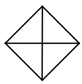

Definition

The differential mutual information between i and jth components of a multivariate density is the differential relative entropy of the i, jth marginal density with the product of the ith and jth marginal densities.

Notation

Let $f : \mathbf{R}^d \to \mathbf{R}$. Let d denote the differential relative entropy. The mutual information between i and j for $i, j = 1, \dots, d$ and $i \neq j$ is

$$d(f_{ij}, f_i f_j)$$


Differential Mutual Information
Differential Relative Entropy
Marginal Densities
Differential Cross Entropy
Differential Entropy
Multivariate Real Densities
Probability Densities
N-Dimensional Space
Real Integrals
Nonnegative Integrals
Simple Integrals
Mutual Information
Marginal Distributions
Measurable Functions
Relative Entropy
Joint Distributions
Measures
Discrete Entropy
Cross Entropy
Similarity Functions
Probability Distributions
Sigma Algebras
Logarithm
Metrics
Extended Real Numbers
Real Series
Distance
Exponential Function
Real Limits
Space Distance
Simple Functions
Outcome Probabilities
Absolute Value
Plane Distance
Real Functions
Interval Length
Intervals
Real Space
Real Line
Real Plane
Real Summation
Real Sequences
Real Order
Integral Line
Subset Algebras
Natural Summation
Sequences
Real Numbers
Rational Order
Geometry
Cardinality
Lists
Rational Numbers
Direct Products
Set Numbers
Integer Arithmetic
Finite Sets
Natural Additive Identity
Natural Multiplicative Identity
Integer Products
Family Operations
Equivalent Sets
Identity Elements
Arithmetic
Family Unions and Intersections
Function Inverses
Operations
Comparisons
Natural Powers
Integer Sums
Integer Order
Function Composites
Function Images
Families
Orders
Natural Products
Integer Numbers
Functions
Converse Relations
Natural Order
Equivalence Relations
Natural Sums
Relations
Recursion Theorem
Uncertain Outcomes
Ordered Pair Projections
Peano Axioms
Set Products
Subset Systems
Characteristic Functions
Natural Induction
Ordered Pairs
Set Powers
Generalized Set Dualities
Natural Numbers
Set Unions and Intersections
Unordered Triples
Intersection of Empty Set
Successor Sets
Set Dualities
Partitions
Set Symmetric Differences
Pair Unions
Set Intersections
Set Complements
Pair Intersections
Set Unions
Set Differences
Unordered Pairs
Empty Set
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects