

A. Parameters () of the decision tree-based meta-classifier used to predict morbid and druggable genes (based on the graphic user interface of WEKA software package) :**

Meta-classifier: Vote

**classifiers: 8 weka.classifiers.Classifier (decision tree classifiers with bootstrap aggregating [bagging] approach as described below)

**combinationRule: Average of Probabilities

**debug: False

**seed: 1

-- We applied the class "weka.classifiers.meta.Bagging" (bootstrap aggregating [bagging]) approach to each classifier (see details in the section "Methods" in paper) with the following parameters:

**bagSizePercent: 100

**calcOutOfBag: false

**classifier: one of the 7 decision tree classifiers whose parameters are described below.

**debug: False

**numIterations: 20

**seed: 1

Parameters of the 7 bagged decision tree classifiers:

1. REPTree

**debug: False

**maxDepth: -1

**minNum: 2.0

**minVarianceProp: 0.0010

**noPruning: False

**numFolds: 3

**seed: 1

2. Random Tree

**KValue: 1

**debug: false

**maxDepth: 0

**minNum: 1.0

**seed: 1

3. Random Forest

**debug: False

**maxDepth: 0

**numFeatures: 0

**numTrees: 10

seed: 1

4. J48

**binarySplits: False

**confidenceFactor: 0.5

**debug: False

**minNumObj: 32

**numFolds: 3

**reducedErrorPruning: False

**saveInstanceData: False

**seed: 1

**unpruned : False

**useLaplace: False

5. Best-first decision tree (BFtree)

**debug: False

**heuristic: True

**minNumObj: 32

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**numFoldsPruning: 5
**pruningStrategy: Post-pruning
**seed: 1
**sizePer: 1.0
**useErrorRate: True
**useGini: True
**useOneSE: False
```

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6. Logistic model tree (LMT)
**convertNominal: False
**debug: False
**errorOnProbabilities: False
**fastRegression: True
**minNumInstances: 15
**numBoostingIterations: -1
**splitOnResiduals: False
**useAIC: False
**weightTrimBeta: 0.0
```

```
7. Alternating decision tree (ADtree)
**debug: False
**numOfBoostingIterations: 25
**randomSeed: 0
**saveInstanceData: False
**searchPath: Expand the heaviest path
```

B. Parameters () of the J48 classifier used to generated the decision trees for determination of cellular rules for morbidity and druggability (based on the graphic user interface of WEKA software package):**

```
**binarySplits: False
** confidenceFactor: 0.5
**debug: False
**minNumObj: 128 (morbidity) or 32 (druggability)
**numFolds: 3
**reducedErrorPruning: False
**saveInstanceData: False
**seed: 1
**unpruned : False
**useLaplace: False
```