
Douglas West Graph Theory

Introduction to Graph Neural Networks
Introduction to Graph Theory
Combinatorial Optimization
Introduction to Graph Theory
Dots and Lines
Schaum's Outline of Graph Theory: Including Hundreds of Solved Problems
A First Course in Graph Theory
Combinatorial Problems and Exercises
When Topology Meets Chemistry
Graph Theory
Graph Coloring Problems
Strongly Regular Graphs
Introduction to Graph Theory
Combinatorial Mathematics
Graphs and Matrices
Graph Theory with Applications
Basic Graph Theory
A Walk Through Combinatorics
National Security Policy Proceedings: Spring 2010
Graphs and Order
Domination in Graphs
50 years of Combinatorics, Graph Theory, and Computing
Graph Theory with Applications
A Course in Combinatorics
Mathematical Thinking
Random Graphs
Algebra
Graph Theory
Modern Graph Theory
Introduction to Graph Theory
Fractional Graph Theory
The Fascinating World of Graph Theory
A Textbook of Graph Theory
Pearls in Graph Theory
Graph Theory with Applications to Engineering and Computer Science
Graphs, Algorithms, and Optimization, Second Edition
Combinatorics And Graph Theory (As Per U.P.T.U. Syllabus)
Graph Theory

Topics in Graph Theory
Algebraic Graph Theory

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VALENTINA MILES

Introduction to Graph Neural Networks World Scientific Publishing Company

This monograph on strongly regular graphs is an invaluable reference for anybody working in algebraic combinatorics.

Introduction to Graph Theory Princeton University Press

From specialists in the field, you will learn about interesting connections and recent developments in the field of graph theory by looking in particular at Cartesian products—arguably the most important of the four standard graph products. Many new results in this area appear for the first time in print in this book. Written in an accessible way,

Combinatorial Optimization Cambridge University Press

The aim of this book is to introduce a range of combinatorial methods for those who want to apply these methods in the solution of practical and theoretical problems. Various tricks and techniques are taught by means of exercises. Hints are given in a separate section and a third section contains all solutions in detail. A dictionary section gives definitions of the combinatorial notions occurring in the book. *Combinatorial Problems and Exercises* was first published in 1979. This revised edition has the same basic structure but has been brought up to date with a series of exercises on random walks on graphs and their relations to eigenvalues, expansion properties and electrical resistance. In various chapters the author found lines of thought that have been extended in a natural and significant way in recent years. About 60 new exercises (more counting sub-problems) have been added and several solutions have been simplified.

Introduction to Graph Theory Springer Science & Business Media

Graphs are useful data structures in complex real-life applications such as modeling physical systems, learning molecular fingerprints, controlling traffic networks, and recommending friends in social networks. However, these tasks require dealing with non-Euclidean graph data that contains rich relational information between elements and cannot be well handled by traditional deep learning models (e.g., convolutional neural networks (CNNs) or recurrent neural networks (RNNs)). Nodes in graphs usually contain useful feature information that cannot be well addressed in most unsupervised representation learning methods (e.g., network embedding methods). Graph neural networks (GNNs) are proposed to combine the feature information and the graph structure to learn better representations on graphs via feature propagation and aggregation. Due to its convincing performance and high interpretability, GNN has recently become a widely applied graph analysis tool. This book provides a comprehensive introduction to the basic concepts, models, and applications of graph neural networks. It starts with the introduction of the vanilla GNN model. Then several variants of the vanilla model are introduced such as graph convolutional networks, graph recurrent networks, graph attention networks, graph residual networks, and several general frameworks. Variants for different graph types and advanced training methods are also included. As

for the applications of GNNs, the book categorizes them into structural, non-structural, and other scenarios, and then it introduces several typical models on solving these tasks. Finally, the closing chapters provide GNN open resources and the outlook of several future directions.

Dots and Lines Cambridge University Press

Economic applications of graphs and equations, differentiation rules for exponentiation of exponentials ...

