Why

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Definition

The *data matrix* corresponding to a data set of n records which are length d tuples of real numbers is the n by d matrix whose ith row is the i element of the data set. Some authors refer to the data matrix as the *design matrix*.

Notation

Let $(a^1, \ldots, a^n)$ where $a^i \in \mathbf{R}^n$ for $i = 1, \ldots, n$. Let A be the $n \times d$ matrix whose rows are the a^i. Then A is the data matrix of $(a^1, \ldots, a^n)$. In other words,

$$A = \begin{bmatrix} (a^1)^\top \\ \cdots \\ (a^n)^\top \end{bmatrix}.$$

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[1] Future editions will retire this sheet.