Gabriel Valiente

Algorithms on Trees and Graphs

- **Algorithms are first presented on an intuitive basis, followed by a detailed exposition in a literate programming style**
- **Correctness proofs are given, together with a worst-case analysis of the algorithms**
- **Full C++ implementation of all the algorithms using the LEDA library**
- **Interactive demonstration including animations**
- **An extensive chapter is devoted to the algorithmic techniques used in the book**

Graph algorithms is a well-established subject in mathematics and computer science. Beyond classical application fields, like approximation, combinatorial optimization, graphics, and operations research, graph algorithms have recently attracted increased attention from computational molecular biology and computational chemistry. Centered around the fundamental issue of graph isomorphism, this text goes beyond classical graph problems of shortest paths, spanning trees, flows in networks, and matchings in bipartite graphs. Advanced algorithmic results and techniques of practical relevance are presented in a coherent and consolidated way. This book introduces graph algorithms on an intuitive basis followed by a detailed exposition in a literate programming style, with correctness proofs as well as worst-case analyses. Furthermore, full C++ implementations of all algorithms presented are given using the LEDA library of efficient data structures and algorithms. Numerous illustrations, examples, and exercises, and a comprehensive bibliography support students and professionals in using the book as a text and source of reference

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