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Titolo	Guide to Graph Algorithms : Sequential, Parallel and Distributed / / by K Erciyes
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Descrizione fisica	1 online resource (XVIII, 471 p. 247 illus., 1 illus. in color.)
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Note generali	Includes index.
Nota di contenuto	Introduction -- Part I: Fundamentals -- Introduction to Graphs -- Graph Algorithms -- Parallel Graph Algorithms -- Distributed Graph Algorithms -- Part II: Basic Graph Algorithms -- Trees and Graph Traversals -- Weighted Graphs -- Connectivity -- Matching -- Independence, Domination and Vertex Cover -- Coloring -- Part III: Advanced Topics -- Algebraic and Dynamic Graph Algorithms -- Analysis of Large Graphs -- Complex Networks -- Epilogue -- Appendix A: Pseudocode Conventions -- Appendix B: Linear Algebra Review.
Sommario/riassunto	This clearly structured textbook/reference presents a detailed and comprehensive review of the fundamental principles of sequential graph algorithms, approaches for NP-hard graph problems, and approximation algorithms and heuristics for such problems. The work also provides a comparative analysis of sequential, parallel and distributed graph algorithms – including algorithms for big data – and an investigation into the conversion principles between the three algorithmic methods. Topics and features: Presents a comprehensive analysis of sequential graph algorithms Offers a unifying view by examining the same graph problem from each of the three paradigms of sequential, parallel and distributed algorithms Describes methods

for the conversion between sequential, parallel and distributed graph algorithms Surveys methods for the analysis of large graphs and complex network applications Includes full implementation details for the problems presented throughout the text Provides additional supporting material at an accompanying website This practical guide to the design and analysis of graph algorithms is ideal for advanced and graduate students of computer science, electrical and electronic engineering, and bioinformatics. The material covered will also be of value to any researcher familiar with the basics of discrete mathematics, graph theory and algorithms. Dr. K. Erciyes is an emeritus professor of computer engineering at Ege University, Turkey. His other publications include the Springer titles Distributed Graph Algorithms for Computer Networks and Distributed and Sequential Algorithms for Bioinformatics.