

# Bayesian variable selections for probit model with componentwise gibbs samplers

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## Abstract

For variable selection to binary response regression, stochastic search variable selection and Bayesian Lasso have recently been popular. However, these two variable selection methods suffer from heavy computation burden caused by hyperparameter tuning and by matrix inversions, especially when the number of covariates is large. Therefore, this article incorporates the componentwise Gibbs sampler for Bayesian stochastic search variable selection and Bayesian lasso to avoid matrix inversion. With the proposed automatic hyperparameter tuning, computation time for variable selection can be reduced. In addition, performance of the proposed methods is investigated by a simulation study and a real data set.