

Matrix Decomposition

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1 Introduction

2 Determinant and Trace

Definition: (Determinant): Given a square matrix $\mathbf{A} \in \mathbb{R}^{n \times n}$

$$\det(\mathbf{A}) = \begin{vmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} \end{vmatrix} \quad (1)$$