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Titolo	Uncertain Multi-objective Decision Making: Methods and Industrial Models // by Hamed Fazlollahtabar
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ISBN	981-9560-35-7
Edizione	[1st ed. 2026.]
Descrizione fisica	1 online resource (471 pages)
Collana	Engineering Series
Disciplina	519.6
Soggetti	Mathematical optimization Statistics Logic, Symbolic and mathematical Optimization Statistical Theory and Methods Mathematical Logic and Foundations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Fuzzy Multi-Objective Optimization by -cut method -- Fuzzy Multi-Objective Optimization by utility-based maximum technique -- Integrated Fuzzy PROMETHEE and Fuzzy linear Multi-Objective Program -- Fuzzy Multi-Objective AHP-TOPSIS Method -- Fuzzy Multi-Objective Mathematical Programming using Ranking Method -- Vague Multi-Objective Optimization by Branch and Bound method -- Possible Vague Multi-Objective Optimization in Queue System -- Possible Vague Multi-Objective Optimization in Queue System -- Rough Multi-Objective Optimization using Best-Worst method -- Multi-Objective Possibility Theory -- Bayesian Multi-Objective Optimization -- Stochastic Multi-Objective Optimization -- Artificial Intelligence Application for Multi-Objective Optimization.
Sommario/riassunto	This book explains multi-objective optimization as an area of multicriteria decision making that deals with mathematical optimization problems involving more than one objective function that must be optimized simultaneously. Multi-objective optimization is used in many fields of science, including engineering, economics, and logistics, where there is a need to make optimal decisions in the presence of

trade-offs between two or more conflicting objectives. Uncertain optimization refers to contexts where there is uncertainty in models and data. It potentially has various applications in different domains such as portfolio selection, inventory management, pollution reduction, sustainable development, resource allocation and reallocation, and performance analysis. The book encompasses various types of uncertainty in decision making namely fuzziness, possibility, Bayesian, stochastic, roughness, vagueness, and artificial intelligence and develops application areas in industrial cases. It includes 12 chapters presenting multiobjective decision models under one of the uncertainty types. In each chapter an implementation study is illustrated to show the applicability of the model.
