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***Motwani Randomized
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**Advanced Data Structures
presents a comprehensive look**

at the ideas, analysis, and implementation details of data structures as a specialized topic in applied algorithms. Data structures are how data is stored within a computer, and how one can go about

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searching for data within. This text examines efficient ways to search and update sets of numbers, intervals, or strings by various data structures, such as search trees, structures for sets of intervals

or piece-wise constant functions, orthogonal range search structures, heaps, union-find structures, dynamization and persistence of structures, structures for strings, and hash tables. This

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is the first volume to show data structures as a crucial algorithmic topic, rather than relegating them as trivial material used to illustrate object-oriented programming methodology, filling a void in

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the ever-increasing computer science market. Numerous code examples in C and more than 500 references make Advanced Data Structures an indispensable text. topic. Numerous code examples in C

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**and more than 500 references
make Advanced Data
Structures an indispensable
text.**

**Now in its second edition, this
book focuses on practical
algorithms for mining data**

from even the largest datasets.

Exact algorithms for dealing with geometric objects are complicated, hard to implement in practice, and slow. Over the last 20 years a

theory of geometric approximation algorithms has emerged. These algorithms tend to be simple, fast, and more robust than their exact counterparts. This book is the first to cover geometric

approximation algorithms in detail. In addition, more traditional computational geometry techniques that are widely used in developing such algorithms, like sampling, linear programming, etc., are

also surveyed. Other topics covered include approximate nearest-neighbor search, shape approximation, coresets, dimension reduction, and embeddings. The topics covered are relatively

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**independent and are
supplemented by exercises.
Close to 200 color figures are
included in the text to
illustrate proofs and ideas.
Get complete instructions for
manipulating, processing,**

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**cleaning, and crunching
datasets in Python. Updated
for Python 3.6, the second
edition of this hands-on guide
is packed with practical case
studies that show you how to
solve a broad set of data**

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**analysis problems effectively.
You'll learn the latest versions
of pandas, NumPy, IPython,
and Jupyter in the process.
Written by Wes McKinney, the
creator of the Python pandas
project, this book is a**

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practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and

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related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis

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tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and

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**summarize datasets Analyze
and manipulate regular and
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Learn how to solve real-world
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**The Computer Science of
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Introduction To Algorithms

Algorithms and Applications

**Randomized Algorithms and
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**Foundations of Data Science
Praise for the Third Edition
“Researchers of any kind of
extremal combinatorics or
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will welcome the new edition
of this book.” - MAA Reviews**

Maintaining a standard of excellence that establishes The Probabilistic Method as the leading reference on probabilistic methods in combinatorics, the Fourth Edition continues to feature a

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clear writing style, illustrative examples, and illuminating exercises. The new edition includes numerous updates to reflect the most recent developments and advances in discrete mathematics and the

connections to other areas in mathematics, theoretical computer science, and statistical physics.

Emphasizing the methodology and techniques that enable problem-solving, The

Probabilistic Method, Fourth Edition begins with a description of tools applied to probabilistic arguments, including basic techniques that use expectation and variance as well as the more

advanced applications of martingales and correlation inequalities. The authors explore where probabilistic techniques have been applied successfully and also examine topical coverage such as

discrepancy and random graphs, circuit complexity, computational geometry, and derandomization of randomized algorithms. Written by two well-known authorities in the field, the

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***Fourth Edition features:
Additional exercises
throughout with hints and
solutions to select problems in
an appendix to help readers
obtain a deeper understanding
of the best methods and***

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***techniques New coverage on
topics such as the Local
Lemma, Six Standard
Deviations result in
Discrepancy Theory, Property
B, and graph limits Updated
sections to reflect major***

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developments on the newest topics, discussions of the hypergraph container method, and many new references and improved results The Probabilistic Method, Fourth Edition is an ideal textbook for

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upper-undergraduate and graduate-level students majoring in mathematics, computer science, operations research, and statistics. The Fourth Edition is also an excellent reference for

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researchers and combinatorists who use probabilistic methods, discrete mathematics, and number theory. Noga Alon, PhD, is Baumritter Professor of Mathematics and Computer

Science at Tel Aviv University. He is a member of the Israel National Academy of Sciences and Academia Europaea. A coeditor of the journal Random Structures and Algorithms, Dr. Alon is the recipient of the

