Matrix Analysis Report

Generated by Matrix Class

January 30, 2025

1 Original Matrix

$$\begin{bmatrix} 2.0000 & 4.0000 & 6.0000 & 8.0000 \\ 1.0000 & 3.0000 & 0.0000 & 5.0000 \\ 1.0000 & 1.0000 & 6.0000 & 3.0000 \end{bmatrix}$$

2 Matrix Properties

This is a 3×4 matrix. Properties such as determinant, trace, inverse, and eigenvalues are only defined for square matrices.

3 Null Space Vectors

The basis vectors of the null space are:

$$\vec{v}_1 = \begin{bmatrix} 0.997 \\ 0.000 \\ -0.080 \\ -0.019 \end{bmatrix}$$

4 Matrix Norms

$$\text{Frobenius Norm} = 14.213$$
$$\text{Maximum Norm} = 8.000$$

5 Matrix Properties

- Symmetric: No
- Orthogonal: No
- Positive Definite: No
- Rank: 2 (Nullity: 2)

6 Statistical Analysis

6.1 Basic Statistics

$$\text{Mean} = 3.333$$
$$\text{Variance} = 5.722$$
$$\text{Sum} = 40.000$$

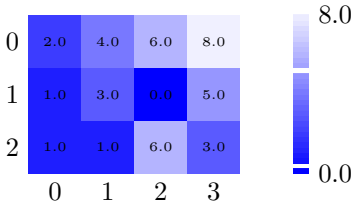
7 Matrix Decompositions

7.1 LU Decomposition

$$LU decomposition not possible : LU decomposition requires square matrix$$

8 Matrix Visualization

8.1 Heatmap



8.2 Row Means Distribution