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Autore	Piunovskiy Alexey
Titolo	Continuous-Time Markov Decision Processes : Borel Space Models and General Control Strategies // by Alexey Piunovskiy, Yi Zhang
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Descrizione fisica	1 online resource (XXIV, 583 p. 10 illus., 3 illus. in color.)
Collana	Probability Theory and Stochastic Modelling, , 2199-3149 ; ; 97
Disciplina	519.233
Soggetti	Probabilities Mathematical statistics - Data processing System theory Control theory Mathematical optimization Probability Theory Statistics and Computing Systems Theory, Control Optimization
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Foreword -- Preface -- Description of CTMDPs and Preliminaries -- Selected Properties of Controlled Processes -- The Discounted Cost Model -- Reduction to DTMDP: The Total Cost Model -- The Average Cost Model -- The Total Cost Model: General Case -- Gradual-Impulsive Control Models -- Appendices: Miscellaneous Results.- Relevant Definitions and Facts -- Definitions and Facts about Discrete-Time Markov Decision Processes -- Bibliography -- Index -- Notation.
Sommario/riassunto	This book offers a systematic and rigorous treatment of continuous-time Markov decision processes, covering both theory and possible applications to queueing systems, epidemiology, finance, and other fields. Unlike most books on the subject, much attention is paid to problems with functional constraints and the realizability of strategies. Three major methods of investigations are presented, based on

dynamic programming, linear programming, and reduction to discrete-time problems. Although the main focus is on models with total (discounted or undiscounted) cost criteria, models with average cost criteria and with impulsive controls are also discussed in depth. The book is self-contained. A separate chapter is devoted to Markov pure jump processes and the appendices collect the requisite background on real analysis and applied probability. All the statements in the main text are proved in detail. Researchers and graduate students in applied probability, operational research, statistics and engineering will find this monograph interesting, useful and valuable. .
