

Further Variance Reduction and Bias Elimination for Nonparametric Kernel

Estimation

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In nonparametric regression models, we propose a new estimator which is a linear combination of the local linear estimators at a sequence of specially setting points nearby the point of the estimation rather than just three points mentioned in Cheng *et al.* (2007). Our new estimator can significantly reduce the coefficient of the variance for the estimator to an arbitrarily small degree when the number of the setting points increases at an appropriate rate with the sample size. Besides this, the corresponding bias is also eliminated at the same time. Furthermore, a few simulations are studied to indicate our new estimator's relative efficiency when it compares with the existing nonparametric approaches.

Key Words: Bias eliminated, nonparametric estimator, variance reduction.