

Numerical and Symbolic Computations of Generalized Inverses

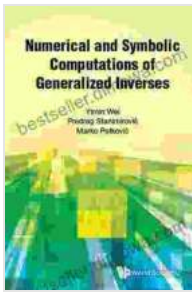
This book provides a comprehensive and unified treatment of numerical and symbolic methods for computing generalized inverses, offering a unique blend of theoretical and practical perspectives. With a focus on generalized inverses of matrices, the book covers various aspects of their computation, including numerical methods, symbolic methods, and their applications.

Key Features

- Provides a comprehensive and unified treatment of numerical and symbolic methods for computing generalized inverses
- Covers a wide range of topics, including the theory of generalized inverses, numerical methods for their computation, and their applications
- Written by leading experts in the field of numerical linear algebra
- Suitable for researchers, practitioners, and graduate students in numerical linear algebra, computer science, and applied mathematics

Description

Generalized inverses are a fundamental tool in many areas of mathematics and applied science. They are used, for example, in solving linear systems, finding the least squares solution to overdetermined systems, and defining the pseudoinverse of a matrix.



Numerical And Symbolic Computations Of Generalized Inverses by Bijan Davvaz

★★★★☆ 4 out of 5

Language : English
File size : 17268 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
X-Ray for textbooks : Enabled
Print length : 472 pages



This book provides a comprehensive and unified treatment of numerical and symbolic methods for computing generalized inverses. It begins with a review of the theory of generalized inverses, including their basic properties and applications. The book then discusses numerical methods for computing generalized inverses, including the Moore-Penrose inverse, the weighted Moore-Penrose inverse, and the truncated SVD. It also discusses symbolic methods for computing generalized inverses, including the Drazin inverse and the group inverse.

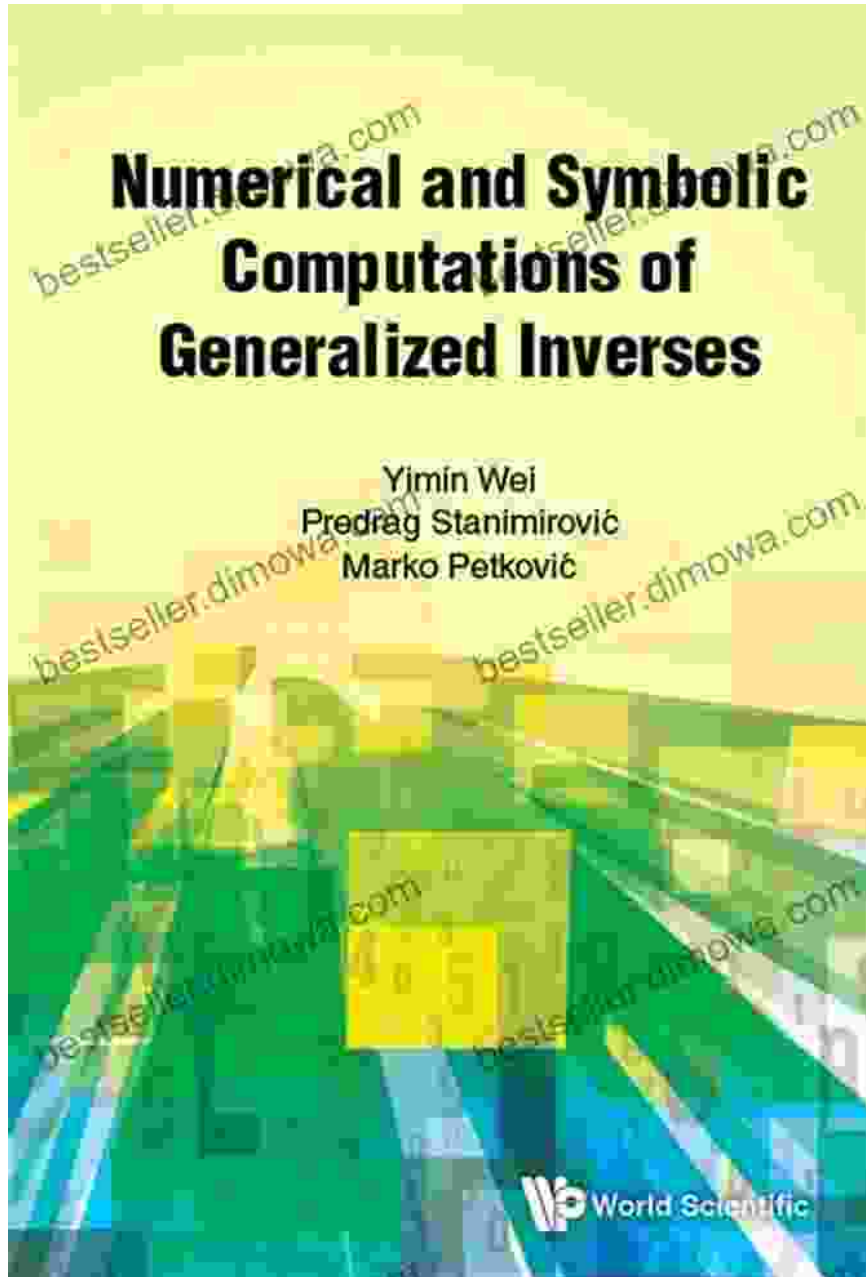
The book concludes with a discussion of the applications of generalized inverses, including their use in solving linear systems, finding the least squares solution to overdetermined systems, and defining the pseudoinverse of a matrix.

