Differential Mutual Information

1 Why

2 Definition

2.1 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.

2.2 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

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