discrete structures, algorithmic thinking, and enhanced problem-solving skills through modeling. Its intent is to demonstrate the relevance and practicality of discrete mathematics to all students. The Fifth Edition includes a more thorough and linear presentation of logic, proof types and proof writing, and mathematical reasoning. This enhanced coverage will provide students with a solid understanding of the material as it relates to their immediate field of study and other relevant subjects. The inclusion of applications and examples to key topics has been significantly addressed to add clarity to every subject. True to the Fourth Edition, the text-specific web site supplements the subject matter in meaningful ways, offering additional material for students and instructors. Discrete math is an active subject with new discoveries made every year. The continual growth and updates to the web site reflect the active nature of the topics being discussed. The book is appropriate for a one- or two-term introductory discrete mathematics course to be taken by students in a wide variety of majors, including computer science, mathematics, and engineering. College Algebra is the only explicit prerequisite.

Discrete Mathematics and Its Applications Kenneth H. Rosen 2012

Discrete Mathematics and Its Applications Kenneth H. Rosen 2018-05 A precise, relevant, comprehensive approach to mathematical concepts...

Discrete Mathematical Structures Mario Benedicty 1987

FUNDAMENTALS OF DISCRETE MATHEMATICAL STRUCTURES K. R. CHOWDHARY 2015-01-02 This updated text, now in its Third Edition, continues to provide the basic concepts of discrete mathematics and its applications at an appropriate level of rigour. The text teaches mathematical logic, discusses how to work with discrete structures, analyzes combinatorial approach to problem-solving and develops an ability to create and understand mathematical models and algorithms essentials for writing computer programs. Every concept introduced in the text is first explained from the point of view of mathematics, followed by its relation to Computer Science. In addition, it offers excellent coverage of graph theory, mathematical reasoning, foundational material on set theory, relations and their computer representation, supported by a number of worked-out examples and exercises to reinforce the students' skill. Primarily intended for undergraduate students of Computer Science and Engineering, and Information Technology, this text will also be useful for undergraduate and postgraduate students of Computer Applications. New to this Edition Incorporates many new

sections and subsections such as recurrence relations with constant coefficients, linear recurrence relations with and without constant coefficients, rules for counting and shorting, Peano axioms, graph connecting, graph scanning algorithm, lexicographic shorting, chains, antichains and order-isomorphism, complemented lattices, isomorphic order sets, cyclic groups, automorphism groups, Abelian groups, group homomorphism, subgroups, permutation groups, cosets, and quotient subgroups. Includes many new worked-out examples, definitions, theorems, exercises, and GATE level MCQs with answers.

Applied Discrete Structures Ken Levasseur 2012

Discrete Mathematics of Neural Networks Martin Anthony 2001-01-01 This concise, readable book provides a sampling of the very large, active, and expanding field of artificial neural network theory. It considers select areas of discrete mathematics linking combinatorics and the theory of the simplest types of artificial neural networks. Neural networks have emerged as a key technology in many fields of application, and an understanding of the theories concerning what such systems can and cannot do is essential. Some classical results are presented with accessible proofs, together with some more recent perspectives, such as those obtained by considering decision lists. In addition, probabilistic models of neural network learning are discussed. Graph theory, some partially ordered set theory, computational complexity, and discrete probability are among the mathematical topics involved. Pointers to further reading and an extensive bibliography make this book a good starting point for research in discrete mathematics and neural networks.

Techniques for Designing and Analyzing Algorithms Douglas R. Stinson 2021-08-05 Techniques for Designing and Analyzing Algorithms Design and analysis of algorithms can be a difficult subject for students due to its sometimes-abstract nature and its use of a wide variety of mathematical tools. Here the author, an experienced and successful textbook writer, makes the subject as straightforward as possible in an up-to-date textbook incorporating various new developments appropriate for an introductory course. This text presents the main techniques of algorithm design, namely, divide-and-conquer algorithms, greedy algorithms, dynamic programming algorithms, and backtracking. Graph algorithms are studied in detail, and a careful treatment of the theory of NP-completeness is presented. In addition, the text includes useful introductory material on mathematical background including order notation, algorithm analysis and reductions, and basic data structures. This will serve as a useful review and reference for students who have covered this material in a previous course. Features The first three chapters provide a mathematical review, basic algorithm analysis, and data structures Detailed pseudocode descriptions of the algorithms along with illustrative algorithms are included Proofs of correctness of algorithms are included when appropriate The book presents a suitable amount of mathematical rigor After reading and understanding the material in this book, students will be able to apply the basic design principles to various real-world problems that they may encounter in their future professional careers.

Discrete Mathematical Structures (Classic Version) Bernard Kolman 2017-03-20 Originally published in 2009, reissued as part of Pearson's modern classic series.

Mathematical Structures for Computer Science Judith L. Gersting 2007 This edition offers a pedagogically rich and intuitive introduction to discrete

mathematics structures. It meets the needs of computer science majors by being both comprehensive and accessible.

Computational Discrete Mathematics Sriram Pemmaraju 2009-10-15 This book was first published in 2003. Combinatorica, an extension to the popular computer algebra system Mathematica®, is the most comprehensive software available for teaching and research applications of discrete mathematics, particularly combinatorics and graph theory. This book is the definitive reference/user's guide to Combinatorica, with examples of all 450 Combinatorica functions in action, along with the associated mathematical and algorithmic theory. The authors cover classical and advanced topics on the most important combinatorial objects: permutations, subsets, partitions, and Young tableaux, as well as all important areas of graph theory: graph construction operations, invariants, embeddings, and algorithmic graph theory. In addition to being a research tool, Combinatorica makes discrete mathematics accessible in new and exciting ways to a wide variety of people, by encouraging computational experimentation and visualization. The book contains no formal proofs, but enough discussion to understand and appreciate all the algorithms and theorems it contains.

Data Structures and Algorithms in Java Michael T. Goodrich 2014-01-28 The design and analysis of efficient data structures has long been recognized as a key component of the Computer Science curriculum. Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, net.datastructures. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.