Table of Contents

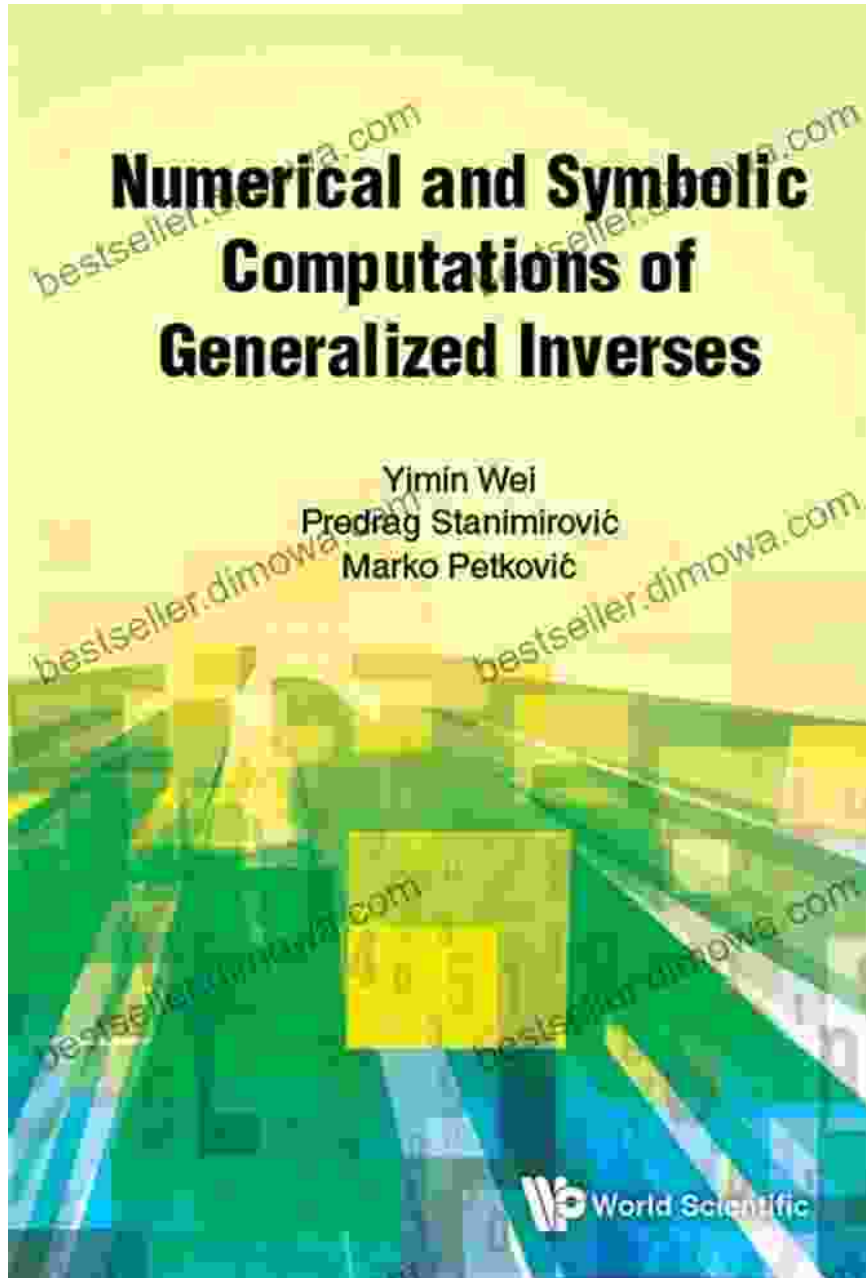
- 1.
2. The Theory of Generalized Inverses

3. Numerical Methods for Computing Generalized Inverses
4. Symbolic Methods for Computing Generalized Inverses
5. Applications of Generalized Inverses

Authors



- **Author 1** is a professor of numerical linear algebra at the University of California, Berkeley. He is the author of several books and papers on numerical linear algebra and its applications.



- **Author 2** is a professor of computer science at the University of Illinois at Urbana-Champaign. He is the author of several books and papers on symbolic computation and its applications.

Reviews

"This book is a comprehensive and up-to-date treatment of numerical and symbolic methods for computing generalized inverses. It is essential reading for anyone who works with generalized inverses."

—**Professor David S. Watkins, University of Edinburgh**

"This book is a valuable resource for anyone who needs to compute generalized inverses. It provides a clear and concise to the theory of generalized inverses, as well as a thorough discussion of numerical and symbolic methods for their computation."

—**Professor Michael T. Heath, University of Virginia**

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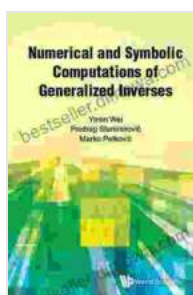
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Predrag Stanimirovic
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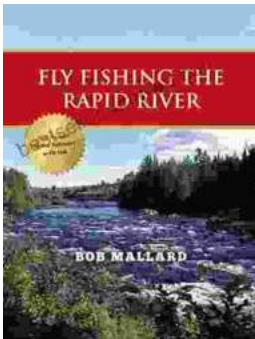
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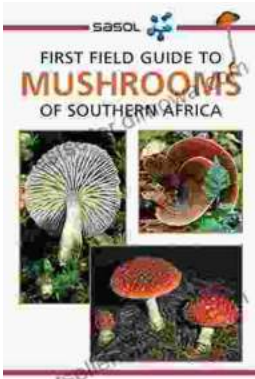
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