

This article makes three contributions. First, we introduce a computationally efficient estimator for the component functions in additive nonparametric regression exploiting a different motivation from the marginal integration estimator of Linton and Nielsen. Our method provides a reduction in computation of order  $n$  which is highly significant in practice. Second, we define an efficient estimator of the additive components, by inserting the preliminary estimator into a backfitting algorithm but taking one step only, and establish that it is equivalent, in various senses, to the oracle estimator based on knowing the other components. Our two-step estimator is minimax superior to that considered in Opsomer and Ruppert, due to its better bias. Third, we define a bootstrap algorithm for computing pointwise confidence intervals and show that it achieves the correct coverage.