

A Directed Acyclic Graph Based Approach to Multi-Class Ensemble Classification

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Abstract

In this paper a novel, ensemble style, classification architecture is proposed as a solution to the multi-class classification problem. The idea is to use a non-rooted Directed Acyclic Graph (DAG) structure which holds a classifier at each node. The potential advantage offered is that a more accurate and reliable classification can be obtained when the classification process is conducted progressively, starting with groups of class labels that are repeatedly refined into smaller groups until individual labels are arrived at. Reported experimental results indicated that the proposed DAG classification model can improve classification performance, in terms of average accuracy and average AUC (Area Under the receiver operating Curve), in the context of some data sets.