Non-parametric estimation of information-theoretic quantities in entropic perspective

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Abstract

Introduced by Shannon, mutual information is a fundamental brick of information theory for its essential role in measuring association on non-ordinal alphabets. Mutual information being zero is a golden property as it indicates a probabilistic independent between the distributions. This article offers asymptotic chi-square distributions for the plug-in estimator and a non-parametric estimator of mutual information. The established distributions allow new tests of independence in entropic perspective.

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