

Final Year Projects

LE ZHOU

1 Rank-based indices for testing independence between two high-dimensional vectors

In this project, student will read a paper about three new tests of independence between two high-dimensional random vectors, based on rank-based indices. Under the null hypothesis of independence, the distributions of the proposed test statistics converge to normal ones if the dimensions diverge arbitrarily with the sample size. An explicit rate of convergence is further derived. Local power of the proposed tests is studied and compared to their relative efficiencies with two classic distance covariance/correlation based tests in high-dimensional settings. Student who participates in this project shall read the paper, understand details, and reproduce the code/test the method with simulation studies. Solid mathematical skills and adequacy in coding with R would be helpful.