COLLOQUIUM

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Boosting for High-Dimensional Nonparametric Additive Models

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Abstract

In regression analysis, information on structures of the data can be effectively utilized in regression analysis. In this paper, we discuss how to integrate the sparsity and the grouping structure of the predictor variables to improve identification of relevant groups of variables and to improve the prediction performance. We propose a boosting method to perform nonparametric regression and feature selection for high-dimensional group additive models. We investigate the learning theory for the proposed boosting algorithm, and illustrate its finite sample performance via both simulated and real data.

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