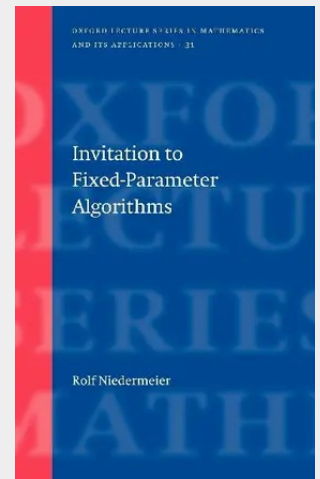


Invitation to Fixed Parameter Algorithms

This research-level text is an application-oriented introduction to the growing and highly topical area of the development and analysis of efficient fixed-parameter algorithms for optimally solving computationally hard combinatorial problems. The book is divided into three parts: a broad introduction that provides the general philosophy and motivation; followed by coverage of algorithmic methods developed over the years in fixed-parameter algorithmics forming the core of the book; and a discussion of the essentials from parameterized hardness theory with a focus on $W[1]$ -hardness which parallels NP-hardness, then stating some relations to polynomial-time approximation algorithms, and finishing up with a list of selected case studies to show the wide range of applicability of the presented methodology. Aimed at graduate and research mathematicians, programmers, algorithm designers, and computer scientists, the book introduces the basic techniques and results and provides a fresh view on this highly innovative field of algorithmic research.

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190,70 €

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Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780198566076

Medium: Buch

ISBN: 978-0-19-856607-6

Verlag: OUP Oxford

Erscheinungstermin: 02.02.2006

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2006

Produktform: Gebunden

Gewicht: 640 g

Seiten: 312

Format (B x H): 161 x 240 mm

