

# A Bootstrap Modification of the Multivariate Boosting Algorithm in KDE

Ishiekwene, C. C.<sup>1</sup>

## SUMMARY

In this paper, a modified multivariate boosting algorithm in Kernel Density Estimation, KDE, is presented. It has the advantages of being easily computed/implemented and avoids the rigors of computation of the weight function by using the Bootstrap in place of the Leave-One-Out function of Mazio and Taylor (2004). This new algorithm also achieves the same goal of bias reduction which in turn translates to a reduction in the mean integrated squared error (MISE). A Bivariate sample is used to illustrate this new algorithm and the results compared.

**Keywords:** Multivariate, Boosting, Bootstrap, Leave-one-out, Bias, MISE, Bivariate.

**AMS Classification:** 62F40, 62G08

<sup>1</sup>Department of Mathematics, Faculty of Physical Sciences, University of Benin, Nigeria.

e-mail: cycigar@yahoo.co.uk