

International Journal Computers Mathematics With Applications

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Fundamentals, Real Problems, and Computers Academic Press

Volume II is the second part of the 3-volume book *Mathematics of Harmony as a New Interdisciplinary Direction and 'Golden' Paradigm of Modern Science*. 'Mathematics of Harmony' rises in its origin to the 'harmonic ideas' of Pythagoras, Plato and Euclid, this 3-volume book aims to promote more deep understanding of ancient conception of the 'Universe Harmony,' the main conception of ancient Greek science, and implementation of this conception to modern science and education. This 3-volume book is a result of the authors' research in the field of Fibonacci numbers and the Golden Section and their applications. It provides a broad introduction to the fascinating and beautiful subject of the 'Mathematics of Harmony,' a new interdisciplinary direction of modern science. This direction has many unexpected applications in contemporary mathematics (a new approach to a history of mathematics, the generalized Fibonacci numbers and the generalized golden proportions, the generalized Binet's formulas), theoretical physics (new hyperbolic models of Nature) and computer science (algorithmic measurement theory, number systems with irrational bases, Fibonacci computers, ternary mirror-symmetrical arithmetic). The books are intended for a wide audience including mathematics teachers of high schools, students of colleges and universities and scientists in the field of mathematics, theoretical physics and computer science. The book may be used as an advanced textbook by graduate students and even ambitious

undergraduates in mathematics and computer science.
Mathematical Foundations of Computer Science 1996 John Wiley & Sons
Calculus for Engineering Students: Fundamentals, Real Problems, and Computers insists that mathematics cannot be separated from chemistry, mechanics, electricity, electronics, automation, and other disciplines. It emphasizes interdisciplinary problems as a way to show the importance of calculus in engineering tasks and problems. While concentrating on actual problems instead of theory, the book uses Computer Algebra Systems (CAS) to help students incorporate lessons into their own studies. Assuming a working familiarity with calculus concepts, the book provides a hands-on opportunity for students to increase their calculus and mathematics skills while also learning about engineering applications. Organized around project-based rather than traditional homework-based learning Reviews basic mathematics and theory while also introducing applications Employs uniform chapter sections that encourage the comparison and contrast of different areas of engineering
Grammars with Context Conditions and Their Applications Springer
Emerging developments in cloud computing have created novel opportunities and applications for businesses. These innovations not only have organizational benefits, but can be advantageous for green enterprises as well. *Cloud Computing Technologies for Green Enterprises* is a pivotal reference source for the latest scholarly research on the advancements, benefits, and challenges of cloud computing for green enterprise endeavors. Highlighting pertinent topics such as resource allocation, energy efficiency, and mobile computing, this book is a premier resource for academics, researchers, students, professionals, and managers interested in novel trends in cloud computing applications.
Proceedings of the Third International Conference on High Performance Scientific Computing, March 6-10, 2006, Hanoi, Vietnam Springer Science & Business Media

The essential guide to grammars with context conditions This advanced computer science book systematically and compactly summarizes the current knowledge about grammars with context conditions-an important area of formal language theory. According to the types of context conditions, this self-contained reference classifies them into grammars with context conditions placed on the domains of grammatical derivations, the use of grammatical productions, and the neighborhood of the rewritten symbols. The focus is on grammatical generative power, important properties, simplification, reduction, implementation, and applications, most of which are related to microbiology. The text features: * Up-to-date coverage of grammatical concepts based on context conditions * Self-contained explanations without assumption of any previous knowledge * Clear definitions and exact proofs preceded by intuitive explanations * Numerous easy-to-implement grammatical transformations * Realistic applications * Relation to mathematics, linguistics, and biology * Additional material and information about the book available on accompanying Web site (see preface for details) Practitioners and advanced students in theoretical computer science and related areas- including mathematics, linguistics, and molecular biology- will find *Grammars with Context Conditions and Their Applications* an essential reference for this cutting-edge area of formal language theory.

