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Discrete Mathematics for Computer Science Mathematics for Computer Science Discrete Mathematics in Computer Science Fundamentals of Discrete Math for Computer Science Discrete Mathematics for Computer Scientists String Theory and Its Applications: Tasi 2010 MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE Mathematics for Computer Technology Mathematics and Computer Science Discrete Mathematics for Computer Scientists Essential Discrete Mathematics for Computer Science Discrete Mathematics for Computer Scientists Concrete Mathematics Foundation Mathematics for Computer Science Discrete Mathematics for Computer Science Imaginary Mathematics for Computer Science Computer Mathematics for Programmers Computer Mathematics Mathematics for Computer Students Mathematics of Discrete Structures for Computer Science Discrete Mathematics for Computer Science Logic And Discrete Mathematics: A Computer Science Perspective Comprehensive Mathematics For Computer Scientists 1 Special Topics in Mathematics for Computer Scientists Introduction to the Mathematics of Computer Graphics The Computer as Crucible Solution Manual to Discrete Mathematics from Computer Science Discrete Mathematics Using a Computer Math for Computer Applications Mathematics for Computer Algebra Discrete Mathematical Algorithm, and Data Structures Mathematical Structures for Computer Science Mathematics for Computer Science Elementary Number Theory with Programming Discrete Mathematical Structures for Computer Science Mathematics for Computer Graphics Mathematical Foundations of Computer Science Computer-Supported Calculus Analysis for Computer Scientists Mathematics for computer graphics applications

Discrete Mathematics for Computer Science

2020-12-23

discrete mathematics for computer science an example based introduction is intended for a first or second year discrete mathematics course for computer science majors it covers many important mathematical topics essential for future computer science majors such as algorithms number representations logic set theory boolean algebra functions combinatorics algorithmic complexity graphs and trees features designed to be especially useful for courses at the community college level ideal as a first or second year textbook for computer science majors or as a general introduction to discrete mathematics written to be accessible to those with a limited mathematics background and to aid with the transition to abstract thinking filled with over 200 worked examples boxed for easy reference and over 200 practice problems with answers contains approximately 40 simple algorithms to aid students in becoming proficient with algorithm control structures and pseudocode includes an appendix on basic circuit design which provides a real world motivational example for computer science majors by drawing on multiple topics covered in the book to design a circuit that adds two eight digit binary numbers jon pierre fortney graduated from the university of pennsylvania in 1996 with a ba in mathematics and actuarial science and a bse in chemical engineering prior to returning to graduate school he worked as both an environmental engineer and as an actuarial analyst he graduated from arizona state university in 2008 with a phd in mathematics specializing in geometric mechanics since 2012 he has worked at zayed university in dubai this is his second mathematics textbook

Mathematics for Computer Science

2017-07-05

this book covers elementary discrete mathematics for computer science and engineering it emphasizes mathematical definitions and proofs as well as applicable methods topics include formal logic notation proof

methods induction well ordering sets relations elementary graph theory integer congruences asymptotic notation and growth of functions permutations and combinations counting principles discrete probability further selected topics may also be covered such as recursive definition and structural induction state machines and invariants recurrences generating functions the color images and text in this book have been converted to grayscale

Discrete Mathematics in Computer Science

1977

this textbook provides an engaging and motivational introduction to traditional topics in discrete mathematics in a manner specifically designed to appeal to computer science students the text empowers students to think critically to be effective problem solvers to integrate theory and practice and to recognize the importance of abstraction clearly structured and interactive in nature the book presents detailed walkthroughs of several algorithms stimulating a conversation with the reader through informal commentary and provocative questions features no university level background in mathematics required ideally structured for classroom use and self study with modular chapters following acm curriculum recommendations describes mathematical processes in an algorithmic manner contains examples and exercises throughout the text and highlights the most important concepts in each section selects examples that demonstrate a practical use for the concept in question

