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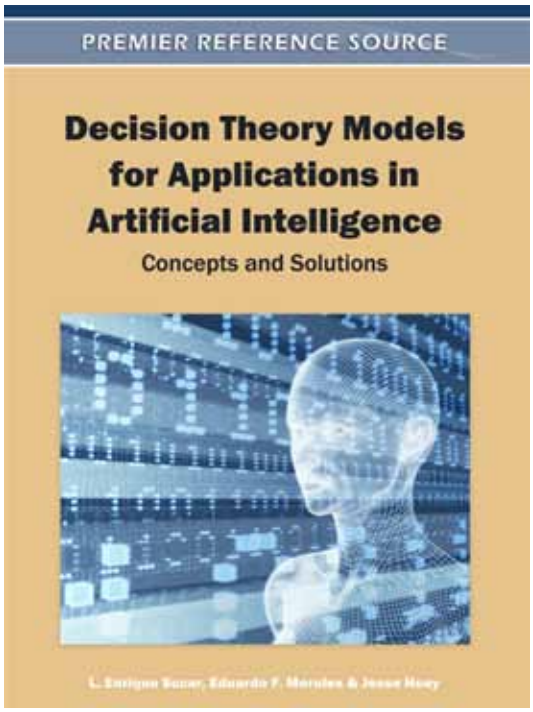
Decision Theory Models for Applications in Artificial Intelligence: Concepts and Solutions



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One of the goals of artificial intelligence (AI) is creating autonomous agents that must make decisions based on uncertain and incomplete information. The goal is to design rational agents that must take the best action given the information available and their goals.

Decision Theory Models for Applications in Artificial Intelligence: Concepts and Solutions provides an introduction to different types of decision theory techniques, including MDPs, POMDPs, Influence Diagrams, and Reinforcement Learning, and illustrates their application in artificial intelligence. This book provides insights into the advantages and challenges of using decision theory models for developing intelligent systems.

Topics Covered:

- Active learning simulators
- Bayesian networks and influence diagrams
- Decision theoretic models for health in the home
- Dynamic decision networks applications
- Fully and partially observable Markov decision processes
- Intelligent assistants for power plant operations and training
- Multistage stochastic programming
- Reinforcement learning
- Strategies for solving semi-Markov decision processes
- Task coordination for service robots

Market: This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners and is ideal for classroom use.

Enrique Sucar has a Ph.D in computing from Imperial College, London; a M.Sc. in electrical engineering from Stanford University; and a B.Sc. in electronics and communications engineering from ITESM, Monterrey, Mexico. He has been a Researcher at the Electrical Research Institute and Professor at ITESM Cuernavaca, and is currently a Senior Researcher at INAOE, Puebla, Mexico. He has more than 100 publications in journals and conference proceedings, and has directed 16 Ph.D. thesis. Dr. Sucar is Member of the National Research System, the Mexican Science Academy, and Senior Member of the IEEE. He has served as president of the Mexican AI Society, has been member of the Advisory Board of IJCAI, and is Associate Editor of the journals *Computación y Sistemas* and *Revista Iberoamericana de Inteligencia Artificial*. His main research interest are in graphical models and probabilistic reasoning, and their applications in computer vision, robotics and biomedicine.

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