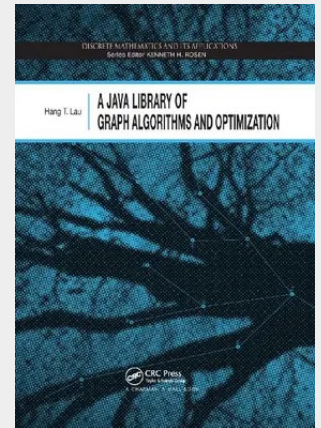


A Java Library of Graph Algorithms and Optimization

Because of its portability and platform-independence, Java is the ideal computer programming language to use when working on graph algorithms and other mathematical programming problems. Collecting some of the most popular graph algorithms and optimization procedures, A Java Library of Graph Algorithms and Optimization provides the source code for a library of Java programs that can be used to solve problems in graph theory and combinatorial optimization. Self-contained and largely independent, each topic starts with a problem description and an outline of the solution procedure, followed by its parameter list specification, source code, and a test example that illustrates the usage of the code. The book begins with a chapter on random graph generation that examines bipartite, regular, connected, Hamilton, and isomorphic graphs as well as spanning, labeled, and unlabeled rooted trees. It then discusses connectivity procedures, followed by a paths and cycles chapter that contains the Chinese postman and traveling salesman problems, Euler and Hamilton cycles, and shortest paths. The author proceeds to describe two test procedures involving planarity and graph isomorphism. Subsequent chapters deal with graph coloring, graph matching, network flow, and packing and covering, including the assignment, bottleneck assignment, quadratic assignment, multiple knapsack, set covering, and set partitioning problems. The final chapters explore linear, integer, and quadratic programming. The appendices provide references that offer further details of the algorithms and include the definitions of many graph theory terms used in the book.

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