Fundamentals of Matrix Analysis with Applications

Description: Providing comprehensive coverage of matrix theory from a geometric and physical perspective, Fundamentals of Matrix Analysis with Applications describes the functionality of matrices and their ability to quantify and analyze many practical applications. Written by a highly-qualified author team, the book presents tools for matrix analysis and is illustrated with extensive examples and software implementations.

Beginning with a detailed exposition and review of the Gauss elimination method, the authors maintain readers' interest with refreshing discussions regarding the issues of operation counts, computer speed and prevision, complex arithmetic formulations, parametrization of solutions, and the logical traps that dictate strict adherence to Gauss's instructions. The book heralds matrix formulation both as notational shorthand and a quantifier of physical operations such as rotations, projections, reflections, and the Gauss reductions. Inverses and eigenvectors are visualized first in an operator context before being addressed computationally. In addition to coverage on least squares theory's manifestations such as optimization, orthogonality, computational accuracy, and even function theory, Fundamentals of Matrix Analysis with Applications features:

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