

1. Record Nr.	UNINA9911020439303321
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Titolo	Sequential stochastic optimization / / R. Cairoli, Robert C. Dalang
Pubbl/distr/stampa	New York, : J. Wiley & Sons, c1996
ISBN	9786613227997 9781283227995 1283227991 9781118164396 1118164393 9781118164402 1118164407
Descrizione fisica	1 online resource (348 p.)
Collana	Wiley series in probability and mathematical statistics
Altri autori (Persone)	Dalang Robert C. <1961->
Disciplina	519.2
Soggetti	Optimal stopping (Mathematical statistics) Dynamic programming Stochastic control theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Wiley-Interscience publication."
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Sequential Stochastic Optimization; Contents; Preface; Notation and Conventions; 1. Preliminaries; 1.1 Filtered Probability Spaces; 1.2 Random Variables; 1.3 Stopping Points; 1.4 Increasing Paths and Accessible Stopping Points; 1.5 Some Operations on Accessible Stopping Points; 1.6 Stochastic Processes and Martingales; Exercises; Historical Notes; 2. Sums of Independent Random Variables; 2.1 Maximal Inequalities; 2.2 Integrability Criteria for the Supremum; 2.3 The Strong Law of Large Numbers; 2.4 Case Where the Random Variables Are Identically Distributed; Exercises; Historical Notes 3. Optimal Stopping 3.1 Stating the Problem; 3.2 Snell's Envelope; 3.3 Solving the Problem; 3.4 A Related Problem; 3.5 Maximal Accessible Stopping Points; 3.6 Case Where the Index Set is Finite; 3.7 An Application to Normalized Partial Sums; 3.8 Complements; Exercises; Historical Notes; 4. Reduction to a Single Dimension; 4.1 Linear Representation of Accessible Stopping Points; 4.2 Applications; 4.3

Linear Representation in the Setting of Inaccessible Stopping Points; Exercises; Historical Notes; 5. Accessibility and Filtration Structure; 5.1 Conditions for Accessibility  
5.2 Consequences for the Structure of the Filtration 5.3 The Bidimensional Case; 5.4 Predictability of Optional Increasing Paths; 5.5 The Combinatorial Structure of a Filtration; 5.6 The Combinatorial Structure of a Filtration Satisfying COI; 5.7 Optimal Stopping and Linear Optimization; Exercises; Historical Notes; 6. Sequential Sampling; 6.1 Stating the Problem; 6.2 Constructing the Model; 6.3 The Reward Process and Snell's Envelope; 6.4 Describing the Optimal Strategy; 6.5 The Likelihood-Ratio Test; 6.6 Applications; 6.7 Complement; Exercises; Historical Notes; 7. Optimal Sequential Control  
7.1 An Example 7.2 Preliminaries; 7.3 Controls; 7.4 Optimization; 7.5 Optimization Over Finite Controls; 7.6 Case Where the Index Set Is Finite; 7.7 Extension to General Index Sets; Exercises; Historical Notes; 8. Multiarmed Bandits; 8.1 Formulating the Problem; 8.2 Index Controls; 8.3 Gittins Indices; 8.4 Characterizing Optimal Controls; 8.5 Examples; Exercises; Historical Notes; 9. The Markovian Case; 9.1 Markov Chains and Superharmonic Functions; 9.2 Optimal Control of a Markov Chain; 9.3 The Special Case of a Random Walk  
9.4 Control and Stopping at the Time of First Visit to a Set of States 9.5 Markov Structures; Exercises; Historical Notes; 10. Optimal Switching Between Two Random Walks; 10.1 Formulating and Solving the Problem; 10.2 Some Properties of the Solution; 10.3 The Structure of the Solution; 10.4 Constructing the Switching Curves; 10.5 Characterizing the Type of the Solution; 10.6 Determining the Type of the Solution; Exercises; Historical Notes; Bibliography; Index of Notation; Index of Terms

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#### Sommario/riassunto

Sequential Stochastic Optimization provides mathematicians and applied researchers with a well-developed framework in which stochastic optimization problems can be formulated and solved. Offering much material that is either new or has never before appeared in book form, it lucidly presents a unified theory of optimal stopping and optimal sequential control of stochastic processes. This book has been carefully organized so that little prior knowledge of the subject is assumed; its only prerequisites are a standard graduate course in probability theory and some familiarity with discrete-paramet

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