11th International Conference, AISC 2012, 19th Symposium, Calculemus 2012, 5th International Workshop, DML 2012, 11th International Conference, MKM 2012, Systems and Projects, Held as Part of CICM 2012, Bremen, Germany, July 8-13, 2012, Proceedings Springer Science & Business Media

This compilation probably looks like one of

the craziest things a human being could spend his or her time on. Yet nobody would wonder at someone taking a short walk every day - after twenty five years that person would have covered a surprisingly long distance. This is exactly the story behind this list, which appeared first as a few pages within the directory StarGuides (or whatever name it had at that time) and as a distinct sister publication since 1990. The idea behind this dictionary is to offer astronomers and related space scientists practical assistance in decoding the numerous abbreviations, acronyms, contractions and symbols which they might encounter in all aspects of the vast range of their professional activities, including traveling. Perhaps it is a bit paradoxical, but if scientists quickly grasp the meaning of an acronym solely in their own specific discipline, they will probably encounter more difficulties when dealing with adjacent fields. It is for this purpose that this dictionary might be most often used.

Scientists might also refer to this compilation in order to avoid identifying a project by an acronym which already has too many meanings or confused definitions.

Computer and Computing Technologies in Agriculture Academic Press

In the last years, it was observed an increasing interest of computer scientists in the structure of biological molecules and the way how they can be manipulated in vitro in order to define theoretical models of computation based on genetic engineering tools. Along the same lines, a parallel interest is growing regarding the process of evolution of living organisms. Much of the current data for genomes are expressed in the form of maps which are now becoming available and permit the study of the evolution of organisms at the scale of genome for the first time. On the other hand, there is an active trend nowadays throughout the field of computational biology toward abstracted, hierarchical views of biological sequences, which is very much in the spirit of computational linguistics. In the last decades, results and methods in the field of formal language theory that might be applied to the description of biological sequences were pointed out.

Formal and Natural Computing IGI Global
This state-of-the-art Handbook brings together important mathematics education research that makes a difference in both theory and practice--research that: anticipates problems and needed knowledge before they become impediments to progress; interprets future-

oriented problems into researchable issues; presents the implications of research and theory development in forms that are useful to practitioners and policymakers; and facilitates the development of research communities to focus on neglected priorities or strategic opportunities. The volume represents a genuine attempt by contributors from around the world to advance the discipline, rather than simply review what has been done and what exists. The Handbook was developed in response to a number of major global catalysts for change, including the impact of national and international mathematics comparative assessment studies; the social, cultural, economic, and political influences on mathematics education and research; the influence of progressively sophisticated and available technology; and the increasing globalization of mathematics education and research. From these catalysts have emerged specific priority themes and issues for mathematics education research in the 21st century. Three key themes were identified for attention in this volume: life-long democratic access to powerful mathematical ideas; advances in research methodologies; and influences of advanced technologies. Each of these themes is examined in terms of learners, teachers, and learning contexts, with theory development as an important component of all these aspects. Dynamic and forward looking, the Handbook of International Research in Mathematics Education is distinguished by its focus on new and emerging theoretical models, perspectives, and research methodologies; its uniformly high standard of scholarship; and its emphasis on the international nature of mathematics education research. It is an essential volume for all researchers, professionals, and students interested in mathematics education research in particular and, more generally, in international developments and future directions in the broad field of educational research.

Calculus for Engineering Students CRC Press

A diverse group of scholars redefine constructionism--introduced by Seymour Papert in 1980--in light of new technologies and theories. Constructionism, first introduced by Seymour Papert in 1980, is a framework for learning to understand something by making an artifact for and with other people. A core goal of constructionists is to respect learners as creators, to enable them to engage in making meaning for themselves through construction, and to do this by democratizing access to the world's most creative and powerful tools. In this volume, an international and diverse group

of scholars examine, reconstruct, and evolve the constructionist paradigm in light of new technologies and theories.

Information Computing and Applications Springer Nature

The Second International Conference on High-Performance Computing and Applications (HPCA 2009) was a follow-up event of the successful HPCA 2004. It was held in Shanghai, a beautiful, active, and modern city in China, August 10-12, 2009. It served as a forum to present current work by researchers and software developers from around the world as well as to highlight activities in the high-performance computing area. It aimed to bring together research scientists, application pioneers, and software developers to discuss problems and solutions and to identify new issues in this area. This conference emphasized the development and study of novel approaches for high-performance computing, the design and analysis of high-performance numerical algorithms, and their scientific, engineering, and industrial applications. It offered the conference participants a great opportunity to exchange the latest research results, heighten international collaboration, and discuss future research ideas in HPCA. In addition to 24 invited presentations, the conference received over 300 contributed submissions from over ten countries and regions worldwide, about 70 of which were accepted for presentation at HPCA 2009. The conference proceedings contain some of the invited presentations and contributed submissions, and cover such research areas of interest as numerical algorithms and solutions, high-performance and grid computing, novel approaches to high-performance computing, massive data storage and processing, hardware acceleration, and their wide applications.