Polya Prize, The Gödel Prize, The Israel Prize, and the EMET Prize. Joel H. Spencer, PhD, is Professor of Mathematics and Computer Science at the Courant Institute of New York University. He is the cofounder

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***and coeditor of the journal
Random Structures and
Algorithms and is a Sloane
Foundation Fellow. Dr.
Spencer has written more than
200 published articles and is
the coauthor of Ramsey***

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***Theory, Second Edition, also
published by Wiley.***

***The first edition won the
award for Best 1990***

***Professional and Scholarly
Book in Computer Science and
Data Processing by the***

Association of American Publishers. There are books on algorithms that are rigorous but incomplete and others that cover masses of material but lack rigor. Introduction to Algorithms combines rigor and

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comprehensiveness. The book covers a broad range of algorithms in depth, yet makes their design and analysis accessible to all levels of readers. Each chapter is relatively self-contained and

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can be used as a unit of study. The algorithms are described in English and in a pseudocode designed to be readable by anyone who has done a little programming. The explanations have been kept

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elementary without sacrificing depth of coverage or mathematical rigor. The first edition became the standard reference for professionals and a widely used text in universities worldwide. The

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second edition features new chapters on the role of algorithms, probabilistic analysis and randomized algorithms, and linear programming, as well as extensive revisions to virtually

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every section of the book. In a subtle but important change, loop invariants are introduced early and used throughout the text to prove algorithm correctness. Without changing the mathematical and analytic

focus, the authors have moved much of the mathematical foundations material from Part I to an appendix and have included additional motivational material at the beginning.

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This newly expanded and updated second edition of the best-selling classic continues to take the "mystery" out of designing algorithms, and analyzing their efficacy and efficiency. Expanding on the

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first edition, the book now serves as the primary textbook of choice for algorithm design courses while maintaining its status as the premier practical reference guide to algorithms for programmers, researchers,

and students. The reader-friendly Algorithm Design Manual provides straightforward access to combinatorial algorithms technology, stressing design over analysis. The first part,

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Techniques, provides accessible instruction on methods for designing and analyzing computer algorithms. The second part, Resources, is intended for browsing and reference, and

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comprises the catalog of algorithmic resources, implementations and an extensive bibliography. NEW to the second edition: • Doubles the tutorial material and exercises over the first

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edition • Provides full online support for lecturers, and a completely updated and improved website component with lecture slides, audio and video • Contains a unique catalog identifying the 75

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algorithmic problems that arise most often in practice, leading the reader down the right path to solve them • Includes several NEW "war stories" relating experiences from real-world applications •

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***Provides up-to-date links
leading to the very best
algorithm implementations
available in C, C++, and Java
"This textbook is designed to
accompany a one- or two-
semester course for advanced***

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undergraduates or beginning graduate students in computer science and applied mathematics. - It gives an excellent introduction to the probabilistic techniques and paradigms used in the

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development of probabilistic algorithms and analyses. - It assumes only an elementary background in discrete mathematics and gives a rigorous yet accessible treatment of the material, with

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numerous examples and applications."--Jacket.

***Unlocking the Power of Data
One Thousand Exercises in
Probability***

***Algorithms to Live By
Data Wrangling with Pandas,***

***NumPy, and IPython
Mining of Massive Datasets
Randomized Algorithms***

This guide provides a wide-ranging selection of illuminating, informative and entertaining problems, together with their solution. Topics include modelling

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and many applications of probability theory.

For many applications a randomized algorithm is either the simplest algorithm available, or the fastest, or both. This tutorial presents the basic concepts in the design and

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analysis of randomized algorithms. The first part of the book presents tools from probability theory and probabilistic analysis that are recurrent in algorithmic applications. Algorithmic examples are given to illustrate

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the use of each tool in a concrete setting. In the second part of the book, each of the seven chapters focuses on one important area of application of randomized algorithms: data structures; geometric algorithms; graph algorithms; number theory;

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enumeration; parallel algorithms; and on-line algorithms. A comprehensive and representative selection of the algorithms in these areas is also given. This first book on the subject should prove invaluable as a reference for researchers

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and professional programmers, as well as for students.

