

### **1-{"gini", "entropy", "log\_loss"}, default="gini"**

The function to measure the quality of a split. Supported criteria are "gini" for the Gini impurity and "log\_loss" and "entropy" both for the Shannon information gain, see [Mathematical formulation](#).

### entropy is preferred

### **2-max\_depthint, default=None**

The maximum depth of the tree. If None, then nodes are expanded until all leaves are pure or until all leaves contain less than min\_samples\_split samples.

### **3-min\_samples\_leafint or float, default=1**

The minimum number of samples required to be at a leaf node. A split point at any depth will only be considered if it leaves at least min\_samples\_leaf training samples in each of the left and right branches. This may have the effect of smoothing the model, especially in regression.

- If int, then consider min\_samples\_leaf as the minimum number.
- If float, then min\_samples\_leaf is a fraction and  $\text{ceil}(\text{min\_samples\_leaf} * n\_samples)$  are the minimum number of samples for each node.

### **4-max\_leaf\_nodesint, default=None**

Grow a tree with max\_leaf\_nodes in best-first fashion. Best nodes are defined as relative reduction in impurity. If None then unlimited number of leaf nodes.

### **5-min\_impurity\_decreasefloat, default=0.0**

A node will be split if this split induces a decrease of the impurity greater than or equal to this value.