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Modeling, Simulation, and Optimization of Integrated Circuits Springer Science & Business Media

Imagine yourself as a military officer in a conflict zone trying to identify locations of weapons caches supporting road-side bomb attacks on your country ' s troops. Or imagine yourself as a public health expert trying to identify the location of contaminated water that is causing diarrheal diseases in a local population. Geospatial abduction is a new technique introduced by the authors that allows such problems to be solved. Geospatial Abduction provides the mathematics underlying geospatial abduction and the algorithms to solve them in practice; it has wide applicability and can be used by practitioners and researchers in many different fields. Real-world applications of geospatial abduction to military problems are included. Compelling examples drawn from other domains as diverse as criminology, epidemiology and archaeology are covered as well. This book also includes access to a dedicated website on geospatial abduction hosted by University of Maryland. Geospatial Abduction targets practitioners working in general AI, game theory, linear programming, data mining, machine learning, and more. Those working in the fields of computer science, mathematics, geoinformation, geological and biological science will also find this book valuable.

Distributed Computing and Networking Pearson Higher Ed

This book constitutes the refereed proceedings of the 12th International Conference on Distributed Computing and Networking, ICDCN 2011, held in Bangalore, India, during January 2-5, 2011. The 31 revised full papers and 3 revised short papers presented together with 3 invited lectures were carefully reviewed and selected from 140 submissions. The papers address all current issues in the field of distributed computing and networking. Being a leading forum for researchers and practitioners to exchange ideas and share best practices, ICDCN also serves as a forum for PhD students to share their research ideas and get quality feedback from the well-renowned experts in the field.

SIAM

The goal of the Encyclopedia of Optimization is to introduce the reader to a complete set of topics that show the spectrum of research, the richness of ideas, and the breadth of applications

that has come from this field. The second edition builds on the success of the former edition with more than 150 completely new entries, designed to ensure that the reference addresses recent areas where optimization theories and techniques have advanced. Particularly heavy attention resulted in health science and transportation, with entries such as "Algorithms for Genomics", "Optimization and Radiotherapy Treatment Design", and "Crew Scheduling" .

Computer Networking Problems and Solutions Cambridge University Press

When programmers list their favorite books, Jon Bentley's collection of programming pearls is commonly included among the classics. Just as natural pearls grow from grains of sand that irritate oysters, programming pearls have grown from real problems that have irritated real programmers. With origins beyond solid engineering, in the realm of insight and creativity, Bentley's pearls offer unique and clever solutions to those nagging problems. Illustrated by programs designed as much for fun as for instruction, the book is filled with lucid and witty descriptions of practical programming techniques and fundamental design principles. It is not at all surprising that Programming Pearls has been so highly valued by programmers at every level of experience. In this revision, the first in 14 years, Bentley has substantially updated his essays to reflect current programming methods and environments. In addition, there are three new essays on testing, debugging, and timing set representations string problems All the original programs have been rewritten, and an equal amount of new code has been generated. Implementations of all the programs, in C or C++, are now available on the Web. What remains the same in this new edition is Bentley's focus on the hard core of programming problems and his delivery of workable solutions to those problems. Whether you are new to Bentley's classic or are revisiting his work for some fresh insight, the book is sure to make your own list of favorites.

Proceedings of a Conference held at the Mathematisches Forschungsinstitut, Oberwolfach, November 25-December 1, 2001 Addison-Wesley Professional

The third edition of this handbook is designed to provide a broad coverage of the concepts, implementations, and applications in metaheuristics. The book ' s chapters serve as stand-alone presentations giving both the necessary underpinnings as well as practical guides for implementation. The nature of metaheuristics invites an analyst to modify basic methods in response to problem characteristics, past experiences, and personal preferences, and the chapters in this handbook are designed to facilitate this process as well. This new edition has been fully revised and features new chapters on swarm intelligence and automated design of metaheuristics from flexible algorithm frameworks. The authors who have contributed to this volume represent leading figures from the metaheuristic community and are responsible for pioneering contributions to the fields they write about. Their collective work has significantly enriched the field of optimization in general and combinatorial optimization in particular. Metaheuristics are solution methods that orchestrate an interaction between local improvement procedures and higher level strategies to create a process capable of escaping from local optima and performing a robust search of a solution space. In addition, many new and exciting developments and extensions have been observed in the last few years. Hybrids of metaheuristics with other optimization techniques, like branch-and-

bound, mathematical programming or constraint programming are also increasingly popular. On the front of applications, metaheuristics are now used to find high-quality solutions to an ever-growing number of complex, ill-defined real-world problems, in particular combinatorial ones. This handbook should continue to be a great reference for researchers, graduate students, as well as practitioners interested in metaheuristics.

