

Instance Selection for MI-Support Vector Machines

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Abstract : Support vector machine (SVM) is a well-known algorithm in machine learning due to its superior performance, and it also functions well in multiple-instance (MI) problems. Our study proposes a schematic algorithm to select instances based on Hausdorff distance, which can be adapted to SVMs as input vectors under the MI setting. Based on experiments on five benchmark datasets, our strategy for adapting representation outperformed in comparison with original approach. In addition, task execution times (TETs) were reduced by more than 80% based on MissSVM. Hence, it is noteworthy to consider this representation adaptation to SVMs under MI-setting.

Keywords : support vector machine, Margin, Hausdorff distance, representation selection, multiple-instance learning, machine learning

Conference Title : ICMLC 2024 : International Conference on Machine Learning and Cybernetics

Conference Location : Bali, Indonesia

Conference Dates : July 15-16, 2024