DAGSVM multiclass algorithm based on SVM binary classifiers with 1vsAll approach to the slate tile classification problem

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Abstract

In this study, we propose a new methodology based on the construction of Support Vector Machines binary classifiers and a one-against-all approach supported on the use of Direct Acyclic Graphs as a classification strategy. The new method is more economic in computational terms, because it requires the resolution of a lower number of binary classification problems. Thus, this new approach is validated with different databases from the UCI Machine Learning Repository, obtaining results that demonstrate the better performance of the model against resolution techniques based on one-against-one approach and Direct Acyclic Graphs. This new algorithm has been developed to solve the slate tiles classification problem, obtaining more favorable results than with the other validated techniques.

Keywords