

Efficient correlation tests for high-dimensional data

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Abstract

A modified multivariate measure of correlation, composed of computationally efficient estimators, is suggested for high-dimensional low sample size scenario. The measure is subsequently used to construct a test of zero correlation for vectors of large dimension. Both the measure and the test are defined under a general multivariate model, with normality as a special case whence the test corresponds to that of independence. Simulations are used to demonstrate the size and power properties of the test, and comparison with distance correlation is shown.