Programming Challenges Addison-Wesley Professional

The third Conference on Mathematical Models and Numerical Simulation in Electronic Industry brought together researchers in mathematics, electrical engineering and scientists working in industry. The contributions to this volume try to bridge the gap between basic and applied mathematics, research in electrical engineering and the needs of industry.

Programming Algorithms Springer Science & Business Media

DISC, the International Symposium on Distributed Computing, is an annual forum for presentation of research on all aspects of distributed computing, including the theory, design, implementation and applications of distributed algorithms, systems and networks. The 22nd edition of DISC was held during September 22-24, 2008, in Arcachon, France. There were 101 submissions submitted to DISC this year and this volume contains 33 15-page-long regular papers selected by the Program Committee among these submissions. Every submitted paper was read and evaluated by Program Committee members assisted by external reviewers. The final decisions regarding acceptance or rejection of each paper were made during the electronic Program Committee meeting held during June 2008. Revised and expanded versions of a few best selected papers will be considered for publication in a special issue of the journal Distributed Computing. The Program Committee selected Robert Danek and Wojciech Golab as the recipients of this year's Best Paper Award for their paper "Closing the Complexity Gap Between FCFS Mutual Exclusion and Mutual Exclusion." The Program Committee selected Wojciech Wawrzyniak as the recipient of this year's Best Student Paper Award for the paper "Fast Distributed Approximations in Planar Graphs" coauthored with Andrzej Czygrinow and Michal Handl.

Algorithm Design Practice for Collegiate Programming Contests and Education "O'Reilly Media, Inc." Thirteen years have passed since the seminal book on knapsack problems by Martello and Toth appeared. On this occasion a former colleague exclaimed back in 1990: "How can you write 250 pages on the knapsack problem?" Indeed, the definition of the knapsack problem is easily understood even by a non-expert who will not suspect the presence of challenging research topics in this area at the first glance. However, in the last decade a large number of research publications contributed new results for the knapsack problem in all areas of interest such as exact algorithms, heuristics and approximation schemes. Moreover, the extension of the knapsack problem to higher dimensions both in the number of constraints and in the number of knapsacks, as well as the modification of the problem structure concerning the available item set and the objective function, leads to a number of interesting variations of practical relevance which were the subject of intensive research during the last few years. Hence, two years ago the idea arose to produce a new monograph covering not only the most recent developments of the standard knapsack problem, but also giving a comprehensive treatment of the whole knapsack family including the siblings such as the subset sum problem and the bounded and unbounded knapsack problem, and also more distant relatives such as multidimensional, multiple, multiple-choice and quadratic knapsack problems in dedicated chapters.

Wicked Problems, Righteous Solutions Springer Science & Business Media

A core or supplementary text for one-semester, freshman/sophomore-level introductory courses taken by

programming majors in Problem Solving for Programmers, Problem Solving for Applications, any Computer Language Course, or Introduction to Programming. Revised to reflect the most current issues in the programming industry, this widely adopted text emphasizes that problem solving is the same in all computer languages, regardless of syntax. Sprankle and Hubbard use a generic, non-language-specific approach to present the tools and concepts required when using any programming language to develop computer applications. Designed for students with little or no computer experience — but useful to programmers at any level — the text provides step-by-step progression and consistent in-depth coverage of topics, with detailed explanations and many illustrations. Instructor Supplements (see resources tab): Instructor Manual with Solutions and Test Bank Lecture Power Point Slides Go to: www.pearsoninternationaleditions.com/sprankle

Effective Teamwork, Practical Integration Springer

Algorithmic design, especially for hard problems, is more essential for success in solving them than any standard improvement of current computer technologies. Because of this, the design of algorithms for solving hard problems is the core of current algorithmic research from the theoretical point of view as well as from the practical point of view. There are many general text books on algorithmics, and several specialized books devoted to particular approaches such as local search, randomization, approximation algorithms, or heuristics. But there is no textbook that focuses on the design of algorithms for hard computing tasks, and that systematically explains, combines, and compares the main possibilities for attacking hard algorithmic problems. As this topic is fundamental for computer science, this book tries to close this gap. Another motivation, and probably the main reason for writing this book, is connected to education. The considered area has developed very dynamically in recent years and the research on this topic discovered several profound results, new concepts, and new methods. Some of the achieved contributions are so fundamental that one can speak about paradigms which should be included in the education of every computer science student. Unfortunately, this is very far from reality. This is because these paradigms are not sufficiently known in the computer science community, and so they are insufficiently communicated to students and practitioners.

33rd International Colloquium, ICALP 2006, Venice, Italy, July 10-14, 2006, Proceedings Cambridge University Press

This book can be used as an experiment and reference book for algorithm design courses, as well as a training manual for programming contests. It contains 247 problems selected from ACM-ICPC programming contests and other programming contests. There's detailed analysis for each problem. All problems, and test datum for most of problems will be provided online. The content will follow usual algorithms syllabus, and problem-solving strategies will be introduced in analyses and solutions to problem cases. For students in computer-related majors, contestants and programmers, this book can polish their programming and problem-solving skills with familiarity of algorithms and mathematics.

