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

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