Why

What is the differential mutual information between two components of a multivariate normal.

Result

Proposition **1.** *Let $g \sim \mathcal{N}(\mu, \Sigma)$ Then the differential entropy of g is*

$$\frac{1}{2} \ln \left((2\pi e)^d \det \Sigma \right)$$


Normal Differential Entropy
Multivariate Normals
Multivariate Real Densities
Positive Definite Matrices
Matric Determinants
Normal Densities
Matric Inverses
Probability Densities
Quadratic Forms
Real Matrices
Inverse Elements
Real Integrals
Matric-Matric Products
Matric Transpose
Symmetric Matrices
Identity Matrices
Matrices
Nonnegative Integrals
Real Vectors
Simple Integrals
Vectors
Exponential
Element Functions
Measurable Functions
N-Dimensional Space
Measures
Simple Functions
Space
Partitions
Extended Real Numbers
Characteristic Functions
Real Limits
Probability Distributions
Real Functions
Probability Outcomes
Real Sequences
Real Summation
Intervals
Real Square Roots
Subset Algebras
Probability
Sequences
Natural Summation
Fields
Real Numbers
Set Operations
Cardinality
Common Sense
Family Operations
Direct Products
Groups
Rational Numbers
Natural Square Roots
Injective Functions
Algebras
Natural Families
Natural Order
Natural Sums
Integer Numbers
Square Numbers
Function Composites
Operations
Subset Systems
Families
Natural Products
Zero
Squares
Set Symmetric Differences
Functions
Power Set
Natural Numbers
Equation Solutions
Set Unions
Relations
Set Intersections
Set Complements
Ordered Pairs
Equations
Unordered Pairs
Empty Set
Set Specification
Set Inclusion
Sentences
Set Equality
Sets
Identity
Objects