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Nota di contenuto	Introduction -- Types of Capacities -- Value and Interaction Indices -- Representations -- Fuzzy Intergrals -- Sparse Capacities -- Symmetric Fuzzy Measures: OWA -- Learning Capacities -- Optimisation Models Based on Fuzzy Integrals -- Random Sampling of the Capacities.
Sommario/riassunto	Choquet capacities, which provide the weighting mechanism for the Choquet and other fuzzy integrals, model synergistic and antagonistic interactions between variables by assigning value to all subsets rather than individual inputs. This book provides a detailed overview of the background concepts relating to capacities and their role in fuzzy integration and aggregation, then presents specialised chapters on most recent results in learning, random sampling and optimization that involve Choquet capacities. Topics and features: · Fundamentals of Choquet capacities (fuzzy measures) and their use in modeling importance and interaction between variables · Definitions, properties and mappings between alternative representations that allow capacities and fuzzy integrals to be interpreted and applied in different settings ·

Capacity learning formulations that allow the diverse types to be elicited from datasets or according to user-specified requirements · Recent findings related to random sampling and optimisation with Choquet integral objectives This book includes illustrative examples and guidance for implementation, including an appendix detailing functions found in the pyfntools software library. It aims to be useful for practitioners and researchers in decision and data-driven fields, or those who wish to apply these emerging tools to new problems. The authors are all affiliated with the School of Information Technology at Deakin University, Australia. Gleb Beliakov is a professor, Simon James< is an Associate Professor, and Jian-Zhang Wu is a Research Fellow. .
