Why

Definition

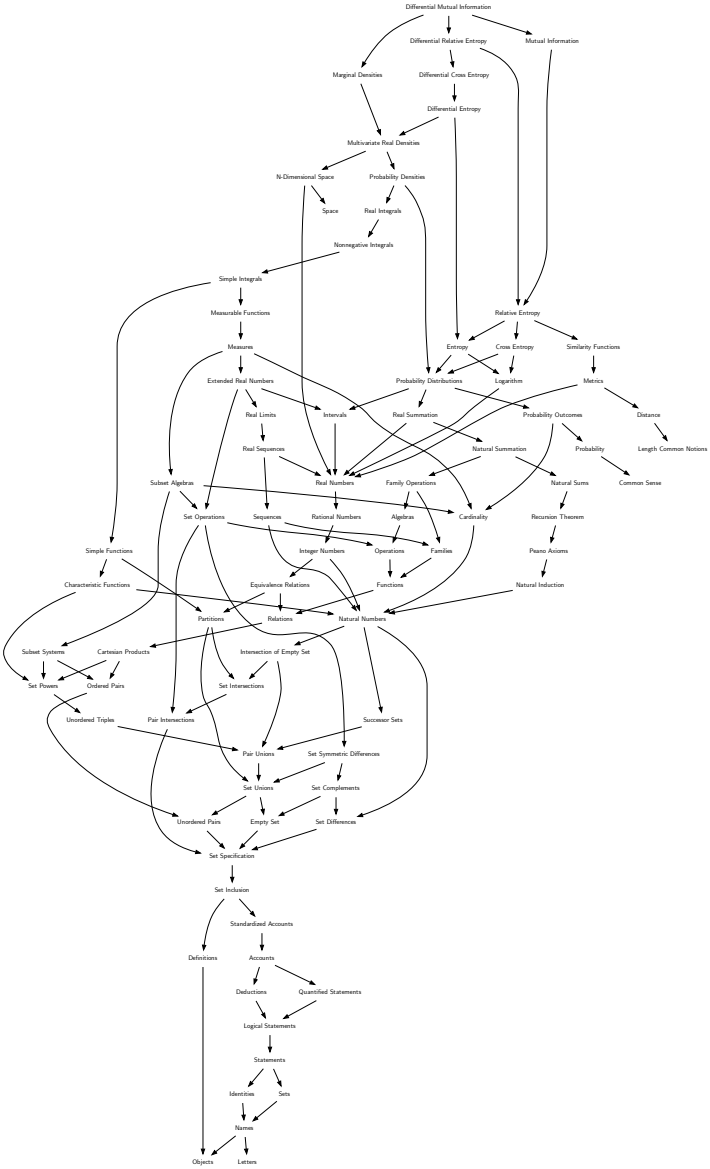
Notation

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 $i, j = 1, \ldots, d$ and $i \neq j$ is

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


Differential Mutual Information
Differential Relative Entropy
Mutual Information
Marginal Densities
Differential Cross Entropy
Differential Entropy
Multivariate Real Densities
N-Dimensional Space
Probability Densities
Space
Real Integrals
Nonnegative Integrals
Simple Integrals
Measurable Functions
Relative Entropy
Measures
Entropy
Cross Entropy
Similarity Functions
Extended Real Numbers
Probability Distributions
Logarithm
Metrics
Real Limits
Intervals
Real Summation
Probability Outcomes
Distance
Real Sequences
Natural Summation
Probability
Length Common Notions
Subset Algebras
Real Numbers
Family Operations
Natural Sums
Common Sense
Set Operations
Sequences
Rational Numbers
Algebras
Cardinality
Recursion Theorem
Simple Functions
Integer Numbers
Operations
Families
Peano Axioms
Characteristic Functions
Equivalence Relations
Functions
Natural Induction
Partitions
Relations
Natural Numbers
Subset Systems
Cartesian Products
Intersection of Empty Set
Set Powers
Ordered Pairs
Set Intersections
Unordered Triples
Pair Intersections
Successor Sets
Pair Unions
Set Symmetric Differences
Set Unions
Set Complements
Unordered Pairs
Empty Set
Set Differences
Set Specification
Set Inclusion
Standardized Accounts
Definitions
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Objects
Letters