Fundamentals of Discrete Math for Computer Science

2012-10-16

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

Discrete Mathematics for Computer Scientists

2011

this book provides the basic concepts and applications of discrete mathematics and graph theory the book is aimed at undergraduate students of computer science and engineering and information technology it is also suitable for undergraduate and postgraduate students of computer science mathematics and computer applications the book exposes the students to fundamental knowledge in mathematical logic tautology and normal forms predicate logic rules of inference and validity of arguments elementary set theory venn diagrams functions and their relations algebraic structure binary operation group theory and homomorphism theory of permutations and combinations binomial and multinomial theorems recurrence relations and methods of solving them graph theory spanning tree eulerian and hamiltonian circuits and isomorphism

String Theory and Its Applications: Tasi 2010

2010-07-01

this is the first book where mathematics and computer science are directly confronted and joined to tackle intricate problems in computer science with deep mathematical approaches it contains a collection of refereed papers presented at the colloquium on mathematics and computer science held at the university of versailles st quentin on september 18 20 2000 the colloquium was a meeting place for researchers in mathematics and computer science and thus an important opportunity to exchange ideas and points of view and to present new approaches and new results in the common areas such as algorithms analysis trees combinatorics optimization

performance evaluation and probabilities the book is intended for a large public in applied mathematics discrete mathematics and computer science including researchers teachers graduate students and engineers it provides an overview of the current questions in computer science and related modern mathematical methods the range of applications is very wide and reaches beyond computer science

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

2010-02

this book introduces readers to the mathematics of computer science and prepares them for the math they will encounter in other college courses it includes applications that are specific to computer science helps learners to develop reasoning skills and provides the fundamental mathematics necessary for computer scientists chapter topics include sets functions and relations boolean algebra natural numbers and induction number theory recursion solving recurrences counting matrices and graphs for computer scientists and the enhancement of programming skills

Mathematics for Computer Technology

2000

provides computer science students with a foundation in discrete mathematics using relevant computer science applications

Mathematics and Computer Science

1991

this book introduces the mathematics that supports advanced computer programming and the analysis of algorithms the primary aim of its well known authors is to provide a solid and relevant base of mathematical skills the skills needed to solve complex problems to evaluate horrendous sums and to discover subtle patterns in data it is an indispensable text and reference not only for computer scientists the authors themselves rely heavily on it but for serious users of mathematics in virtually every discipline concrete mathematics is a blending of continuous and discrete mathematics more concretely the authors explain it is the controlled manipulation of mathematical formulas using a collection of techniques for solving problems the subject matter is primarily an expansion of the mathematical preliminaries section in knuth s classic art of computer programming but the style of presentation is more leisurely and individual topics are covered more deeply several new topics have been added and the most significant ideas have been traced to their historical roots the book includes more than 500 exercises divided into six categories complete answers are provided for all exercises except research problems making the book particularly valuable for self study major topics include sums recurrences integer functions elementary number theory binomial coefficients generating functions discrete probability asymptotic methods this second edition includes important new material about mechanical summation in response to the widespread use of the first edition as a reference book the bibliography and index have also been expanded and additional nontrivial improvements can be found on almost every page readers will appreciate the informal style of concrete mathematics particularly enjoyable are the marginal graffiti contributed by students who have taken courses based on this material the authors want to convey not only the importance of the techniques presented but some of the fun in learning and using them

Discrete Mathematics for Computer Scientists

2003

in this third edition of foundation mathematics for computer science john vince has reviewed and edited the second edition and added chapters on systems of counting area and volume these subjects complement the existing chapters on visual mathematics numbers algebra logic combinatorics probability modular arithmetic

trigonometry coordinate systems determinants vectors complex numbers matrices geometric matrix transforms differential and integral calculus during this journey the author touches upon more esoteric topics such as quaternions octonions grassmann algebra barrycentric coordinates transfinite sets and prime numbers john vince describes a range of mathematical topics that provide a solid foundation for an undergraduate course in computer science starting with a review of number systems and their relevance to digital computers and finishing with calculating area and volume using calculus readers will find that the author s visual approach should greatly improve their understanding as to why certain mathematical structures exist together with how they are used in real world applications this third edition includes new full colour illustrations to clarify the mathematical descriptions and in some cases equations are also coloured to reveal vital algebraic patterns the numerous worked examples will help consolidate the understanding of abstract mathematical concepts whether you intend to pursue a career in programming scientific visualisation artificial intelligence systems design or real time computing you should find the author s literary style refreshingly lucid and engaging and prepare you for more advanced texts

