Oblique Decision Tree Learning Approaches - A Critical Review

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Abstract

Decision tree classification techniques are currently gaining increasing impact especially in the light of the ongoing growth of data mining services. A central challenge for the decision tree classification is the identification of split rule and correct attributes. In this context, the article aims at presenting the current state of research on different techniques for classification using oblique decision tree. A variation to the traditional approach is the called oblique decision tree or multivariate decision tree, which allows multivariate tests in its non-terminal nodes. Univariate trees can only perform axis-parallel splits, whereas Oblique decision trees can model the decision boundaries that are oblique to attribute axis. The majority of these decision tree induction algorithms performs a top-down growing tree strategy and relay on an impurity-based measure for splitting nodes criteria. In this context, the article aims at presenting the current state of research on different techniques for Oblique Decision Tree classification. For this, the paper analyzes various traditional Multivariate and Oblique Decision Tree algorithms CART, OC1 as well as standard SVM, GDT implementation.

References
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Index Terms

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Keywords

oblique decision tree CART OC1 SVM GDT