Why

[1]

Definition

The *correlation* between two integrable real-valued random variables with non-zero variance is the quotient of their covariance with the product of their standard deviations.

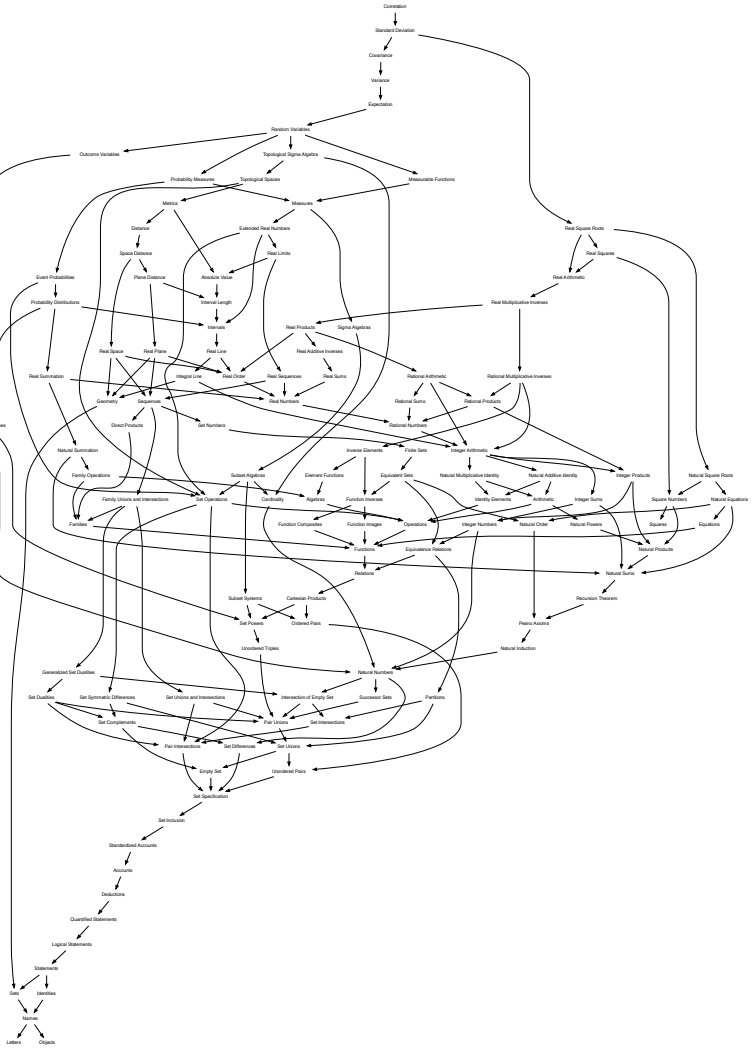
Two integrable real-valued random variables are *uncorrelated* if their covariance is zero. We can speak of uncorrelated random variables who have zero variance, although in this case their correlation is undefined.

Notation

Let f and g be two integrable real-valued random variables with fg integrable. Denote the correlation of f with g by $\mathsf{cor}(f, g)$. We defined it:

$$\mathsf{cor}(f, g) = \frac{\mathsf{cov}(f, g)}{\mathsf{std}\, f\, \mathsf{std}\, g}.$$

[1] Future editions will include this.


Correlation
Standard Deviation
Covariance
Variance
Expectation
Random Variables
Outcome Variables
Topological Sigma Algebra
Probability Measures
Topological Spaces
Measurable Functions
Metrics
Measures
Distance
Extended Real Numbers
Real Square Roots
Space Distance
Real Limits
Real Squares
Event Probabilities
Plane Distance
Absolute Value
Real Arithmetic
Probability Distributions
Interval Length
Real Multiplicative Inverses
Intervals
Real Products
Signed Algebras
Real Spaces
Real Plane
Real Line
Real Additive Inverses
Real Summation
Integral Line
Real Order
Real Sequences
Real Sums
Rational Arithmetic
Rational Multiplicative Inverses
Geometry
Sequences
Real Numbers
Rational Sums
Rational Products
Uncertain Outcomes
Direct Products
Set Numbers
Rational Numbers
Natural Summation
Inverse Elements
Finite Sets
Integer Arithmetic
Integer Products
Natural Square Roots
Family Operations
Subset Algebras
Element Functions
Equivalent Sets
Natural Multiplicative Identity
Natural Additive Identity
Family Unions and Intersections
Set Operations
Cardinality
Algebras
Function Inverses
Identity Elements
Arithmetic
Integer Sums
Square Numbers
Natural Equations
Families
Function Composites
Function Images
Operations
Integer Numbers
Natural Order
Natural Powers
Squares
Equations
Functions
Equivalence Relations
Natural Products
Relations
Natural Sums
Subset Systems
Cartesian Products
Recursion Theorem
Set Powers
Ordered Pairs
Peano Axioms
Unordered Triples
Natural Induction
Generalized Set Dualities
Natural Numbers
Set Dualities
Set Symmetric Differences
Set Unions and Intersections
Intersection of Empty Set
Successor Sets
Partitions
Pair Unions
Set Complements
Set Intersections
Pair Intersections
Set Differences
Set Unions
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects