Digital Dice: Computational Solutions to Practical Probability Problems

Paul J. Nahin
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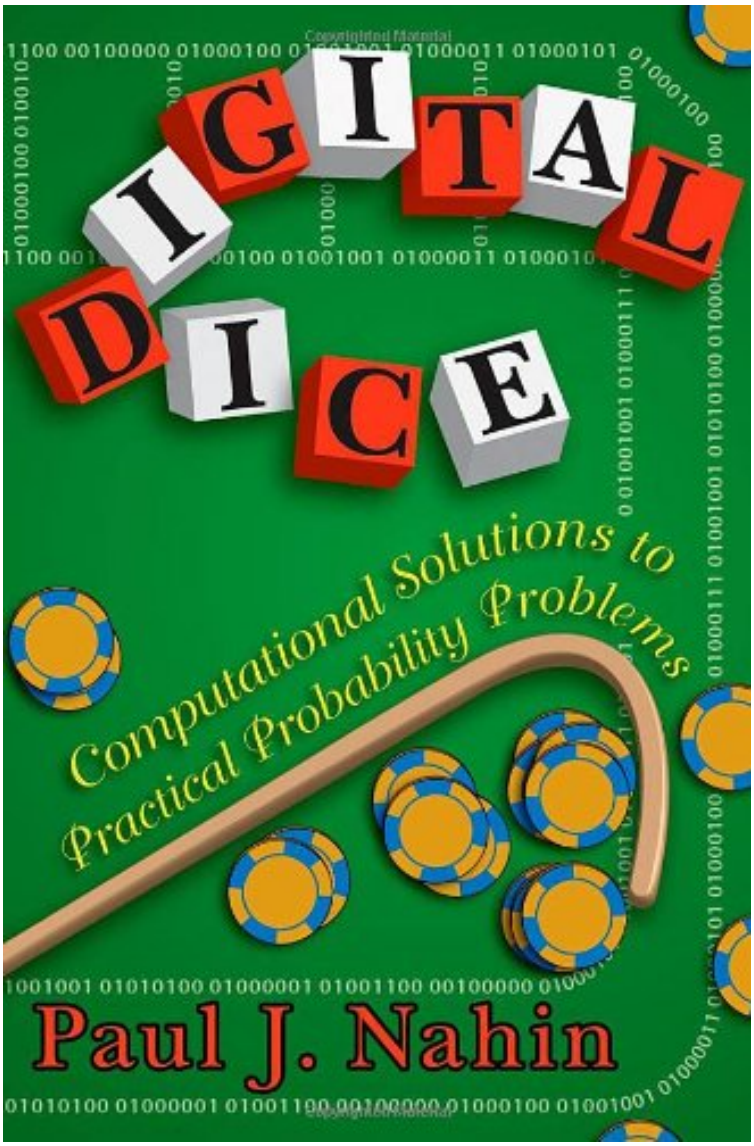

#2072141 in Books Princeton University Press 2008-03-23Original language:EnglishPDF # 1 .94 x 6.41 x 9.40l, 1.16 #File Name: 0691126984280 pages | File size: 25.Mb

Paul J. Nahin : Digital Dice: Computational Solutions to Practical Probability Problems before purchasing it in order to gage whether or not it would be worth my time, and all praised Digital Dice: Computational Solutions to Practical Probability Problems:

0 of 0 people found the following review helpful. Good attempt but poor executionBy P. KimGood attempt but not so good execution.As other reviews have mentioned the codes are not so well executed.At first, I thought I was at fault

but nope...Also, not sure if the exercises were to be really simple or just not well done.0 of 0 people found the following review helpful. Five StarsBy JAIME R GUERRA BETHENCOURTGood2 of 4 people found the following review helpful. Superlative Overview of Computational Methods for ProbablityBy TWThis book is exactly what it purports to be; a computational guide to solving real world probability problems. The essence of the book is to take very complex probability examples and show how to solve them using the Monte Carlo system; writing a program to run thousands or millions of computations with random number generators to see how the probability unfolds.Digital Dice is only for those with an extensive understanding of probability and an inclination towards complex mathematical models. If your mission is to write coding to answer complex probability problems, this book will prove to be invaluable.

