Independence with Tensor Product Kernels[*]

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Abstract

Hilbert-Schmidt independence criterion (HSIC) is among the most popular and efficient approaches in data science to measure the dependence of random quantities. Thanks to its kernel-based foundations, HSIC is applicable on numerous domains; examples include documents, images, trees, graphs, time series, dynamical systems, sets or permutations. Despite its tremendous practical success, quite little is known about when HSIC characterizes independence. In this talk, I am going to provide a complete answer to this question, with conditions which are often easy to check in practice.

- Preprint: `https://arxiv.org/abs/1708.08157`