

Guide to Graph Algorithms

Sequential, Parallel and Distributed

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, approximation algorithms and heuristics for such problems and implementation of advanced graph structures in machine learning. 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.

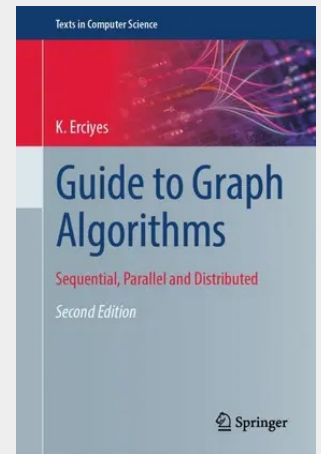
Topics and features:

- 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
- Surveys advanced graph structures used in artificial intelligence with code examples
- Reviews graph machine-intelligence methods

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 and machine learning.

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