Computational Science and Technology World Scientific

This monograph contains results of recent research interests concerning solution strategies employed for solving real life problems pertaining to modelling and scientific computing, control and optimizations, and financial mathematics.

Modeling, Simulation and Optimization of Complex Processes MIT Press

This proceedings volume covers the broad interdisciplinary spectrum of scientific computing and presents recent advances in theory, development of methods, and applications in practice.

Essays in honour of Gheorghe Păun

Springer Science & Business Media

The three-volume set IFIP AICT 368-370 constitutes the refereed post-conference proceedings of the 5th IFIP TC 5, SIG 5.1 International Conference on Computer and Computing Technologies in Agriculture, CCTA 2011, held in Beijing, China, in October 2011. The 189 revised papers presented were carefully selected from numerous submissions. They cover a wide range of interesting theories and applications of information technology in agriculture, including simulation models and decision-support systems for agricultural production, agricultural product

quality testing, traceability and e-commerce technology, the application of information and communication technology in agriculture, and universal information service technology and service systems development in rural areas. The 62 papers included in the first volume focus on decision support systems, intelligent systems, and artificial intelligence applications.

The Art, Theory, and Practice of Learning Designs Springer

Introduction to the theory of finite fields and to some of their many applications. The first chapter is devoted to the theory of finite fields. After covering their construction and elementary properties, the authors discuss the trace and norm functions, bases for finite fields, and properties of polynomials over finite fields. Chapter 2 deals with combinatorial topics such as the construction of sets of orthogonal Latin squares, affine and projective planes, block designs, and Hadamard matrices. Chapters 3 and 4 provide a number of constructions and basic properties of error-correcting codes and cryptographic systems using finite fields. Appendix A provides a brief review of the basic number theory and abstract algebra used in the text. Appendix B provides hints and partial solutions for many of the exercises in each chapter.--From publisher description.

Handbook of International Research in Mathematics Education IGI Global

Mathematical aesthetics is not discussed as a separate discipline in other books than this, even though it is reasonable to suppose that the foundations of physics lie in mathematical aesthetics. This book presents a list of mathematical principles that can be classified as "aesthetic" and shows that these principles can be cast into a nonlinear set of equations. Then, with this minimal input, the book shows that one can obtain lattice solutions, soliton systems, closed strings, instantons and chaotic-looking systems as well as multi-wave-packet solutions as output. These solutions have the common feature of being nonintegrable, i.e. the results of integration depend on the integration path. The topic of nonintegrable systems has not been given much attention in other books. Hence we discuss techniques for dealing with such systems. Contents: Mathematical AestheticsNonintegrable SystemsCommutator MethodNonintegrability and the Arrow of TimeThe Gamma Equations as a Source of Fundamental Building BlocksA Study of Some Additional Solutions to the Gamma EquationsMathematical Aesthetics: Additional TopicsElements of the CalculusTheorem of the Calculus Requiring Path Independence for Integrable SystemsElements of TensorsElements of Determinant TheoryCurvilinear Coordinates Readership: Graduate students, researchers in applied mathematics and mathematical analysis. keywords:Mathematical Physics;Mathematical

Aesthetic Principles;Nonintegrable Systems;Tensor Calculus;Foundations of Physics

Third International Conference, ICICA 2012, Chengde, China, September 14-16, 2012, Revised Selected Papers Routledge

Brings mathematics to bear on your real-world, scientific problems Mathematical Methods in Interdisciplinary Sciences provides a practical and usable framework for bringing a mathematical approach to modelling real-life scientific and technological problems. The collection of chapters Dr. Snehashish Chakraverty has provided describe in detail how to bring mathematics, statistics, and computational methods to the fore to solve even the most stubborn problems involving the intersection of multiple fields of study. Graduate students, postgraduate students, researchers, and professors will all benefit significantly from the author's clear approach to applied mathematics. The book covers a wide range of interdisciplinary topics in which mathematics can be brought to bear on challenging problems requiring creative solutions. Subjects include: Structural static and vibration problems Heat conduction and diffusion problems Fluid dynamics problems The book also covers topics as diverse as soft computing and machine intelligence. It concludes with examinations of various fields of application, like infectious diseases, autonomous car and monotone inclusion problems.