Essential Discrete Mathematics for Computer Science

1983

discrete mathematics for computer science is the perfect text to combine the fields of mathematics and computer science written by leading academics in the field of computer science readers will gain the skills needed to write and understand the concept of proof this text teaches all the math with the exception of linear algebra that is needed to succeed in computer science the book explores the topics of basic combinatorics number and graph theory logic and proof techniques and many more appropriate for large or small class sizes or self study for the motivated professional reader assumes familiarity with data structures early treatment of number theory and combinatorics allow readers to explore rsa encryption early and also to encourage them to use their knowledge of hashing and trees from cs2 before those topics are covered in this course

Discrete Mathematics for Computer Scientists

1994-02-28

the imaginary unit i 1 has been used by mathematicians for nearly five hundred years during which time its physical meaning has been a constant challenge unfortunately rené descartes referred to it as imaginary and the use of the term complex number compounded the unnecessary mystery associated with this amazing object today i 1 has found its way into virtually every branch of mathematics and is widely employed in physics and science from solving problems in electrical engineering to quantum field theory john vince describes the evolution of the imaginary unit from the roots of quadratic and cubic equations hamilton s quaternions cayley s octonions to grassmann s geometric algebra in spite of the aura of mystery that surrounds the subject john vince makes the subject accessible and very readable the first two chapters cover the imaginary unit and its integration with real numbers chapter 3 describes how complex numbers work with matrices and shows how to compute complex eigenvalues and eigenvectors chapters 4 and 5 cover hamilton s invention of quaternions and cayley s development of octonions respectively chapter 6 provides a brief introduction to geometric algebra which possesses many of the imaginary qualities of quaternions but works in space of any dimension the second half of the book is devoted to applications of complex numbers quaternions and geometric algebra john vince explains how complex numbers simplify trigonometric identities wave combinations and phase differences in circuit analysis and how geometric algebra resolves geometric problems and quaternions rotate 3d vectors there are two short chapters on the riemann hypothesis and the mandelbrot set both of which use complex numbers the last chapter references the role of complex numbers in quantum mechanics and ends with schrödinger s famous wave equation filled with lots of clear examples and useful illustrations this compact book provides an excellent introduction to imaginary mathematics for computer science

Concrete Mathematics

2023-01-24

computer mathematics for programmers presents the mathematics that is essential to the computer programmer the book is comprised of 10 chapters the first chapter introduces several computer number systems chapter 2 shows how to perform arithmetic operations using the number systems introduced in chapter 1 the third chapter covers the way numbers are stored in computers how the computer performs arithmetic on real numbers and integers and how round off errors are generated in computer programs chapter 4 details the use of algorithms and flowcharting as problem solving tools for computer programming subsequent chapters focuses on specific mathematical topics such as algebra sets logic boolean algebra matrices graphing and linear programming and statistics students of computer programming will find the text very useful

Foundation Mathematics for Computer Science

2005-09-08

computing is an exact science and the systematic study of any aspect necessarily involves the use of mathematical models moreover the rate at which the subject is evolving demands a facility for developing new mathematical systems to keep pace with new computing systems and this requires an appreciation of how mathematics works an understanding of the underlying mathematical structure facilitates the construction of suitable computer programs to perform computations assuming no specific knowledge of mathematics the authors describe all the basic concepts required and progress from sets rather than numbers through a variety of algebraic structures that permit the precise description specification and subsequent analysis of many problems in computing the material included provides the essential mathematical foundations for core topics of computer science and extends into the areas of language theory abstract machine theory and computer

geometry computer mathematics will be of interest to undergraduate students of computer science and mathematics post graduate computing conversion course students and computer professionals who need an introduction to the mathematics that underpins computer science theory

