Why

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Definition

A *dimension reducer* is a function $f : \mathbf{R}^m \rightarrow \mathbf{R}^d$ where $d < m$. The task of constructing a dimension reducer is sometimes called *representation learning* or *dimension reduction*.

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[1]Future editions will include.

Dimension Reducers

Real Functions

Intervals

Real Line

Real Order

Real Numbers   Rational Order

Integral Line   Rational Numbers

Integer Arithmetic

Natural Multiplicative Identity   Natural Additive Identity   Integer Products

Identity Elements   Arithmetic

Integer Sums   Integer Order   Natural Powers

Operations

Functions   Equivalence Relations   Integer Numbers   Natural Products   Comparisons

Natural Sums   Orders   Converse Relations

Recursion Theorem   Natural Order   Relations

Peano Axioms   Ordered Pair Projections

Natural Induction   Set Products

Natural Numbers   Ordered Pairs   Set Powers

Partitions   Intersection of Empty Set   Successor Sets   Unordered Triples

Set Symmetric Differences   Set Intersections   Pair Unions

Pair Intersections   Set Complements   Set Unions

Empty Set   Set Differences   Unordered Pairs

Geometry   Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Sets   Identities

Names

Letters   Objects

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