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| Autore | Lozovanu Dmitrii |
| Titolo | Optimization of Stochastic Discrete Systems and Control on Complex Networks : Computational Networks / / by Dmitrii Lozovanu, Stefan Pickl |
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| Descrizione fisica | 1 online resource (420 p.) |
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| Disciplina | 519.233 |
| Soggetti | Operations research<br>Decision making<br>Mathematical optimization<br>Management science<br>Algorithms<br>Operations Research/Decision Theory<br>Optimization<br>Operations Research, Management Science<br>Discrete Optimization<br>Algorithm Analysis and Problem Complexity |
| Lingua di pubblicazione | Inglese |
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| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Discrete stochastic processes, numerical methods for Markov chains and polynomial time algorithms -- Stochastic optimal control problems and Markov decision processes with infinite time horizon -- A game-theoretical approach to Markov decision processes, stochastic positional games and multicriteria control models -- Dynamic programming algorithms for finite horizon control problems and Markov decision processes. |
| Sommario/riassunto | This book presents the latest findings on stochastic dynamic programming models and on solving optimal control problems in networks. It includes the authors’ new findings on determining the optimal solution of discrete optimal control problems in networks and on solving game variants of Markov decision problems in the context of |

computational networks. First, the book studies the finite state space of Markov processes and reviews the existing methods and algorithms for determining the main characteristics in Markov chains, before proposing new approaches based on dynamic programming and combinatorial methods. Chapter two is dedicated to infinite horizon stochastic discrete optimal control models and Markov decision problems with average and expected total discounted optimization criteria, while Chapter three develops a special game-theoretical approach to Markov decision processes and stochastic discrete optimal control problems. In closing, the book's final chapter is devoted to finite horizon stochastic control problems and Markov decision processes. The algorithms developed represent a valuable contribution to the important field of computational network theory.