Discrete Mathematics for Computer Science

2018-08-16

mathematics for computer students is a new text which takes a fresh approach to mathematics as it relates to good computing practice the book is a new addition to the popular threshold series which have been widely adopted on business and computing courses throughout colleges of further education worldwide the book approaches the subject by encouraging students to understand the relationship between mathematics and computing so that they can select appropriate mathematical processes rather than seeing the former only as an assortment of disconnected practices to help the student to see familiar ground between the two subjects the author considers the practical applications of mathematics for computing before approaching the formal mathematics he considers step by step the following the skills of creating mathematical models numerical and logical the existing processes for manipulating those models the special demands imposed by the computer and throughout he considers how accuracy can be safeguarded and the control of the processing the text contains exercises both within the text and at the end of each chapter

Imaginary Mathematics for Computer Science

2014-05-09

mathematics plays a key role in computer science some researchers would consider computers as nothing but the physical embodiment of mathematical systems and whether you are designing a digital circuit a computer program or a new programming language you need mathematics to be able to reason about the design its

correctness robustness and dependability this book covers the foundational mathematics necessary for courses in computer science the common approach to presenting mathematical concepts and operators is to define them in terms of properties they satisfy and then based on these definitions develop ways of computing the result of applying the operators and prove them correct this book is mainly written for computer science students so here the author takes a different approach he starts by defining ways of calculating the results of applying the operators and then proves that they satisfy various properties after justifying his underlying approach the author offers detailed chapters covering propositional logic predicate calculus sets relations discrete structures structured types numbers and reasoning about programs the book contains chapter and section summaries detailed proofs and many end of section exercises key to the learning process the book is suitable for undergraduate and graduate students and although the treatment focuses on areas with frequent applications in computer science the book is also suitable for students of mathematics and engineering

Computer Mathematics for Programmers

1984-05-24

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

Computer Mathematics

1995-10

this two volume textbook is a self contained yet comprehensive presentation of mathematics the numerous course examples are motivated by computer science and bear a generic scientific meaning for the second edition the entire text has been carefully re written many examples and illustrations have been added and explanations have been clarified this makes the book more accessible to both instructors and students

Mathematics for Computer Students

2012-09-13

this textbook addresses the mathematical description of sets categories topologies and measures as part of the basis for advanced areas in theoretical computer science like semantics programming languages probabilistic process algebras modal and dynamic logics and markov transition systems using motivations rigorous definitions proofs and various examples the author systematically introduces the axiom of choice explains banach mazur games and the axiom of determinacy discusses the basic constructions of sets and the interplay of coalgebras and kripke models for modal logics with an emphasis on kleisli categories monads and probabilistic systems the text further shows various ways of defining topologies building on selected topics like uniform spaces gödel s completeness theorem and topological systems finally measurability general integration borel sets and measures on polish spaces as well as the coalgebraic side of markov transition kernels along with applications to probabilistic interpretations of modal logics are presented special emphasis is given to the integration of co algebraic and measure theoretic structures a fairly new and exciting field which is demonstrated through the interpretation of game logics readers familiar with basic mathematical structures like groups boolean algebras and elementary calculus including mathematical induction will discover a wealth of useful research tools throughout the book exercises offer additional information and case studies give examples of how the techniques can be applied in diverse areas of theoretical computer science and logics references to the relevant mathematical literature enable the reader to find the original works and classical treatises while the bibliographic notes at the end of each chapter provide further insights and discussions of alternative approaches

Mathematics of Discrete Structures for Computer Science

2006

this text by an award winning author was designed to accompany his first year seminar in the mathematics of computer graphics readers learn the mathematics behind the computational aspects of space shape transformation color rendering animation and modeling the software required is freely available on the internet for mac windows and linux the text answers questions such as these how do artists build up realistic shapes from geometric primitives what computations is my computer doing when it generates a realistic image of my 3d scene what mathematical tools can i use to animate an object through space why do movies always look more realistic than video games containing the mathematics and computing needed for making their own 3d computer generated images and animations the text and the course it supports culminates in a project in which students create a short animated movie using free software algebra and trigonometry are prerequisites calculus is not though it helps programming is not required includes optional advanced exercises for students with strong backgrounds in math or computer science instructors interested in exposing their liberal arts students to the beautiful mathematics behind computer graphics will find a rich resource in this text

