

MUTUAL INFORMATION

Why

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Definition

The mutual information of a joint distribution over two random variables is the entropy of the product of the marginal distributions relative to the joint distribution.

Notation

Let A and B be two non-empty sets. Let $p_{12}: A \times B \to \mathbb{R}$ be a distribution with marginal distributions $p_1: A \to \mathbb{R}$ and $p_2: B \to \mathbb{R}$. The mutual information of p is $d(p, p_1 p_2)$ where d denotes the relative entropy.

¹Future editions will include.

