



Positive Definite Matrices

1 Why

2 Definition

A matrix A is **positive definite** if all quadratic forms with the same vector on each side are positive.

2.1 Notation

Let $A \in \mathbf{R}^{d \times d}$. A is positive definite if for every $x \in \mathbf{R}^d$, $x^T A x > 0$.