

Multivariate kernel density estimation without curse of dimensionality

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Applications of multivariate kernel density estimators were so far restricted to three- or four-dimensional settings due to the well-known curse of dimensionality: convergence slows down as dimension increases. We propose an estimator that avoids the curse of dimensionality by using a simplified vine copula model. The estimator is consistent and its speed of convergence is independent of dimension. The theoretical results are supported by simulation experiments which illustrate the stunning performance compared with the classical multivariate kernel density estimator in more than two dimensions.

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