An overview for regression tree

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Abstract

Classification and regression tree is a non-parametric methodology. CART is a methodology that divides populations into meaningful subgroups which will allow the identification of groups of interest. CART is classification method which uses a large data to construct decision trees. Depending on available information about the dataset, classification tree or regression tree can be constructed. The first part of the paper describes fundamental principles of tree construction, different splitting algorithms, and pruning procedures. Second part of the paper answers the questions why should we use or should not use the CART method. Advantages and weaknesses of the method are discussed and tested in detail. In the last part, CART is applied to real data, using the statistical software R. On this paper some graphical and plotting tools are presented. The Regression Tree is a classification tree with a continuous dependent variable in which independent variables receive continuous values or discrete values with an error prediction that is computed with squares of differences between the observed and predicted values. At the beginning of this paper, some basic principles are presented in the construction of a classification / regression tree, while after that a detailed description of the distribution is made, making the theoretical generalization, and giving in detail the algorithms that are used in distribution as well as using a concrete examples, where different algorithms apply to distribute to a database. At the end are detailed analyses for regression trees by making appropriate theoretical generalizations and providing detailed information on how to use different algorithms to prune the overcrowded tree to reach to the final tree.

Keywords: regression tree, overview, classification.

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