Different Perspectives on Information Systems Prentice Hall

Programming Challenges The Programming Contest Training Manual Springer Science & Business Media

47 Engineering Puzzles, Programming Problems, and Solutions Springer Science & Business Media

Providing an examination of the software development process, this book asserts that software development is guided by methods conceived in the framework of an older technology. It explores the history of software development by looking at the scientific foundations of computer technology, the perspectives of the designers, and the methods used.

Distributed Computing Oxford University Press on Demand

The two-volume set LNCS 4051 and LNCS 4052 constitutes the refereed proceedings of the 33rd International Colloquium on Automata, Languages and Programming, ICALP 2006, held in Venice, Italy, July 2006. In all, these volumes present more 100 papers and lectures. Volume I (4051) presents 61

revised full papers together with 1 invited lecture, focusing on algorithms, automata, complexity and games, on topics including graph theory, quantum computing, and more.

Problems and Solutions Programming Challenges
The Programming Contest Training Manual
Programming is the art of designing efficient algorithms that meet their specifications. There are two factors by which algorithms may be judged - their correctness and their performance. This text discusses the calculational style of programming where programs are derived from their specification by means of formula manipulation.

Problem Solving & Programming Concepts Intellect Books

This two-volume set LNAI 12748 and 12749 constitutes the refereed proceedings of the 22nd International Conference on Artificial Intelligence in Education, AIED 2021, held in Utrecht, The Netherlands, in June 2021.* The 40 full papers presented together with 76 short papers, 2 panels papers, 4 industry papers, 4 doctoral consortium, and 6 workshop papers were carefully reviewed and selected from 209 submissions. The conference provides opportunities for the cross-fertilization of approaches, techniques and ideas from the many fields that comprise AIED, including computer science, cognitive and learning sciences, education, game design, psychology, sociology, linguistics as well as many domain-specific areas. *The conference was held virtually due to the COVID-19 pandemic.

Nonsequential and Distributed Programming with Go Addison-Wesley Professional

M->CREATED

The Art of Multiprocessor Programming, Revised Reprint Springer Science & Business Media

The last decade has brought explosive growth in the technology for manufacturing integrated circuits. Integrated circuits with several hundred thousand transistors are now commonplace. This manufacturing capability, combined with the economic benefits of large electronic systems, is forcing a revolution in the design of these systems and providing a challenge to those people interested in integrated system design. Modern circuits are too complex for an individual to comprehend completely. Managing tremendous complexity and automating the design process have become crucial issues. Two groups are interested in dealing with complexity and in developing algorithms to automate the design process. One group is composed of practitioners in computer-aided design (CAD) who develop computer programs to aid the circuit-design process. The second group is made up of computer scientists and mathematicians who are interested in the design and analysis of efficient combinatorial algorithms. These two groups have developed separate bodies of literature and, until recently, have had relatively little interaction. An obstacle to bringing these two groups together is the lack of books that discuss issues of importance to both groups in the same context. There are many instances when a familiarity with the literature of the other group would be beneficial. Some practitioners could use known theoretical results to improve their "cut and try" heuristics. In other cases, theoreticians have published impractical or highly abstracted toy formulations, thinking that the latter are important for circuit layout.

12th International Conference, ICDCN 2011, Bangalore, India, January 2-5, 2011, Proceedings

Springer

This book is a unique collection of algorithmic problems : that involve, explicitly or implicitly, clearly defined procedures for solving these. The book includes some old classics, which have become a part of mathematics and computer science folklore. It also contains newer examples, some of which have been asked during programming interviews with top-notch technical companies as well as programming contests like ACM ICPC and TopCoder. The problems are challenging, well-motivated and accessible. Many of the questions are formulated in such a way that producing variants on them can be done at ease. Each chapter is self-contained, consisting of 30+ classical and well-known problems supplemented by creative approach and in-depth explanations with detailed solutions in pseudo-code. Some

illustrations include C++ implementations as well. This book is addressed both to programmers and instructors interested in developing algorithmic thinking, including people preparing for coding interviews as well as to people conducting such interviews with top technical companies.

Principles and Practice Springer Science & Business Media

This book constitutes the refereed proceedings of the 25th International Symposium on Distributed Computing, DISC 2011, held in Rome, Italy, in September 2011. The 31 revised full papers presented together with invited lectures and brief announcements were carefully reviewed and selected from 136 submissions. The papers are organized in topical sections on distributed graph algorithms; shared memory; brief announcements; fault-tolerance and security; paxos plus; wireless; network algorithms; aspects of locality; consensus; concurrency.