

1. Record Nr.	UNINA9910299766703321
Titolo	Optimized Packings with Applications // edited by Giorgio Fasano, János D. Pintér
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-18899-2
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (334 p.)
Collana	Springer Optimization and Its Applications, , 1931-6828 ; ; 105
Disciplina	621.757
Soggetti	Operations research Management science Mathematical optimization Algorithms Mathematical models Operations Research, Management Science Continuous Optimization Mathematical Modeling and Industrial Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Using a Bin Packing Approach for Stowing Hazardous Containers into Containerships -- Dynamic Packing with Side Constraints for Datacenter Resource Management -- Packing Optimization of Free-Form Objects in Engineering Design -- A Modeling-Based Approach for Non-Standard Packing Problems -- CAST: A Successful Project in Support of the International Space Station Logistics -- Cutting and Packing Problems with Placement Constraints -- A Container Loading Problem MILP-based Heuristics Solved by CPLEX:An Experimental Analysis -- Automatic Design of Optimal LED Street Lights -- Approximate Packing: Integer Programming Models, Valid Inequalities and Nesting -- Exploiting Packing Components in General-Purpose Integer Programming Solvers -- Robust Designs for Circle Coverings of a Square -- Batching-based Approaches for Optimized Packing of Jobs in the Spatial Scheduling Problem -- Optimized Object Packings Using

This volume presents a selection of case studies that address a substantial range of optimized object packings (OOP) and their applications. The contributing authors are well-recognized researchers and practitioners. The mathematical modelling and numerical solution aspects of each application case study are presented in sufficient detail. A broad range of OOP problems are discussed: these include various specific and non-standard container loading and object packing problems, as well as the stowing of hazardous and other materials on container ships, data centre resource management, automotive engineering design, space station logistic support, cutting and packing problems with placement constraints, the optimal design of LED street lighting, robust sensor deployment strategies, spatial scheduling problems, and graph coloring models and metaheuristics for packing applications. Novel points of view related to model development and to computational nonlinear, global, mixed integer optimization and heuristic strategies are also discussed. Optimized Packings with Applications will benefit researchers and practitioners working on a broad range of topical engineering and operations research applications. Academics, graduate and post-graduate students in the fields of engineering, applied mathematics, operations research and optimization will also find the book useful, since it discusses a range of advanced model development and solution techniques and tools in the context of real-world applications and new challenges.

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