STOCHASTIC MODELS
AN ALGORITHMIC APPROACH
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SUMMARY

Wiley Series in Probability and Mathematical Statistics
Editors
Stochastic Models:
An Algorithmic Approach
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Stochastic Models: An Algorithmic Approach fulfills the widely perceived need for an introductory text which demonstrates the effective use of simple stochastic models to gain insight into the behaviour of complex stochastic systems.

The author's earlier book, Stochastic Modeling and Analysis: A Computational Approach (1986) has become a leading text in the fields of applied probability and stochastic optimization. While this new book retains the features of providing theory, realistic examples and practically useful algorithms it is written with a wider readership in mind and is more student-oriented.

Covering renewal and regenerative processes, discrete-time and continuous-time Markov chains, Markovian decision processes, inventory and queuing theory the book will enable students to perform algorithmic analysis for specific problems.

Chosen to illustrate the basic models and their associated solution methods, the examples are drawn from a variety of applications fields, such as inventory control, reliability, maintenance, insurance and teletraffic. Each chapter concludes with a range of interesting and thought-provoking exercises, some of which require the use of computer software.

The accessible yet rigorous exposition ensures that the book will be an invaluable resource for senior undergraduate and graduate students of operations research, statistics and engineering.

CONTENTS

Préface ix

Chapter 1 Renewal Processes with Applications 1
1.0 Introduction 1
1.1 Renewal Theory 2
1.1.1 The renewal function 3
1.1.2 Asymptotic expansions 7
1.1.3 Computation of the renewal function 14
1.2 Poisson Process and Extensions 18
1.2.1 Poisson process 18
1.2.2 Compound Poisson process 27
1.2.3 Nonstationary Poisson process 30
1.3 Renewal-Reward Processes 32
1.4 Reliability Applications 43
1.5 Inventory Applications 51
1.5.1 The continuous-review (s, Q) inventory model 52
1.5.2 The periodic-review (R, S) inventory model 58
1.5.3 The periodic-review (R, s, S) inventory model 61
1.5.4 The continuous-review (s, S) inventory model 68
1.5.5 Rational approximations for inventory calculations 69
1.6 Little's Formula 71
1.7 Poisson Arrivals See Time Averages 73
1.8 Asymptotic Expansion for Ruin and Waiting-time Probabilities 78
Exercises 84
Bibliographie Notes 90
References 90
Some algorithms for computing the underlying continuous-time stochastic model from a sampled ARMA model are presented. Three algorithms are given, all having a modest computational complexity. The properties of the algorithms are analysed and also illustrated by means of numerical examples.