Matrix Algorithms in MATLAB

By Ong U. Routh

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Matrix Algorithms in MATLAB focuses on the MATLAB code implementations of matrix algorithms. The MATLAB codes presented in the book are tested with thousands of runs of MATLAB randomly generated matrices, and the notation in the book follows the MATLAB style to ensure a smooth transition from formulation to the code, with MATLAB codes discussed in this book kept to within 100 lines for the sake of clarity.

The book provides an overview and classification of the interrelations of various algorithms, as well as numerous examples to demonstrate code usage and the properties of the presented algorithms. Despite the wide availability of computer programs for matrix computations, it continues to be an active area of research and development. New applications, new algorithms, and improvements to old algorithms are constantly emerging.

- Presents the first book available on matrix algorithms implemented in real computer code
- Provides algorithms covered in three parts, the mathematical development of the algorithm using a simple example, the code implementation, and then numerical examples using the code
- Allows readers to gain a quick understanding of an algorithm by debugging or reading the source code
- Includes downloadable codes on an accompanying companion website, www.matrixalgorithmsinmatlab.com, that can be used in other software development

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Editorial Review

Review

"After a brief mathematical exposure, the algorithm is presented through the use of real computer codes. This ensures a better understanding of how an algorithm works, than by only studying their pseudo-codes as happens in classical algorithmic books." **--Zentralblatt MATH,** *Matrix Algorithms in MATLAB*

About the Author
In 1989, Dr. Ong U. Routh studied computational mechanics and obtained a PhD degree in Tsinghua University, China. In 1991, he worked as a researcher in Osaka University, Japan, developing finite element software for the numerical simulation of sheet metal forming. Since 1999, he has conducted many industrial software projects for the analysis of structures and multi-bodies systems. His career interest is in the research and implementation of numerical algorithms that is directly used to solve engineering problems, such as finite element analysis, multi rigid bodies analysis, differential equations and matrix computations.

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