The authors provide an introduction to quantum computing. Aimed at advanced undergraduate and beginning graduate students in these disciplines, this text is illustrated

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*with diagrams and exercises.
This new edition of the well
established text Scheduling -
Theory, Algorithms, and Systems
provides an up-to-date coverage
of important theoretical models in
the scheduling literature as well
as significant scheduling*

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problems that occur in the real world. It again includes supplementary material in the form of slide-shows from industry and movies that show implementations of scheduling systems. The main structure of the book as per previous edition

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consists of three parts. The first part focuses on deterministic scheduling and the related combinatorial problems. The second part covers probabilistic scheduling models; in this part it is assumed that processing times and other problem data are

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random and not known in advance. The third part deals with scheduling in practice; it covers heuristics that are popular with practitioners and discusses system design and implementation issues. All three parts of this new edition have

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*been revamped and streamlined.
The references have been made
completely up-to-date.
Theoreticians and practitioners
alike will find this book of interest.
Graduate students in operations
management, operations
research, industrial engineering,*

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and computer science will find the book an accessible and invaluable resource. Scheduling - Theory, Algorithms, and Systems will serve as an essential reference for professionals working on scheduling problems in manufacturing, services, and

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other environments. Reviews of third edition: This well-established text covers both the theory and practice of scheduling. The book begins with motivating examples and the penultimate chapter discusses some commercial scheduling systems and examples

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of their implementations."

(Mathematical Reviews, 2009)

Convex Optimization

Pearson New International Edition

Theory, Algorithms, and Systems

Probability and Computing

*Approximation Algorithms for NP-
hard Problems*

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Introdu Analysi Algori_p2

*INTRODUCTION TO ALGORITHMS,
DATA STRUCTURES AND FORMAL
LANGUAGES provides a concise,
straightforward, yet rigorous
introduction to the key ideas,
techniques, and results in three*

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areas essential to the education of every computer scientist. The textbook is closely based on the syllabus of the course COMPSCI220, which the authors and their colleagues have taught at the University of Auckland for

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several years. The book could also be used for self-study. Many exercises are provided, a substantial proportion of them with detailed solutions. Numerous figures aid understanding. To benefit from the book, the reader

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should have had prior exposure to programming in a structured language such as Java or C++, at a level similar to a typical two semester first-year university computer science sequence. However, no knowledge of any

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particular such language is necessary. Mathematical prerequisites are modest. Several appendices can be used to fill minor gaps in background knowledge. After finishing this book, students should be well

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prepared for more advanced study of the three topics, either for their own sake or as they arise in a multitude of application areas. A comprehensive introduction to the tools, techniques and applications of convex

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optimization.

Design of Modern Communication Networks focuses on methods and algorithms related to the design of communication networks, using optimization, graph theory, probability theory and simulation

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techniques. The book discusses the nature and complexity of the network design process, then introduces theoretical concepts, problems and solutions. It demonstrates the design of network topology and traditional

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loss networks, followed by uncontrolled packet networks, flow-controlled networks, and multiservice networks. Access network design is reviewed, and the book concludes by considering the design of survivable (reliable)

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networks and various reliability concepts. A toolbox of algorithms: The book provides practical advice on implementing algorithms, including the programming aspects of combinatorial algorithms. Extensive solved

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*problems and illustrations:
Wherever possible, different
solution methods are applied to
the same examples to compare
performance and verify precision
and applicability. Technology-
independent: Solutions are*

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applicable to a wide range of network design problems without relying on particular technologies. This is the first book to fully address the study of approximation algorithms as a tool for coping with intractable

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problems. With chapters contributed by leading researchers in the field, this book introduces unifying techniques in the analysis of approximation algorithms.

APPROXIMATION ALGORITHMS FOR NP-HARD PROBLEMS is intended

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for computer scientists and operations researchers interested in specific algorithm implementations, as well as design tools for algorithms. Among the techniques discussed: the use of linear programming, primal-dual

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*techniques in worst-case analysis,
semidefinite programming,
computational geometry
techniques, randomized
algorithms, average-case analysis,
probabilistically checkable proofs
and inapproximability, and the*

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Markov Chain Monte Carlo method. The text includes a variety of pedagogical features: definitions, exercises, open problems, glossary of problems, index, and notes on how best to use the book.

