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Statistics > Methodology

Mean field variational Bayesian inference for support vector machine classification

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(Submitted on 13 May 2013)

A mean field variational Bayes approach to support vector machines (SVMs) using the latent variable representation on Polson & Scott (2012) is presented. This representation allows circumvention of many of the shortcomings associated with classical SVMs including automatic penalty parameter selection, the ability to handle dependent samples, missing data and variable selection. We demonstrate on simulated and real datasets that our approach is easily extendable to non-standard situations and outperforms the classical SVM approach whilst remaining computationally efficient.

Submission history

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Which authors of this paper are endorsers?