

Tree-Learning (TR, Target, Attr)

TR: training examples

Target: target attribute

Attr: set of descriptive attributes

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Create a Root node for the tree.

If TR have the same target attribute value  $t_i$ ,

Then Return the single-node tree, i.e. Root, with target attribute =  $t_i$

If Attr = empty (i.e. there is no descriptive attributes available),

Then Return the single-node tree, i.e. Root, with most common value of Target in TR

Otherwise

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Select attribute A from Attr that best classify TR based on an entropy-based measure

Set A the attribute for Root

For each legal value of A,  $v_i$ , do

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Add a branch below Root, corresponding to  $A = v_i$

Let  $TR_{v_i}$  **be the subset of TR that have**  $A = v_i$

If  $TR_{v_i}$  is empty,

Then add a leaf node below the branch with target value = most common value of Target in  $TR_{v_i}$

Else below the branch, add the subtree learned by

Tree-Learning( $TR_{v_i}$ , Target, Attr-{A})

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Return (Root)

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