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Algorithm Design

Design and Analysis of Algorithms

*Introduction to Algorithms, third
edition*

Quantum Computation and

Quantum Information

Approximation Algorithms

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Data Streams

Despite growing interest, basic information on methods and models for mathematically analyzing algorithms has rarely been directly accessible to practitioners, researchers, or students. An Introduction to the

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Analysis of Algorithms, Second Edition, organizes and presents that knowledge, fully introducing primary techniques and results in the field. Robert Sedgewick and the late Philippe Flajolet have drawn from both classical mathematics and computer

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science, integrating discrete mathematics, elementary real analysis, combinatorics, algorithms, and data structures. They emphasize the mathematics needed to support scientific studies that can serve as the basis for predicting algorithm

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performance and for comparing different algorithms on the basis of performance. Techniques covered in the first half of the book include recurrences, generating functions, asymptotics, and analytic combinatorics. Structures studied in

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the second half of the book include permutations, trees, strings, tries, and mappings. Numerous examples are included throughout to illustrate applications to the analysis of algorithms that are playing a critical role in the evolution of our modern

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computational infrastructure.

Improvements and additions in this new edition include Upgraded figures and code An all-new chapter introducing analytic combinatorics Simplified derivations via analytic combinatorics throughout The book's

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thorough, self-contained coverage will help readers appreciate the field's challenges, prepare them for advanced results—covered in their monograph Analytic Combinatorics and in Donald Knuth's The Art of Computer Programming books—and provide the

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background they need to keep abreast of new research. "[Sedgewick and Flajolet] are not only worldwide leaders of the field, they also are masters of exposition. I am sure that every serious computer scientist will find this book rewarding in many

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*ways." —From the Foreword by
Donald E. Knuth
Michael Goodrich and Roberto
Tamassia, authors of the successful,
Data Structures and Algorithms in
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Engineering, a text designed to provide*

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a comprehensive introduction to the design, implementation and analysis of computer algorithms and data structures from a modern perspective. This book offers theoretical analysis techniques as well as algorithmic design patterns and experimental

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methods for the engineering of algorithms. Market: Computer Scientists; Programmers.

A rigorous introduction to geometric and topological inference, for anyone interested in a geometric approach to data science.

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Discrete optimization problems are everywhere, from traditional operations research planning (scheduling, facility location and network design); to computer science databases; to advertising issues in viral marketing. Yet most such problems are

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NP-hard; unless $P = NP$, there are no efficient algorithms to find optimal solutions. This book shows how to design approximation algorithms: efficient algorithms that find provably near-optimal solutions. The book is organized around central

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algorithmic techniques for designing approximation algorithms, including greedy and local search algorithms, dynamic programming, linear and semidefinite programming, and randomization. Each chapter in the first section is devoted to a single

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algorithmic technique applied to several different problems, with more sophisticated treatment in the second section. The book also covers methods for proving that optimization problems are hard to approximate. Designed as a textbook for graduate-level

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algorithm courses, it will also serve as a reference for researchers interested in the heuristic solution of discrete optimization problems.

Experimental and Efficient Algorithms

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*for Predictive Data Analytics, second
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*Algorithms, Worked Examples, and
Case Studies*

Methods and Applications

A Modern Approach

Scheduling

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In this 2002 book, the author develops the necessary background in probability theory and Markov chains then discusses important computing applications. Algorithms and Data Structures for External Memory describes several

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useful paradigms for the design and implementation of efficient external memory (EM) algorithms and data structures. The problem domains considered include sorting, permuting, FFT, scientific computing, computational

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geometry, graphs, databases, geographic information systems, and text and string processing. The second edition of a comprehensive introduction to machine learning approaches used in predictive data analytics,

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covering both theory and practice. Machine learning is often used to build predictive models by extracting patterns from large datasets. These models are used in predictive data analytics applications including price

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prediction, risk assessment, predicting customer behavior, and document classification. This introductory textbook offers a detailed and focused treatment of the most important machine learning approaches used in

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predictive data analytics, covering both theoretical concepts and practical applications. Technical and mathematical material is augmented with explanatory worked examples, and case studies illustrate the application of these

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models in the broader business context. This second edition covers recent developments in machine learning, especially in a new chapter on deep learning, and two new chapters that go beyond predictive analytics to cover

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unsupervised learning and reinforcement learning.

This book provides an introduction to the mathematical and algorithmic foundations of data science, including machine learning, high-dimensional geometry, and analysis

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of large networks. Topics include the counterintuitive nature of data in high dimensions, important linear algebraic techniques such as singular value decomposition, the theory of random walks and Markov chains, the fundamentals of and

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important algorithms for machine learning, algorithms and analysis for clustering, probabilistic models for large networks, representation learning including topic modelling and non-negative matrix factorization, wavelets and

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compressed sensing. Important probabilistic techniques are developed including the law of large numbers, tail inequalities, analysis of random projections, generalization guarantees in machine learning, and moment

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methods for analysis of phase transitions in large random graphs. Additionally, important structural and complexity measures are discussed such as matrix norms and VC-dimension. This book is suitable for both undergraduate and

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graduate courses in the design and analysis of algorithms for data.