Schaum's Outline of Graph Theory: Including Hundreds of Solved Problems John Wiley & Sons

This undergraduate textbook provides an introduction to graph theory, which has numerous applications in modeling problems in science and technology, and has become a vital component to computer science, computer science and engineering, and mathematics curricula of universities all over the world. The author follows a methodical and easy to understand approach. Beginning with the historical background, motivation and applications of graph theory, the author first explains basic graph theoretic terminologies. From this firm foundation, the author goes on to present paths, cycles, connectivity, trees, matchings, coverings, planar graphs, graph coloring and digraphs as well as some special classes of graphs together with some research topics for advanced study. Filled with exercises and illustrations, *Basic Graph Theory* is a valuable resource for any undergraduate student to understand and gain confidence in graph theory and its applications to scientific research, algorithms and problem solving.

A First Course in Graph Theory Pearson

This standard textbook of modern graph theory, now in its fifth edition, combines the authority of a classic with the engaging freshness of style that is the hallmark of active mathematics. It covers the core material of the subject with concise yet reliably complete proofs, while offering glimpses of more advanced methods in each field by one or two deeper results, again with proofs given in full detail. The book can be used as a reliable text for an introductory course, as a graduate text, and for self-study. From the reviews: "This outstanding book cannot be substituted with any other book on the present textbook market. It has every chance of becoming the standard textbook for graph theory." *Acta Scientiarum Mathematicarum* "Deep, clear, wonderful. This is a serious book about the heart of graph theory. It has depth and integrity." *Persi Diaconis & Ron Graham, SIAM Review* "The book has received a very enthusiastic reception, which it amply deserves. A masterly elucidation of modern graph theory." *Bulletin of the Institute of Combinatorics and its Applications* "Succeeds dramatically ... a hell of a good book." *MAA Reviews* "A highlight of the book is what is by far the best account in print of the Seymour-Robertson theory of graph minors." *Mathematika* " ... like listening to someone explain mathematics." *Bulletin of the AMS*

Combinatorial Problems and Exercises Courier Corporation

Graph theory is an area in discrete mathematics which studies configurations (called graphs) involving a set of vertices interconnected by edges. This book is intended as a general introduction to graph theory and, in particular, as a resource book for junior college students and teachers

reading and teaching the subject at H3 Level in the new Singapore mathematics curriculum for junior college. The book builds on the verity that graph theory at this level is a subject that lends itself well to the development of mathematical reasoning and proof.

When Topology Meets Chemistry London : Macmillan Press

Over 1500 problems are used to illustrate concepts, related to different topics, and introduce applications. Over 1000 exercises in the text with many different types of questions posed. Precise mathematical language is used without excessive formalism and abstraction. Care has been taken to balance the mix of notation and words in mathematical statements. Problem sets are stated clearly and unambiguously, and all are carefully graded for various levels of difficulty. This text has been carefully designed for flexible use.

Graph Theory Springer Science & Business Media

Stimulating and accessible, this undergraduate-level text covers basic graph theory, colorings of graphs, circuits and cycles, labeling graphs, drawings of graphs, measurements of closeness to planarity, graphs on surfaces, and applications and algorithms. 1994 edition.

Graph Coloring Problems Springer Science & Business Media

Written by two prominent figures in the field, this comprehensive text provides a remarkably student-friendly approach. Its sound yet accessible treatment emphasizes the history of graph theory and offers unique examples and lucid proofs. 2004 edition.

Strongly Regular Graphs Springer

Flexibly designed for CS students needing math review. Also covers some advanced, cutting edge topics (running 120 pages and intended for grad students) in the last chapter (8). This text fits senior year or intro. grad course for CS and math majors.

Introduction to Graph Theory Courier Corporation

For one/two-term courses in Transition to Advanced Mathematics or Introduction to Proofs. Also suitable for courses in Analysis or Discrete Math. This title is part of the Pearson Modern Classics series. Pearson Modern Classics are acclaimed titles at a value price. Please visit www.pearsonhighered.com/math-classics-series for a complete list of titles. This text is designed to prepare students thoroughly in the logical thinking skills necessary to understand and communicate fundamental ideas and proofs in mathematics—skills vital for success throughout the upperclass mathematics curriculum. The text offers both discrete and continuous mathematics, allowing instructors to emphasize one or to present the fundamentals of both. It begins by discussing mathematical language and proof techniques (including induction), applies them to easily-understood questions in elementary number theory and counting, and then develops additional techniques of proof via important topics in discrete and continuous mathematics. The stimulating exercises are acclaimed for their exceptional quality.

