

CHAPTER OVERVIEW

5: Gaussian Elimination

This article discusses the [Gaussian elimination](#) algorithm, one of the most fundamental and important numerical algorithms of all time. It is used to solve linear equations of the form

$$\mathbf{A}\vec{x} = \vec{b}, \quad (5.1)$$

where \mathbf{A} is a known $N \times N$ matrix, \vec{b} is a known vector of length N , and \vec{x} is an unknown vector of length N . The goal is to find \vec{x} . The Gaussian elimination algorithm is implemented by Scipy's `scipy.linalg.solve` function.

[5.1: The Basic Algorithm](#)

[5.2: Matrix Generalization](#)

[5.3: Pivoting](#)

[5.4: LU Decomposition](#)

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