Handbook of Real-World Applications in Modeling and Simulation. Wiley Handbooks in Operations Research and Management Science

Description: Introduces various modeling and simulation methods and paradigms that are used to explain and solve the predominant challenges facing society

Handbook of Real-World Applications in Modeling and Simulation provides a thorough explanation of modeling and simulation in the most useful, current, and predominant applied areas of transportation, homeland security, medicine, operational research, military science, and business modeling. Offering a cutting-edge and accessible presentation, this book discusses how and why the presented domains have become leading applications of modeling and simulation techniques.

Contributions from leading academics and researchers integrate modeling and simulation theories, methods, and data to analyze challenges that involve technological and social issues. The book begins with an introduction that explains why modeling and simulation is a reliable analysis assessment tool for complex systems problems. Subsequent chapters provide an orientation to various modeling and simulation methods and paradigms that are used to explain and solve the predominant challenges across real-world applied domains. Additionally, the handbook:

Provides a practical one-stop reference on modeling and simulation and contains an accessible introduction to key concepts and techniques

Introduces, trains, and prepares readers from statistics, mathematics, engineering, computer science, economics, and business to use modeling and simulation in their studies and research

Features case studies that are representative of fundamental areas of multidisciplinary studies and provides a concise look at the key concepts of modeling and simulation

Contains a collection of original ideas on modeling and simulation to help academics and practitioners develop a multifunctional perspective

Self-contained chapters offer a comprehensive approach to explaining each respective domain and include sections that explore the related history, theory, modeling paradigms, and case studies. Key terms and techniques are clearly outlined, and exercise sets allow readers to test their comprehension of the presented material.

Handbook of Real-World Applications in Modeling and Simulation is an essential reference for academics and practitioners in the areas of operations research, business, management science, engineering, statistics, mathematics, and computer science. The handbook is also a suitable supplement for courses on modeling and simulation at the graduate level.

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