4th International Workshop, WEA
2005, Santorini Island, Greece,
May 10-13, 2005, Proceedings
A Contemporary Perspective
The Design of Approximation

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Algorithms

The Algorithm Design Manual

Algorithms

Computational Complexity

The latest edition of the essential text and professional reference, with substantial new material on

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such topics as vEB trees, multithreaded algorithms, dynamic programming, and edge-based flow. Some books on algorithms are rigorous but incomplete; others cover masses of material but lack rigor. Introduction to

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Algorithms uniquely combines rigor and comprehensiveness. The book covers a broad range of algorithms in depth, yet makes their design and analysis accessible to all levels of readers. Each chapter is relatively self-

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contained and can be used as a unit of study. The algorithms are described in English and in a pseudocode designed to be readable by anyone who has done a little programming. The explanations have been kept

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elementary without sacrificing depth of coverage or mathematical rigor. The first edition became a widely used text in universities worldwide as well as the standard reference for professionals. The second edition

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featured new chapters on the role of algorithms, probabilistic analysis and randomized algorithms, and linear programming. The third edition has been revised and updated throughout. It includes two

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completely new chapters, on van Emde Boas trees and multithreaded algorithms, substantial additions to the chapter on recurrence (now called “Divide-and-Conquer”), and an appendix on matrices. It features

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improved treatment of dynamic programming and greedy algorithms and a new notion of edge-based flow in the material on flow networks. Many exercises and problems have been added for this edition. The international

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paperback edition is no longer available; the hardcover is available worldwide.

This classic book on formal languages, automata theory, and computational complexity has been updated to present

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theoretical concepts in a concise and straightforward manner with the increase of hands-on, practical applications. This new edition comes with Gradiance, an online assessment tool developed for computer science. Please note,

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Covering the basic techniques used in the latest research work, the author consolidates progress made so far, including some very

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recent and promising results, and conveys the beauty and excitement of work in the field. He gives clear, lucid explanations of key results and ideas, with intuitive proofs, and provides critical examples and numerous

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illustrations to help elucidate the algorithms. Many of the results presented have been simplified and new insights provided. Of interest to theoretical computer scientists, operations researchers, and discrete mathematicians.

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Problem solving is an essential part of every scientific discipline. It has two components: (1) problem identification and formulation, and (2) solution of the formulated problem. One can solve a problem on its own using ad hoc techniques

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or follow those techniques that have produced efficient solutions to similar problems. This requires the understanding of various algorithm design techniques, how and when to use them to formulate solutions and the

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context appropriate for each of them. This book advocates the study of algorithm design techniques by presenting most of the useful algorithm design techniques and illustrating them through numerous examples.

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Contents: Basic Concepts and
Introduction to Algorithms:Basic
Concepts in Algorithmic
AnalysisMathematical
PreliminariesData StructuresHeaps
and the Disjoint Sets Data
StructuresTechniques Based on

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Recursion: Induction
Divide and Conquer
Dynamic Programming
First-Cut Techniques:
The Greedy Approach
Graph Traversal
Complexity of Problems:
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ProblemsIntroduction to
Computational ComplexityLower
BoundsCoping with
Hardness:BacktrackingRandomize
d AlgorithmsApproximation
AlgorithmsIterative Improvement
for Domain-Specific

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Problems: Network

Flow Matching Techniques in
Computational

Geometry: Geometric

Sweeping Voronoi Diagrams

Readership: Senior

undergraduates, graduate

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students and professionals in
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Finite Markov Chains and
Algorithmic Applications
An Introduction to the Analysis of
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Notes on Randomized Algorithms
An Introduction to Quantum
Computing
Python for Data Analysis
New and classical results
in computational
complexity, including

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interactive proofs, PCP,
derandomization, and
quantum computation. Ideal
for graduate students.
First-ever comprehensive
introduction to the major
new subject of quantum

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computing and quantum information.

