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Support Vector Regression with Weighted Least Absolute Deviations

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Abstract : Least squares support vector machine (LS-SVM) is a penalized regression which considers both fitting and generalization ability of a model. However, the squared loss function is very sensitive to even single outlier. We proposed a weighted absolute deviation loss function for the robustness of the estimates in least absolute deviation support vector machine. The proposed estimates can be obtained by a quadratic programming algorithm. Numerical experiments on simulated datasets show that the proposed algorithm is competitive in view of robustness to outliers.

Keywords : least absolute deviation, quadratic programming, robustness, support vector machine, weight
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