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| Nota di contenuto | Contents; Preface; 1. Finite-Horizon Models; 1.1 Preliminaries; 1.2 Model Description; 1.3 Dynamic Programming Approach; 1.4 Examples; 1.4.1 Non-transitivity of the correlation; 1.4.2 The more frequently used control is not better; 1.4.3 Voting; 1.4.4 The secretary problem; 1.4.5 Constrained optimization; 1.4.6 Equivalent Markov selectors in non-atomic MDPs; 1.4.7 Strongly equivalent Markov selectors in nonatomic MDPs; 1.4.8 Stock exchange; 1.4.9 Markov or non-Markov strategy? Randomized or not? When is the Bellman principle violated?; 1.4.10 Uniformly optimal, but not optimal strategy<br>1.4.11 Martingales and the Bellman principle1.4.12 Conventions on expectation and infinities; 1.4.13 Nowhere-differentiable function vt(x); discontinuous function vt(x); 1.4.14 The non-measurable Bellman function; 1.4.15 No one strategy is uniformly -optimal; 1.4.16 Semi-continuous model; 2. Homogeneous Infinite-Horizon Models: Expected Total Loss; 2.1 Homogeneous Non-discounted Model; 2.2 Examples; 2.2.1 Mixed Strategies; 2.2.2 Multiple solutions to the optimality equation; 2.2.3 Finite model: multiple solutions to the optimality equation; conserving but not equalizing strategy |

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2.2.13 Finite-action negative model where a stationary uniformly  -optimal selector does not exist2.2.14 Nearly uniformly optimal selectors in negative models; 2.2.15 Semi-continuous models and the blackmailer's dilemma; 2.2.16 Not a semi-continuous model; 2.2.17 The Bellman function is non-measurable and no one strategy is uniformly  -optimal; 2.2.18 A randomized strategy is better than any selector (finite action space); 2.2.19 The fluid approximation does not work; 2.2.20 The fluid approximation: refined model; 2.2.21 Occupation measures: phantom solutions
2.2.22 Occupation measures in transient models2.2.23 Occupation measures and duality; 2.2.24 Occupation measures: compactness; 2.2.25 The bold strategy in gambling is not optimal (house limit); 2.2.26 The bold strategy in gambling is not optimal (inflation); 2.2.27 Search strategy for a moving target; 2.2.28 The three-way duel ("Truel"); 3. Homogeneous Infinite-Horizon Models: Discounted Loss; 3.1 Preliminaries; 3.2 Examples; 3.2.1 Phantom solutions of the optimality equation; 3.2.2 When value iteration is not successful: positive model
3.2.3 A non-optimal strategy  for which v  x solves the optimality equation

Sommario/riassunto

This invaluable book provides approximately eighty examples illustrating the theory of controlled discrete-time Markov processes. Except for applications of the theory to real-life problems like stock exchange, queues, gambling, optimal search etc, the main attention is paid to counter-intuitive, unexpected properties of optimization problems. Such examples illustrate the importance of conditions imposed in the theorems on Markov Decision Processes. Many of the examples are based upon examples published earlier in journal articles or textbooks while several other examples are new. The aim was