

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**Consensus proximal support vector
machine for classification problems
with sparse solutions**

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会议室

Abstract:

The support vector machine is one of the most popular classification tools in machine learning. In this paper, based on the methods for binary classification, we establish two consensus proximal support vector machines (PSVMs) models. The first one is to separate the objective functions into the individual convex functions by using the number of the sample points of the training set. The constraints contain two types of the equations with global variables and local variables corresponding to the consensus points and the sample points, respectively. To get sparse classifier, the objective function in the second model is added l_1 term which yields a sparse classifier. The consensus PSVMs are solved by the alternating direction method of multipliers and a specialized interior-point method, respectively. Furthermore, they are implemented by the real-world data taken from the University of California, Irvine Machine Learning Repository (UCI Repository) and are compared with the existed models such as l_1 -PSVM, l_p -PSVM, GEPSVM, PSVM and SVM-Light. Numerical results show that our models outperform to others with the classification accuracy and the sparse classifier.

欢迎大家参加!