Discrete Mathematics for Computer Science

2007-09

keith devlin and jonathan borwein two well known mathematicians with expertise in different mathematical specialties but with a common interest in experimentation in mathematics have joined forces to create this introduction to experimental mathematics they cover a variety of topics and examples to give the reader a good sense of the current sta

Logic And Discrete Mathematics: A Computer Science Perspective

2004

computer science abounds with applications of discrete mathematics yet s dents of computer science often study discrete mathematics in the context of purely mathematical applications they have to gure out for themselves how to apply the ideas of discrete mathematics to computing problems it is not easy most students fail to experience broad success in this enterprise which is not surprising since many of the most important advances in science and engineeringhavebeen precisely applicationsofmathematicstospeci cscience and engineering problems tobesure mostdiscretemathtextbooksincorporatesomeaspectsapplying discrete math to computing but it usually takes the form of asking students to write programs to compute the number of three ball combinations there are in a set of ten balls or at best to implement a graph algorithm few texts ask students to use mathematical logic to analyze properties of digital circuits or computer programs or to apply the set theoretic model of functions to understand higher order operations a major aim of this text is to integrate tightly the study of discrete mathematics with the study of central problems of computer science

Comprehensive Mathematics For Computer Scientists 1

2015-11-23

rea s essentials provide quick and easy access to critical information in a variety of different fields ranging from the most basic to the most advanced as its name implies these concise comprehensive study guides summarize the essentials of the field covered essentials are helpful when preparing for exams doing homework and will remain a lasting reference source for students teachers and professionals topics include logic set theory relations and functions vectors and matrices graph theory counting and binomial theorem probability boolean algebra and linear programming and game theory

Special Topics in Mathematics for Computer Scientists

2016-12-31

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

Introduction to the Mathematics of Computer Graphics

2008-10-28

mathematical structures for computer science written by judith l gersting is a vital textbook for computer science undergraduate students which helps to introduce readers to the maths behind computing this textbook has long been much loved and acclaimed for its clear concise presentation of essential concepts and its exceptional range of applications relevant to computer science majors this new edition made the textbook the first discrete mathematics textbook to be revised in order to meet the proposed new acm ieee standards of the course it features new material including new sections on probability coding theory matrices and order of magnitude it also includes roughly 30 more exercises and examples further aiding students learning of this complex subject underpinning the field of computing

The Computer as Crucible

1986-01-01

this text provides the essential mathematics needed to study computing the authors are aware that many

student do not have the same mathematical background common 5 years ago and this book has been written to accommodate these changes many exercises are provided with detailed answers and difficult concepts are thoroughly illustrated to help learning chapters are designed to be read in isolation with interdependence between chapters minimalised

Solution Manual to Discrete Mathematics from Computer Science

2009-10-12

a highly successful presentation of the fundamental concepts of number theory and computer programming bridging an existing gap between mathematics and programming elementary number theory with programming provides a unique introduction to elementary number theory with fundamental coverage of computer programming written by highly qualified experts in the fields of computer science and mathematics the book features accessible coverage for readers with various levels of experience and explores number theory in the context of programming without relying on advanced prerequisite knowledge and concepts in either area elementary number theory with programming features comprehensive coverage of the methodology and applications of the most well known theorems problems and concepts in number theory using standard mathematical applications within the programming field the book presents modular arithmetic and prime decomposition which are the basis of the public private key system of cryptography in addition the book includes numerous examples exercises and research challenges in each chapter to encourage readers to work through the discussed concepts and ideas select solutions to the chapter exercises in an appendix plentiful sample computer programs to aid comprehension of the presented material for readers who have either never done any programming or need to improve their existing skill set a related website with links to select exercises an instructor s solutions manual available on a companion website elementary number theory with programming is a useful textbook for undergraduate and graduate level students majoring in mathematics or computer science as well as an excellent supplement for teachers and students who would like to better understand and appreciate number theory and computer programming the book is also an ideal

reference for computer scientists programmers and researchers interested in the mathematical applications of programming

