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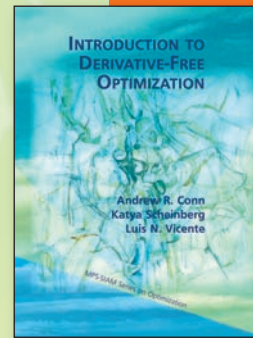
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Andrew R. Conn, Katya Scheinberg, and Luis N. Vicente

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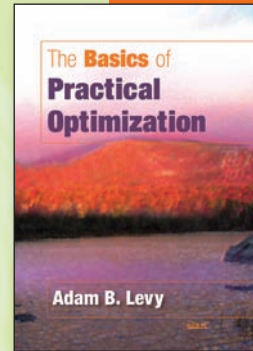


The Basics of Practical Optimization

Adam Levy

This textbook provides undergraduate students with an introduction to optimization and its uses for relevant and realistic problems. The only prerequisite for readers is a basic understanding of multivariable calculus because additional material, such as explanations of matrix tools, are provided throughout the text at relevant points and in a handy appendix. It presents step-by-step solutions for five prototypical examples that fit the general optimization model, along with instruction on using numerical methods to solve models and making informed use of the results.

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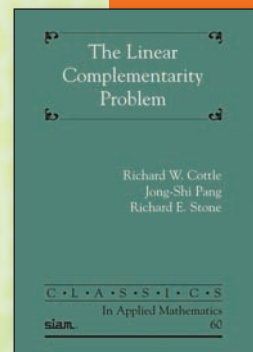
The Linear Complementarity Problem

Richard W. Cottle, Jong-Shi Pang, and Richard E. Stone

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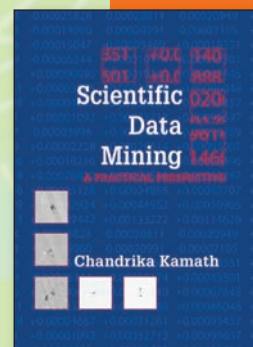


Scientific Data Mining: A Practical Perspective

Chandrika Kamath

Starting with a survey of analysis problems in different applications, this book identifies the common themes across these domains and uses them to define an end-to-end process of scientific data mining. This multi-step process includes tasks such as processing the raw image or mesh data to identify objects of interest; extracting relevant features describing the objects; detecting patterns among the objects; and displaying the patterns for validation by scientists. The book is intended for data mining practitioners and scientists interested in applying data mining techniques to their data sets.

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Ilse C. F. Ipsen

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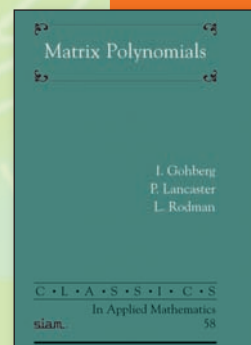
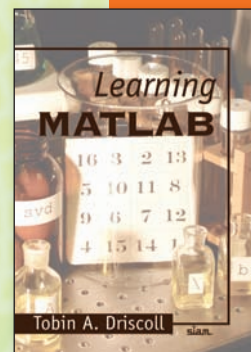
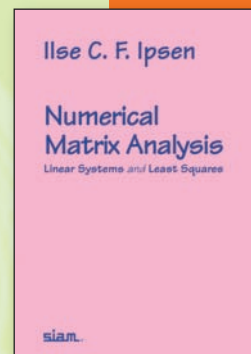
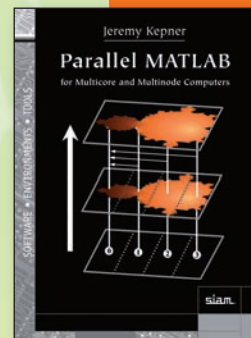
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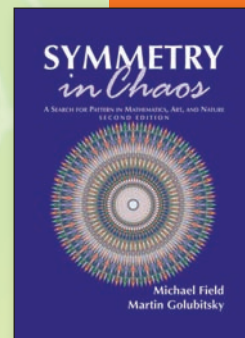
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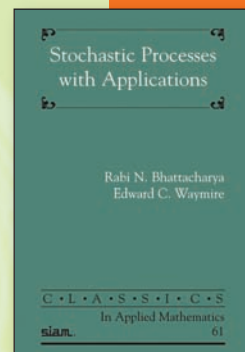
Rabi N. Bhattacharya and Edward C. Waymire

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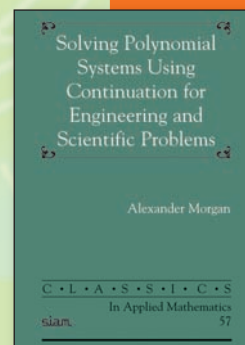


Solving Polynomial Systems Using Continuation for Engineering and Scientific Problems

Alexander Morgan

This book introduces the numerical technique of polynomial continuation, which is used to compute solutions to systems of polynomial equations. It is easy to understand, requiring only a knowledge of undergraduate-level calculus and simple computer programming. The book is also practical; it includes descriptions of various industrial-strength engineering applications and offers Fortran code for polynomial solvers on an associated Web page. It provides a resource for high-school and undergraduate mathematics projects.

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