

1. Record Nr.	UNINA9910734831203321
Autore	Cox Louis A., Jr. (Louis Anthony), <1957->
Titolo	AI-MIL for Decision and Risk Analysis : Challenges and Opportunities for Normative Decision Theory // by Louis Anthony Cox Jr
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	9783031320132 3031320131
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (443 pages)
Collana	International Series in Operations Research & Management Science, , 2214-7934 ; ; 345
Disciplina	658.4030028563
Soggetti	Operations research Financial risk management Machine learning Artificial intelligence Markov processes Operations Research and Decision Theory Risk Management Machine Learning Artificial Intelligence Markov Process
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I. Received Wisdom -- 1.Rational Decision and Risk Analysis and Irrational Human Behavior -- 2.Data Analytics and Modeling for Improving Decisions -- 3. Natural, Artificial, and Social Intelligence for Decision-Making -- Part 2: Fundamental Challenges for Practical Decision Theory -- 4.Answerable and Unanswerable Questions in Decision and Risk Analysis -- 5.Decision Theory -- 6.Learning Aversion in Benefit-Cost Analysis with Uncertainty -- Part 3: Ways forward 7. Addressing Wicked Problems and Deep Uncertainties in Risk Analysis -- 8.Muddling Through and Deep Learning for Bureaucratic Decision-Making -- 9.Causally Explainable Decision Recommendations using Causal Artificial Intelligence -- Part 4: Public Health Applications -- 10.

Re-Assessing Human Mortality Risks Attributed to Agricultural Air Pollution: Insights from Causal Artificial Intelligence -- 11. Toward more Practical Causal Epidemiology and Health Risk Assessment Using Causal Artificial Intelligence -- 12. Clarifying the Meaning of Exposure-Response Curves with Causal AI -- 13. Pushing Back on AI: A Dialogue with ChatGPT -- Index.

Sommario/riassunto

This book explains and illustrates recent developments and advances in decision-making and risk analysis. It demonstrates how artificial intelligence (AI) and machine learning (ML) have not only benefitted from classical decision analysis concepts such as expected utility maximization but have also contributed to making normative decision theory more useful by forcing it to confront realistic complexities. These include skill acquisition, uncertain and time-consuming implementation of intended actions, open-world uncertainties about what might happen next and what consequences actions can have, and learning to cope effectively with uncertain and changing environments. The result is a more robust and implementable technology for AI/ML-assisted decision-making. The book is intended to inform a wide audience in related applied areas and to provide a fun and stimulating resource for students, researchers, and academics in data science and AI/ML, decision analysis, and other closely linked academic fields. It will also appeal to managers, analysts, decision-makers, and policymakers in financial, health and safety, environmental, business, engineering, and security risk management.