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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 $\text{cor}(f, g)$. We defined it:

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

¹Future editions will include this.

