

## Potential Statistical Evidence in Experiments and Renyi Information

دانشجو

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**Abstract.** Recently Habibi *et al.* (2006) defined a pre-experimental criterion for the potential strength of evidence provided by an experiment, based on Kullback-Leibler distance. In this paper, we investigate the potential statistical evidence in an experiment in terms of Renyi distance and compare the potential statistical evidence in lower (upper) record values with that in the same number of iid observations from the same parent distribution.

### 1 Introduction and Preliminaries

Let  $p(\mathbf{x})$  be the joint probability density function (pdf) of  $n$  iid observations from a distribution with pdf  $f(x)$ , obtained from the experiment  $\mathcal{E}$ , then the likelihood ratio

$$R_{\mathcal{E}}(\mathbf{x}) = \frac{p_1(\mathbf{x})}{p_0(\mathbf{x})}$$

measures the strength of evidence in  $\mathcal{E}$  favorable to the simple hypothesis  $H_1 : p = p_1$  against the simple hypothesis  $H_0 : p = p_0$ ,

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