Some probability problems are so difficult that they stump the smartest mathematicians. But even the hardest of these problems can often be solved with a computer and a Monte Carlo simulation, in which a random-number generator simulates a physical process, such as a million rolls of a pair of dice. This is what Digital Dice is all about: how to get numerical answers to difficult probability problems without having to solve complicated mathematical equations.Popular-math writer Paul Nahin challenges readers to solve twenty-one difficult but fun problems, from determining the odds of coin-flipping games to figuring out the behavior of elevators. Problems build from relatively easy (deciding whether a dishwasher who breaks most of the dishes at a restaurant during a given week is clumsy or just the victim of randomness) to the very difficult (tackling branching processes of the kind that had to be solved by Manhattan Project mathematician Stanislaw Ulam). In his characteristic style, Nahin brings the problems to life with interesting and odd historical anecdotes. Readers learn, for example, not just how to determine the optimal stopping point in any selection process but that astronomer Johannes Kepler selected his second wife by interviewing eleven women.The book shows readers how to write elementary computer codes using any common programming language, and provides solutions and line-by-line walk-throughs of a MATLAB code for each problem. Digital Dice will appeal to anyone who enjoys popular math or computer science.

"The problems are accessible but still realistic enough to be engaging, and the solutions in the back of the book will get you through any sticky spots. Writing your own versions of a few of these programs will acquaint you with a useful approach to problem solving and a novel style of thinking."--Brian Hayes, American Scientist"[T]he book is targeted at teachers and students of probability theory or computer science, as well as aficionados of recreational mathematics, but anyone who is familiar with the basics of probability and is capable of writing simple computer programs will have no problem working their way through this interesting and rewarding book."--Physics World"[An] enjoyable read, as [Nahin] writes clearly, with humour and is not afraid to include equations where necessary. Nahin spices the book throughout with factual and anecdotal snippets. Digital Dice will appeal to all who like recreational mathematics."--Alan Stevens, Mathematics Today"Digital Dice will appeal to recreational mathematicians who have even a limited knowledge of computer programming, and even nonprogrammers will find most of the problems entertaining to ponder."--Games Magazine"After the appearance of the author's earlier book on probability problems, [Duelling Idiots And Other Probability Puzzlers], one has high expectations for this book, and one is not disappointed. . . . The book will certainly have great appeal to all three of the targeted audiences."--G A. Hewer, Mathematical s"This well-written entertaining collection of twenty-one probability problems presents their origin and history as well as their computer solutions. . . . These problems could be used in a computer programming course or a probability course that includes Monte Carlo simulations."--Thomas Sonnabend, Mathematics Teacher"All of the books by Nahin and Havil are worth having, including others not listed here. I particularly recommend Digital Dice for the task of teaching undergraduates in mathematics the fundamentals of computation and simulation."--James M. Cargal, The UMAP JournalFrom the Back Cover "Paul Nahin's Digital Dice is a marvelous book, one that is even better than his Duelling Idiots. Nahin presents twenty-one great probability problems, from George Gamow's famous elevator paradox (as corrected by Donald Knuth) to a bewildering puzzle involving two rolls of toilet paper, and he solves them all with the aid of Monte Carlo simulations and brilliant, impeccable reasoning."--Martin Gardner "Nahin's new book is a rich source of tantalizing, real-life probability puzzles that require considerable ingenuity, and in most cases computer simulation, to solve. Though written to be delved into rather than read cover-to-cover, Digital Dice has an engaging and often witty style that makes each chapter a pleasurable read."--Keith Devlin, author of The Math Gene and The Math Instinct "Open this delightful, matchless book to be sucked into a treasure trove of wonderful conundrums of everyday life. Then, persuaded by straightforward Monte Carlo simulation exercises, emerge refreshed, invigorated, and fully satisfied by the unique experience of learning from Nahin's marvelous Digital Dice."--Joseph Mazur, author of The Motion Paradox "One of the strengths of Digital Dice is its wealth of historical information. Nahin carefully notes the origin of each problem and traces its history. He also tells a number of amusing anecdotes. I found all the problems interesting, especially Parrondo's Paradox. Anyone who has not met this paradox will be amazed by it! Digital Dice is a very enjoyable read."--Nick Hobson, creator of the award-winning Web site Nick's Mathematical Puzzles "By presenting problems for which complete theoretical analysis is difficult or currently

impossible, Digital Dice is a reminder that mathematics is often advanced by investigation, long before theoretical tools are brought to bear. The book's choice of problems is eclectic and interesting, and the explanations are clear and easy to read. A welcome addition to popular mathematical literature."--Julian Havil, author of Nonplussed!: Mathematical Proof of Implausible IdeasAbout the AuthorPaul J. Nahin is the author of many best-selling popular-math books, including "Chases and Escapes, Dr. Euler's Fabulous Formula, When Least is Best, Duelling Idiots and Other Probability Puzzlers", and "An Imaginary Tale" (all Princeton). He is professor emeritus of electrical engineering at the University of New Hampshire.