Serial titles with ISSN listing Springer

This book gathers the proceedings of the Sixth International Conference on Computational Science and Technology 2019 (ICCST2019), held in Kota Kinabalu, Malaysia, on 29–30 August 2019. The respective contributions offer practitioners and researchers a range of new computational techniques and solutions, identify emerging issues, and outline future research directions, while also showing them how to apply the latest large-scale, high-performance computational methods.

4th International Conference, ICIRA 2011, Aachen, Germany, December 6-8, 2011, Proceedings Springer Science & Business Media

Computer Aided Geometric Design covers the proceedings of the First International Conference on Computer Aided Geometric Design, held at the University of Utah on March 18-21, 1974. This book is composed of 15 chapters and starts with reviews of the properties of surface patch equation and the use of computers in geometrical design. The next chapters deal with the principles of smooth interpolation over triangles and without twist constraints, as well as the graphical representation of surfaces over triangles and rectangles. These topics are followed by discussions of the B-spline curves and surfaces; mathematical and practical possibilities of UNISURF; nonlinear splines; and some piecewise polynomial alternatives to splines under tension.

Other chapters explore the smooth parametric surfaces, the space curve as a folded edge, and the interactive computer graphics application of the parametric bi-cubic surface to engineering design problems. The final chapters look into the three-dimensional human-machine communication and a class of local interpolating splines. This book will prove useful to design engineers.

Computer Publishers & Publications

Springer Science & Business Media
The two volume set LNAI 7101 and 7102 constitute the refereed proceedings of the 4th International Conference on Intelligent Robotics and Applications, ICIRA 2011, held in Aachen, Germany, in November 2011. The 122 revised full papers presented were thoroughly reviewed and selected from numerous submissions. They are organized in topical sections on progress in indoor UAV, robotics intelligence, industrial robots, rehabilitation robotics, mechanisms and their applications, multi robot systems, robot mechanism and design, parallel kinematics, parallel kinematics machines and parallel robotics, handling and manipulation, tangibility in human-machine interaction, navigation and localization of mobile robot, a body for the brain: embodied intelligence in bio-inspired robotics, intelligent visual systems, self-optimising production systems, computational intelligence, robot control systems, human-robot interaction, manipulators and applications, stability, dynamics and interpolation, evolutionary robotics, bio-inspired robotics, and image-processing applications.

Handbook of Research on Computational Science and Engineering: Theory and Practice Springer

This book presents state of the art research in theoretical computer science and related fields. In particular, the following areas are discussed: automata theory, formal languages and combinatorics of words, graph transformations, Petri nets, concurrency, as well as natural and molecular computing. The articles are written by leading researchers in these areas. The writers were originally invited to contribute to this book but then the normal refereeing procedure was applied as well. All of the articles deal with some issue that has been under vigorous study during recent years. Still, the topics range from very classical ones to issues raised only two or three years ago. Both survey articles and papers attacking specific research problems are included. The book highlights some key issues of theoretical computer science, as they seem to us now at the beginning of the new millennium. Being a comprehensive overview of some of the most active current research in theoretical computer science, it should be of definite interest for all researchers in the areas covered. The topics range from basic decidability and the notion of

information to graph grammars and graph transformations, and from trees and traces to aqueous algorithms, DNA encoding and self-assembly. Special effort has been given to lucid presentation. Therefore, the book should be of interest also for advanced students.

High Performance Computing and

Applications American Mathematical Soc.

Maintaining a balance between a theoretical and practical approach to this important subject, *Elements of Compiler Design* serves as an introduction to compiler writing for undergraduate students. From a theoretical viewpoint, it introduces rudimentary models, such as automata and grammars, that underlie compilation and its essential phases. Based on these models, the author details the concepts, methods, and techniques employed in compiler design in a clear and easy-to-follow way. From a practical point of view, the book describes how compilation techniques are implemented. In fact, throughout the text, a case study illustrates the design of a new programming language and the construction of its compiler. While discussing various compilation techniques, the author demonstrates their implementation through this case study. In addition, the book presents many detailed examples and computer programs to emphasize the applications of the compiler algorithms. After studying this self-contained textbook, students should understand the compilation process, be able to write a simple real compiler, and easily follow advanced books on the subject.