

Algorithm **ConstructRegressionTree**(Examples:E , Targetattribute: t, Attr: A)

Examples are the training examples.

Targetattribute is the attribute whose value is to be predicted by the tree.

Attributes is a list of other attributes

Returns a regression tree that minimizes sum squared error

begin

For each attribute 'a' in the attribute list A

do

Let $E0 = \{ (x_k, t_k) \text{ in } E \text{ such that } x_k[a] = 0 \}$

Let $E1 = \{ (x_k, t_k) \text{ in } E \text{ such that } x_k[a] = 1 \}$

μ_0 = mean value of t_k in $E0$

μ_1 = mean value of t_k in $E1$

$SSE0$ = sum over all elements in $E0$, $(t_k - \mu_0)^2$

$SSE1$ = sum over all elements in $E1$, $(t_k - \mu_1)^2$

Let $Score[a] = SSE0 + SSE1$

done

$best_a = \text{argmin } Score[a]$, over all 'a' in A

Let $E0 = \{ (x_k, t_k) \text{ in } E \text{ such that } x_k[best_a] = 0 \}$

Let $E1 = \{ (x_k, t_k) \text{ in } E \text{ such that } x_k[best_a] = 1 \}$

Let LeftChild = ConstructRegressionTree($E0$, t, A - {best_a})

Let RightChild = ConstructRegressionTree($E1$, t, A - {best_a})

Return a tree whose root is best_a, and left subtree is LeftChild and right subtree is Rightchild

end