Combinatorial Mathematics CRC Press

This is the most readable and thorough graduate textbook and reference for combinatorics, covering enumeration, graphs, sets, and methods.

Graphs and Matrices McGraw Hill Professional

The history, formulas, and most famous puzzles of graph theory Graph theory goes back several centuries and revolves around the study of graphs—mathematical structures showing relations

between objects. With applications in biology, computer science, transportation science, and other areas, graph theory encompasses some of the most beautiful formulas in mathematics—and some of its most famous problems. The Fascinating World of Graph Theory explores the questions and puzzles that have been studied, and often solved, through graph theory. This book looks at graph theory's development and the vibrant individuals responsible for the field's growth. Introducing fundamental concepts, the authors explore a diverse plethora of classic problems such as the Lights Out Puzzle, and each chapter contains math exercises for readers to savor. An eye-opening journey into the world of graphs, The Fascinating World of Graph Theory offers exciting problem-solving possibilities for mathematics and beyond.

Graph Theory with Applications McGraw-Hill Science, Engineering & Mathematics

Finally a self-contained, one volume, graduate-level algebra text that is readable by the average graduate student and flexible enough to accommodate a wide variety of instructors and course contents. The guiding principle throughout is that the material should be presented as general as possible, consistent with good pedagogy. Therefore it stresses clarity rather than brevity and contains an extraordinarily large number of illustrative exercises.

Basic Graph Theory Springer Nature

For junior- to senior-level courses in Graph Theory taken by majors in Mathematics, Computer Science, or Engineering or for beginning-level graduate courses. Once considered an "unimportant" branch of topology, graph theory has come into its own through many important contributions to a wide range of fields -- and is now one of the fastest-growing areas in discrete mathematics and computer science. This new text introduces basic concepts, definitions, theorems, and examples from graph theory. The authors present a collection of interesting results from mathematics that involve key concepts and proof techniques; cover design and analysis of computer algorithms for solving problems in graph theory; and discuss applications of graph theory to the sciences. It is mathematically rigorous, but also practical, intuitive, and algorithmic.

A Walk Through Combinatorics Elsevier

This is the second edition of a popular book on combinatorics, a subject dealing with ways of arranging and distributing objects, and which involves ideas from geometry, algebra and analysis. The breadth of the theory is matched by that of its applications, which include topics as diverse as codes, circuit design and algorithm complexity. It has thus become essential for workers in many scientific fields to have some familiarity with the subject. The authors have tried to be as comprehensive as possible, dealing in a unified manner with, for example, graph theory, extremal problems, designs, colorings and codes. The depth and breadth of the coverage make the book a unique guide to the whole of the subject. The book is ideal for courses on combinatorial mathematics at the advanced undergraduate or beginning graduate level. Working mathematicians and scientists will also find it a valuable introduction and reference.

National Security Policy Proceedings: Spring 2010 New Age International

This new edition illustrates the power of linear algebra in the study of graphs. The emphasis on matrix techniques is greater than in other texts on algebraic graph theory. Important matrices associated with graphs (for example, incidence, adjacency and Laplacian matrices) are treated in detail. Presenting a useful overview of selected topics in algebraic graph theory, early chapters of

the text focus on regular graphs, algebraic connectivity, the distance matrix of a tree, and its generalized version for arbitrary graphs, known as the resistance matrix. Coverage of later topics include Laplacian eigenvalues of threshold graphs, the positive definite completion problem and matrix games based on a graph. Such an extensive coverage of the subject area provides a welcome prompt for further exploration. The inclusion of exercises enables practical learning throughout the book. In the new edition, a new chapter is added on the line graph of a tree, while some results in Chapter 6 on Perron-Frobenius theory are reorganized. Whilst this book will be

invaluable to students and researchers in graph theory and combinatorial matrix theory, it will also benefit readers in the sciences and engineering.

Graphs and Order Springer

In its second edition, expanded with new chapters on domination in graphs and on the spectral properties of graphs, this book offers a solid background in the basics of graph theory. Introduces such topics as Dirac's theorem on k -connected graphs and more.