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An improved support vector machine with soft decision-making boundary. (English)

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Summary: This paper proposes an improved support vector machine (SVM) classifier by introducing a soft decision-making boundary for solving real-world classification problem. The soft decision-making boundary contains two parameters describing the offset and the shape, which are estimated automatically from the distribution of training samples around the boundary via a distribution of belief degree in the decision value domain. The SVM with soft decisionmaking boundary increases classification accuracy by reducing the effects of data unbalance and noises in the realworld data. Simulation results show the effectiveness of the proposed approach.

For the entire collection see [Zbl 1154.68012].

MSC:

- 68T05 Learning and adaptive systems in artificial intelligence
- 68T20 Problem solving in the context of artificial intelligence (heuristics, search strategies, etc.)

Cited in 1 Document

Keywords:

SVM; unbalanced data; real-world data classification; soft decision-making boundary