1.	Record Nr.	UNINA9910736005103321
	Autore	Brockhoff Dimo
	Titolo	Many-Criteria Optimization and Decision Analysis : State-of-the-Art, Present Challenges, and Future Perspectives / / edited by Dimo Brockhoff, Michael Emmerich, Boris Naujoks, Robin Purshouse
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
	ISBN	3-031-25263-2
	Edizione	[1st ed. 2023.]
	Descrizione fisica	1 online resource (364 pages)
	Collana	Natural Computing Series, , 2627-6461
	Altri autori (Persone)	EmmerichMichael NaujoksBoris PurshouseRobin
	Disciplina	006.3823
	Soggetti	Computer science Operations research Theory of Computation Operations Research and Decision Theory
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Chapter 1: Introduction to Many-Criteria Optimization and Decision Analysis -- Chapter 2: Key Issues in Real-World Applications of Many-Objective Optimisation and Decision Analysis -- Chapter 3: Identifying Properties of Real-World Optimisation Problems through a Questionnaire -- Chapter 4: Many-Criteria Dominance Relations -- Chapter 5: Many-Objective Quality Measures -- Chapter 6: Benchmarking -- Chapter 7: Visualisation for decision support in many-objective optimisation: state-of-the-art, guidance and future directions -- Chapter 8: Theoretical Aspects of Subset Selection in Multi-Objective Optimisation -- Chapter 9: Identifying Correlations in Understanding and Solving Multi-Objective Problems -- Chapter 10: Bayesian Optimization -- Chapter 11: A game theoretic perspective on Bayesian many-objective optimization -- Chapter 12: Heterogeneous Objectives: State-of-the-Art and Future Research -- Chapter 13: MACODA Ontology and Knowledge Management.
	Sommario/riassunto	This book presents the state-of-the-art, current challenges, and future

perspectives for the field of many-criteria optimization and decision analysis. The field recognizes that real-life problems often involve trying to balance a multiplicity of considerations simultaneously – such as performance, cost, risk, sustainability, and quality. The field develops theory, methods and tools that can support decision makers in finding appropriate solutions when faced with many (typically more than three) such criteria at the same time. The book consists of two parts: key research topics, and emerging topics. Part I begins with a general introduction to many-criteria optimization, perspectives from research leaders in real-world problems, and a contemporary survey of the attributes of problems of this kind. This part continues with chapters on fundamental aspects of many-criteria optimization, namely on order relations, quality measures, benchmarking, visualization, and theoretical considerations. Part II offers more specialized chapters on correlated objectives, heterogeneous objectives, Bayesian optimization, and game theory. Written by leading experts across the field of many-criteria optimization, this book will be an essential resource for researchers in the fields of evolutionary computing, operations research, multiobjective optimization, and decision science.