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	Autore	Korte Bernhard
	Titolo	Combinatorial Optimization [[electronic resource]] : Theory and Algorithms / / by Bernhard Korte, Jens Vygen
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2018
	ISBN	3-662-56039-9
	Edizione	[6th ed. 2018.]
	Descrizione fisica	1 online resource (XXI, 698 p. 78 illus.)
	Collana	Algorithms and Combinatorics, , 0937-5511 ; ; 21
	Disciplina	519.64
	Soggetti	Combinatorics
		Calculus of variations
		Computer science—Mathematics
		Operations research
		Decision making
		Calculus of Variations and Optimal Control; Optimization
		Mathematics of Computing
		Operations Research/Decision Theory
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	1 Introduction -- 2 Graphs -- 3 Linear Programming -- 4 Linear Programming Algorithms -- 5 Integer Programming -- 6 Spanning Trees and Arborescences -- 7 Shortest Paths -- 8 Network Flows -- 9 Minimum Cost Flows -- 10 Maximum Matchings -- 11 Weighted Matching -- 12 b-Matchings and T -Joins -- 13 Matroids -- 14 Generalizations of Matroids -- 15 NP-Completeness -- 16 Approximation Algorithms -- 17 The Knapsack Problem -- 18 Bin-Packing -- 19 Multicommodity Flows and Edge-Disjoint Paths -- 20 Network Design Problems -- 21 The Traveling Salesman Problem -- 22 Facility Location -- Indices.
	Sommario/riassunto	This comprehensive textbook on combinatorial optimization places special emphasis on theoretical results and algorithms with provably good performance, in contrast to heuristics. It is based on numerous courses on combinatorial optimization and specialized topics, mostly at graduate level. This book reviews the fundamentals, covers the classical

topics (paths, flows, matching, matroids, NP-completeness, approximation algorithms) in detail, and proceeds to advanced and recent topics, some of which have not appeared in a textbook before. Throughout, it contains complete but concise proofs, and also provides numerous exercises and references. This sixth edition has again been updated, revised, and significantly extended. Among other additions, there are new sections on shallow-light trees, submodular function maximization, smoothed analysis of the knapsack problem, the (ln 4+)-approximation for Steiner trees, and the VPN theorem. Thus, this book continues to represent the state of the art of combinatorial optimization. From the reviews of the previous editions: "This book on combinatorial optimization is a beautiful example of the ideal textbook." Operations Research Letters 33 (2005) "This is the 5th edition of one of the standard books in combinatorial optimization. It is an excellent book covering everything from the basics up to the most advanced topics (graduate level and current research). It provides theoretical results, underlying ideas, algorithms and the needed basics in graph theory in a very nice, comprehensive way. The book also provides insights into and pointers to adjacent areas that could not be covered in full length for the interested reader. "Combinatorial Optimization" can easily serve as an (almost) complete reference for current research and is state-of-the-art. […]" Zentralblatt MATH 1237.90001 .