



NEW INTELLIGENT CLASSIFICATION METHOD BASED ON IMPROVED MEB ALGORITHM

Yongqing Wang, Lei Liu

Department of Computer Science and Applications,
Zhengzhou Institute of Aeronautical Industry Management,
Zhengzhou 450015, China

Email: wyq-yongqing@163.com

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Abstract- We present a simple approximate algorithm to compute the Minimum Enclosing Ball (MEB) of training samples in high dimensional Euclidean space. We prove theoretically that the proposed algorithm converges to the optimum within any precision quickly. Compared to popular MEB algorithms, it has the competitive performances on both training time and accuracy. Besides, the proposed algorithm does not need any extra requirement on kernels, it can be linked with extensive kernel methods, consequently. We also use the proposed algorithm to handle Binary Classification, Multi-class Classification, and Image Clustering problems. Experiments on both synthetic and real-world data sets demonstrate the validity of the algorithm we proposed.

Index terms: Minimum enclosing ball, approximate algorithm, kernel methods, classification, image clustering.