In the data stream scenario, input arrives very rapidly and there is limited memory to store the input. Algorithms have

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to work with one or few passes over the data, space less than linear in the input size or time significantly less than the input size. In the past few years, a new

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theory has emerged for reasoning about algorithms that work within these constraints on space, time, and number of passes. Some of the methods rely on metric

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embeddings, pseudo-random
computations, sparse
approximation theory and
communication complexity.
The applications for this
scenario include IP
network traffic analysis,

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mining text message
streams and processing
massive data sets in
general. Researchers in
Theoretical Computer
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Networking and Computer

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Systems are working on the data stream challenges. Our world is being revolutionized by data-driven methods: access to large amounts of data has generated new insights and

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opened exciting new opportunities in commerce, science, and computing applications. Processing the enormous quantities of data necessary for these advances requires large

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clusters, making distributed computing paradigms more crucial than ever. MapReduce is a programming model for expressing distributed computations on massive

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datasets and an execution framework for large-scale data processing on clusters of commodity servers. The programming model provides an easy-to-understand abstraction for

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designing scalable algorithms, while the execution framework transparently handles many system-level details, ranging from scheduling to synchronization to fault

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tolerance. This book focuses on MapReduce algorithm design, with an emphasis on text processing algorithms common in natural language processing, information

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retrieval, and machine learning. We introduce the notion of MapReduce design patterns, which represent general reusable solutions to commonly occurring problems across a variety

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of problem domains. This book not only intends to help the reader "think in MapReduce", but also discusses limitations of the programming model as well. This volume is a

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printed version of a work
that appears in the
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by page number Statistics: Unlocking the Power of Data, 2nd Edition continues to utilize these intuitive methods like randomization and bootstrap intervals to introduce the fundamental idea of statistical inference. These methods are brought to life through authentically relevant

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examples, enabled through easy to use statistical software, and are accessible at very early stages of a course. The program includes the more traditional methods like t-tests, chi-square tests, etc. but only after students have developed a strong intuitive understanding of inference

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through randomization methods. The focus throughout is on data analysis and the primary goal is to enable students to effectively collect data, analyze data, and interpret conclusions drawn from data. The program is driven by real data and real applications.

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A fascinating exploration of how insights from computer algorithms can be applied to our everyday lives, helping to solve common decision-making problems and illuminate the workings of the human mind All our lives are constrained by limited space and time, limits that give rise to a

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particular set of problems. What should we do, or leave undone, in a day or a lifetime? How much messiness should we accept? What balance of new activities and familiar favorites is the most fulfilling? These may seem like uniquely human quandaries, but they are not:

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computers, too, face the same constraints, so computer scientists have been grappling with their version of such issues for decades. And the solutions they've found have much to teach us. In a dazzlingly interdisciplinary work, acclaimed author Brian Christian and cognitive

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scientist Tom Griffiths show how the algorithms used by computers can also untangle very human questions. They explain how to have better hunches and when to leave things to chance, how to deal with overwhelming choices and how best to connect with others. From finding a

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spouse to finding a parking spot, from organizing one's inbox to understanding the workings of memory, *Algorithms to Live By* transforms the wisdom of computer science into strategies for human living.

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***For many applications a
randomized algorithm is either
the simplest algorithm available,***

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or the fastest, or both. This tutorial presents the basic concepts in the design and analysis of randomized algorithms. The first part of the book presents tools from probability theory and

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probabilistic analysis that are recurrent in algorithmic applications. Algorithmic examples are given to illustrate the use of each tool in a concrete setting. In the second part of the book, each of the seven chapters

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focuses on one important area of application of randomized algorithms: data structures; geometric algorithms; graph algorithms; number theory; enumeration; parallel algorithms; and on-line algorithms. A

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comprehensive and representative selection of the algorithms in these areas is also given. This book should prove invaluable as a reference for researchers and professional programmers, as well as for

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students.

This book constitutes the refereed proceedings of the 4th International Workshop on Experimental and Efficient Algorithms, WEA 2005, held in Santorini Island, Greece in May

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2005. The 47 revised full papers and 7 revised short papers presented together with extended abstracts of 3 invited talks were carefully reviewed and selected from 176 submissions. The book is devoted to the

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design, analysis, implementation, experimental evaluation, and engineering of efficient algorithms. Among the application areas addressed are most fields applying advanced algorithmic techniques, such as

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***combinatorial optimization,
approximation, graph theory,
discrete mathematics,
scheduling, searching, sorting,
string matching, coding,
networking, data mining, data
analysis, etc.***

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***Focuses on the interplay
between algorithm design and
the underlying computational
models.***