



Springer

1st
edition

2009, XXII, 728 p.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-0-387-98143-7

£ 99,99 | CHF 130,00 | 109,99 € |

120,99 € (A) | 117,69 € (D)

Available

Discount group

Standard (0)

Product category

Graduate/advanced undergraduate textbook

Series

Statistics and Computing

Other renditions

Softcover

ISBN 978-1-4614-2929-6

Mathematics : Probability Theory and Stochastic Processes

Gentle, James E.

Computational Statistics

- Provides a comprehensive coverage of modern computationally-intensive statistical methods
- Covers the topics in numerical analysis necessary for accurate and efficient implementation of the methods of computational statistics
- Emphasizes the unity of the methods of computational inference

Computational inference has taken its place alongside asymptotic inference and exact techniques in the standard collection of statistical methods. Computational inference is based on an approach to statistical methods that uses modern computational power to simulate distributional properties of estimators and test statistics. This book describes computationally-intensive statistical methods in a unified presentation, emphasizing techniques, such as the PDF decomposition, that arise in a wide range of methods. The book assumes an intermediate background in mathematics, computing, and applied and theoretical statistics. The first part of the book, consisting of a single long chapter, reviews this background material while introducing computationally-intensive exploratory data analysis and computational inference. The six chapters in the second part of the book are on statistical computing. This part describes arithmetic in digital computers and how the nature of digital computations affects algorithms used in statistical methods. Building on the first chapters on numerical computations and algorithm design, the following chapters cover the main areas of statistical numerical analysis, that is, approximation of functions, numerical quadrature, numerical linear algebra, solution of nonlinear equations, optimization, and random number generation. The third and fourth parts of the book cover methods of computational statistics, including Monte Carlo methods, randomization and cross validation, the bootstrap, probability density estimation, and statistical learning. The book includes a large number of exercises with some solutions provided in an appendix.

Order online at [springer.com/book sellers](https://www.springer.com/book sellers)

Springer Nature Customer Service Center GmbH

Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-book sellers@springernature.com



ISBN 978-0-387-98143-7 / BIC: PBT / SPRINGER NATURE: SCM27004

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**