Discrete Mathematics Using a Computer

1999

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

Math for Computer Applications

1991-11-25

john vince explains a wide range of mathematical techniques and problem solving strategies associated with computer games computer animation virtual reality cad and other areas of computer graphics in this completely revised and expanded fifth edition the first five chapters cover a general introduction number sets algebra trigonometry and coordinate systems which are employed in the following chapters on vectors matrix algebra transforms interpolation curves and patches analytic geometry and barycentric coordinates following this the reader is introduced to the relatively new topic of geometric algebra followed by two chapters that introduce differential and integral calculus finally there is a chapter on worked examples mathematics for computer graphics covers all of the key areas of the subject including number sets algebra trigonometry coordinate systems determinants vectors quaternions matrix algebra geometric transforms interpolation

curves and surfaces analytic geometry barycentric coordinates geometric algebra differential calculus integral calculus this fifth edition contains over 120 worked examples and over 320 colour illustrations which are central to the author s descriptive writing style mathematics for computer graphics provides a sound understanding of the mathematics required for computer graphics giving a fascinating insight into the design of computer graphics software and setting the scene for further reading of more advanced books and technical research papers

Mathematics for Computer Algebra

2021-03-26

mathematical foundations of computer science volume i is the first of two volumes presenting topics from mathematics mostly discrete mathematics which have proven relevant and useful to computer science this volume treats basic topics mostly of a set theoretical nature sets functions and relations partially ordered sets induction enumerability and diagonalization and illustrates the usefulness of mathematical ideas by presenting applications to computer science readers will find useful applications in algorithms databases semantics of programming languages formal languages theory of computation and program verification the material is treated in a straightforward systematic and rigorous manner the volume is organized by mathematical area making the material easily accessible to the upper undergraduate students in mathematics as well as in computer science and each chapter contains a large number of exercises the volume can be used as a textbook but it will also be useful to researchers and professionals who want a thorough presentation of the mathematical tools they need in a single source in addition the book can be used effectively as supplementary reading material in computer science courses particularly those courses which involve the semantics of programming languages formal languages and automata and logic programming

Discrete Mathematical Algorithm, and Data Structures

2014-01-01

this is a new type of calculus book students who master this text will be well versed in calculus and in addition possess a useful working knowledge of one of the most important mathematical software systems namely macsyma this will equip them with the mathematical competence they need for science and engi neering and the competitive workplace the choice of macsyma is not essential for the didactic goal of the book in fact any of the other major mathematical software systems e g axiom mathematica maple derive or reduce could have been taken for the examples and for acquiring the skill in using these systems for doing mathematics on computers the symbolic and numerical calcu lations described in this book will be easily performed in any of these systems by slight modification of the syntax as soon as the student understands and masters the macsyma examples in this book what is important however is that the student gets all the information necessary to design and execute the calculations in at least one concrete implementation language as this is done in this book and also that the use of the mathematical software system is completely integrated with the text in these times of globalization firms which are unable to hire adequately trained technology experts will not prosper for corporations which depend heavily on sci ence and engineering remaining competitive in the global economy will require hiring employees having had a traditionally rigorous mathematical education

Mathematical Structures for Computer Science

1996

this textbook presents an algorithmic approach to mathematical analysis with a focus on modelling and on the applications of analysis fully integrating mathematical software into the text as an important component of analysis the book makes thorough use of examples and explanations using matlab maple and java applets mathematical theory is described alongside the basic concepts and methods of numerical analysis supported

by computer experiments and programming exercises and an extensive use of figure illustrations features thoroughly describes the essential concepts of analysis provides summaries and exercises in each chapter as well as computer experiments discusses important applications and advanced topics presents tools from vector and matrix algebra in the appendices together with further information on continuity includes definitions propositions and examples throughout the text supplementary software can be downloaded from the book s webpage

Mathematics for Computer Science

2015-06-02

Elementary Number Theory with Programming

1987

Discrete Mathematical Structures for Computer Science

2017-09-11

Mathematics for Computer Graphics

2011-12-27

Mathematical Foundations of Computer Science

2012-12-06

Computer-Supported Calculus

2011-03-19

Analysis for Computer Scientists

1999

Mathematics for computer graphics applications

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