



# BSVM: A Banded Support Vector Machine

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We describe a novel binary classification technique called Banded SVM (B-SVM). In the standard C-SVM formulation of Cortes et al. (1995), the decision rule is encouraged to lie in the interval  $[1, \infty]$ . The new B-SVM objective function contains a penalty term that encourages the decision rule to lie in a user specified range  $[\rho_1, \rho_2]$ . In addition to the standard set of support vectors (SVs) near the class boundaries, B-SVM results in a second set of SVs in the interior of each class.

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