Title: **Bayesian Backfitting**

Author(s): **Trevor Hastie and Robert Tibshirani**

Technical Report number (Dept. of Statistics, Stanford Univ.): **197**

Date: **May 1998**

Abstract:

We propose general procedures for posterior sampling from additive and generalized additive models, with applications to non-parametric, semi-parametric and mixed models. One chooses a linear operator S_j for each predictor, and the algorithm requires only the application of S_j and $S_j^{1/2}$. Both of these can be done applied efficiently ($O(n)$ operations) for many popular operators. The procedure is a stochastic generalization of the backfitting algorithm for fitting additive models.