

Notice pdf - Handbook for management of threats

Type de contenu : Texte

Type de médiation : sans médiation

Type de support : Volume

Titre(s) : Handbook for management of threats : security and defense, resilience and optimal strategies / Konstantinos P. Balomenos, Antonios Fytopoulos, Panos M. Pardalos, editors

Auteur(s) : Balomenos, Konstantinos P.

Autre(s) auteur(s) : Fytopoulos, Antonios
Pardalos, Panos M. (1954-....)

Publication : Cham : Springer

Description matérielle : 1 vol. (XVI-537 p.) : ill., cartes ; 24 cm

Collection : Springer optimization and its applications 1931-6828 vol. 205

ISBN : 978-3-031-39541-3

EAN : 9783031395413 rel.

Appartient à la collection : Springer optimization and its applications (Print) 1931-6828 205

Classification décimale Dewey : 363.348

Note sur les bibliographies et les index : Bibliogr. en fin de chapitres. Notes bibliogr.

Note sur le contenu : Intro Preface Contents Contributors Future Threats: Creating a Resilient Society 1 Introduction 2 Future Threats 2.1 Challenges in the Use of Artificial Intelligence 2.2 A User-Privileged Society 2.3 Pandemics 2.4 Climate Change and Major Natural Disasters Due to Extreme Weather 2.5 The Network of Networks 2.6 Control of the Mind: The Next Battlespace 2.7 Transnational Organized Crime 2.8 A Crisis in Politics: Change in Political Systems 2.9 The Gray Zones Between Truth: Misinformation, Disinformation, and Conspiracy 2.10 Space Battles 3 Conclusions References Managing Environmental Threats: Integrating Nature-Related Risks into Investment Decisions and the Financial System 1 Introduction 2 Literature Review 3 The Evolution of the Concepts Defining Nature-Related Risks 4 Tackling the Specificities of Nature-Related Risks 5 Transmission Channels and Potential Systemic Risks for the Stability of the Economic and Financial Systems 6 Current Practices and Their Limits 7 Opportunities for Further Integration of Nature-Related Risks 8 Beyond Risk Management, an Efficient Frontier Between Precaution and Dealing with Uncertainty? 9 Conclusion References Defense-Critical

Supply Chain Networks and Risk Management with the Inclusion of Labor: Dynamics and Quantification of Performance and the Ranking of Nodes and Links 1 Introduction 2 Defense-Critical Supply Chain Network Game Theory Modeling 2.1 Governing Equilibrium Conditions and Variational Inequality Formulations Nash Equilibrium Conditions and Variational Inequality Formulations 2.2 Dynamics and Algorithm 3 Defense Supply Chain Network Efficiency/Performance 3.1 Efficiency/Performance of a Defense Supply Chain Network and Importance Identification of a Network Component 3.2 Resilience Measure Associated with Labor Disruptions 4 Numerical Examples 5 Summary, Conclusions, and Suggestions for Future Research References Facing Shortages: Practical Strategies to Improve Supply Chain Resilience 1 Introduction 2 Research Methodology 2.1 Search Strategy and Inclusion Criteria 2.2 Studies' Selection and Evaluation 2.3 Analysis and Critical Taxonomy 3 Results 3.1 Literature Landscape 3.2 Causes of Resource Shortages 3.3 Mitigation Strategies 4 Conclusions References Critical Infrastructure Detection During an Evacuation with Alternative Fuel Vehicles 1 Introduction 1.1 Alternative Fuel Vehicles 1.2 Evacuation and Disaster Management 1.3 Threats to Evacuation and Transportation 1.4 Critical Element Detection 2 Framework 2.1 Notation and Fundamentals 2.2 Problem Definition 2.3 Mathematical Formulation 3 Side-Constrained Betweenness Heuristic 3.1 Intuition 3.2 Side-Constrained Betweenness Centrality

Résumé ou extrait : In answer to the unprecedented challenges and threats that face today's globalized world, the primary goal of this Handbook is to identify the most probable threats that have affected humanity in recent years and our world in years to come. The Handbook comprises mostly expository chapters that discuss tested methods/algorithms, case studies, as well as policy decision-making techniques surrounding threats and unnatural disasters, to evaluate their effects on people and to propose ways to mitigate these effects. In several chapters, new approaches and suggested policies supplement algorithms that are already in practice. The curated content brings together key experts from the academic and policy worlds to formulate a guide of principal techniques employed to gain better control over selected types of threats. This Handbook explores a wide range of technologies and theories and their impact on countering threats. These include artificial intelligence, machine learning, variational inequality theory, game theory, data envelopment analysis, and data-driven risk analysis. These tools play a vital role in decision-making processes and aid in finding optimal solutions. Additionally, a variety of optimization techniques are employed. These include (mixed) integer linear programming models for identifying critical nodes in complex systems, heuristics, approximation algorithms, and bilevel mixed integer programming for determining the most impactful links in dynamic networks. Furthermore, simulation tools are described that enable the quantification of societal resilience. These techniques collectively provide a mathematical framework capable of quantifying fundamental aspects of threats. They equip policymakers with the necessary tools and knowledge to minimize the impact of unnatural threats. The expected readership is wide and includes officials working in technical and policy roles in various ministries such as the Ministry of Defense, Civil Protection, Ministry of Public Order and Citizen Protection, United Nations, European Institutions for Threat Management, NATO, Intelligence Agencies, Centers of Excellence for Countering Threats, Think Tanks, Centers for Policy Studies, Political Leaders, the European Commission, National Institutes, International Organizations, Strategic Consulting Experts, Policymakers, and Foreign Affairs personnel. Some of these national or international organizations employ algorithms to measure resilience and enhance security. Quantification is challenging but crucial in the scenarios discussed in the book. This Handbook will also prove valuable to various universities (non-practitioners), studying systems engineering, leadership, management, strategy, foreign affairs, politics, and related disciplines

Sujet - Nom commun : Gestion des situations d'urgence
Gestion des situations d'urgence -- Mathématiques
Optimisation mathématique