Breakthroughs in Decision Science and Risk Analysis. Wiley Essentials in Operations Research and Management Science

Description: Discover recent powerful advances in the theory, methods, and applications of decision and risk analysis

Focusing on recent advances and innovations in the field of decision analysis (DA), Breakthroughs in Decision Science and Risk Analysis presents theories and methods for making, improving, and learning from significant practical decisions. The book explains these new methods and important applications in an easily accessible and stimulating style for readers from multiple backgrounds, including psychology, economics, statistics, engineering, risk analysis, operations research, and management science.

Emphasizing topics not traditionally found in DA literature, the book illustrates genuine advances in practical decision science and includes developments and trends that depart from, or break with, the standard axiomatic DA paradigm in fundamental and useful ways. The book features methods for coping with realistic decision-making challenges, including online adaptive learning algorithms, innovations in robust decision-making, and the use of a variety of models to provide more-or-less plausible explanations for available data and recommended actions. In addition, the book illustrates how these techniques can be applied to dramatically improve risk management decisions. Breakthroughs in Decision Science and Risk Analysis also includes:

- An emphasis on new approaches rather than classical and traditional ideas
- Discussions of how decision and risk analysis can be applied to improve high-stakes policy and management decisions
- Coverage of the potential value and realism of decision science within applications in financial, health, safety, environmental, business, engineering, and security risk management
- Innovative methods for deciding what to do when decision problems are not completely known or described or when useful probabilities cannot be specified
- Recent breakthroughs in the psychology and brain science of risky decisions, mathematical foundations and techniques, and integration with learning and pattern recognition methods from computational intelligence

Breakthroughs in Decision Science and Risk Analysis is an ideal reference for researchers, consultants, and practitioners in the fields of decision science, operations research, business, management science, engineering, statistics, and mathematics. The book is also an appropriate guide for managers, analysts, and decision and policy makers in the areas of finance, health and safety, environment, business, engineering, and security risk management.

Louis Anthony (Tony) Cox, Jr. PhD, is Chief Sciences Officer of NextHealth Technologies, a Denver-based health care advanced analytics software company and President of Cox Associates, Inc., a Denver-based applied research company specializing in quantitative health risk assessment, risk analysis, causal modeling, and operations research. Dr. Cox is also Clinical Professor of Biostatistics and Informatics at the University of Colorado at Denver, a member of the National Academy of Engineering, and Editor-in-Chief of Risk Analysis: An International Journal.

Contents:

Preface

Chapter 1 Introduction: Breakthroughs in Decision and Risk Analysis

Louis Anthony (Tony) Cox, Jr. (University of Colorado and NextHealth Technologies)

Chapter 2 The Ways We Decide: Reconciling Hearts and Minds

Edward C. Rosenthal (Temple University)

Chapter 3 Simulation Optimization: Improving decisions under uncertainty
Chapter 4 Optimal Learning in Business Decisions
Marco Better (OptTek Systems, Inc.), Fred Glover (OptTek Systems, Inc.) and Gary Kochenberger (University of Colorado Denver)

Chapter 5 Using Preference Orderings to Make Quantitative Trade–Offs
Ilya O. Ryzhov (University of Maryland)

Chapter 6 Causal Analysis and Modeling for Decision and Risk Analysis
Chen Wang (Tsinghua University) and Vicki M. Bier (University of Wisconsin–Madison)

Chapter 7 Making Decisions Without Trustworthy Risk Models
Louis Anthony (Tony) Cox, Jr. (University of Colorado and NextHealth Technologies)

Chapter 8 Medical Decision Making: An Application to Sugar–Sweetened Beverages
Ali Abbas (University of Illinois at Urbana–Champaign) and Andrea C. Hupman (University of Illinois at Urbana–Champaign)

Chapter 9 Electric Power Vulnerability Models: From Protection To Resilience
Vicki M. Bier (University of Wisconsin–Madison) and Sinan Tas (???)

Chapter 10 Outthinking the Terrorists
Jason Merrick (Virginia Commonwealth University), Philip Leclerc (Virginia Commonwealth University), Hristo Trenkov (Deloitte Consulting) and Robert Olsen (Deloitte Consulting)

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