

# Default Values of Hyperparameters in sklearn for common ML Algorithms

## Naive Bayes (GaussianNB):

priors: None  
var\_smoothing: 1e-09

## Logistic Regression:

penalty: 'l2'  
dual: False  
C: 1.0  
fit\_intercept: True  
intercept\_scaling: 1  
class\_weight: None  
random\_state: None  
solver: 'lbfgs'  
max\_iter: 100  
multi\_class: 'auto'  
verbose: 0  
warm\_start: False  
n\_jobs: None  
l1\_ratio: None

## SVM (SVC):

C: 1.0  
kernel: 'rbf'  
degree: 3  
gamma: 'scale'

coef0: 0.0  
shrinking: True  
probability: False  
tol: 1e-3  
cache\_size: 200  
class\_weight: None  
verbose: False  
max\_iter: -1  
decision\_function\_shape: 'ovr'  
break\_ties: False  
random\_state: None

## Decision Tree:

criterion: 'gini'  
splitter: 'best'  
max\_depth: None  
min\_samples\_split: 2  
min\_samples\_leaf: 1  
min\_weight\_fraction\_leaf: 0.0  
max\_features: None  
random\_state: None  
max\_leaf\_nodes: None  
min\_impurity\_decrease: 0.0  
class\_weight: None  
ccp\_alpha: 0.0

## Bagging (with DecisionTree):

base\_estimator: None  
(Defaults to DecisionTree)  
n\_estimators: 10

max\_samples: 1.0  
max\_features: 1.0  
bootstrap: True  
bootstrap\_features: False  
oob\_score: False  
warm\_start: False  
n\_jobs: None  
random\_state: None  
verbose: 0

## Random Forest:

n\_estimators: 100  
criterion: 'gini'  
max\_depth: None  
min\_samples\_split: 2  
min\_samples\_leaf: 1  
min\_weight\_fraction\_leaf: 0.0  
max\_features: 'auto'  
max\_leaf\_nodes: None  
min\_impurity\_decrease: 0.0  
bootstrap: True  
oob\_score: False  
n\_jobs: None  
random\_state: None  
verbose: 0  
warm\_start: False  
class\_weight: None  
ccp\_alpha: 0.0  
max\_samples: None

### Extra Trees:

(Most parameters are the same as Random Forest)

bootstrap: False

Ada Boosting:

base\_estimator: None  
(Defaults to DecisionTree with max\_depth=1)

n\_estimators: 50

learning\_rate: 1.0

algorithm: 'SAMME.R'

random\_state: None

### Gradient Boosting:

loss: 'deviance'

learning\_rate: 0.1

n\_estimators: 100

subsample: 1.0

criterion: 'friedman\_mse'

min\_samples\_split: 2

min\_samples\_leaf: 1

min\_weight\_fraction\_leaf: 0.0

max\_depth: 3

min\_impurity\_decrease: 0.0

max\_features: None

verbose: 0

max\_leaf\_nodes: None

warm\_start: False

presort: 'deprecated'

validation\_fraction: 0.1

n\_iter\_no\_change: None

tol: 1e-4

ccp\_alpha: 0.0

random\_state: None

### KNN:

n\_neighbors: 5

weights: 'uniform'

algorithm: 'auto'

leaf\_size: 30

p: 2

metric: 'minkowski'

metric\_params: None

n\_jobs: None

### Neural Networks (MLPClassifier):

hidden\_layer\_sizes: (100,)

activation: 'relu'

solver: 'adam'

alpha: 0.0001

batch\_size: 'auto'

learning\_rate: 'constant'

learning\_rate\_init: 0.001

power\_t: 0.5

max\_iter: 200

shuffle: True

random\_state: None

tol: 1e-4

verbose: False

warm\_start: False

momentum: 0.9

nesterovs\_momentum: True

early\_stopping: False

validation\_fraction: 0.1

beta\_1: 0.9

beta\_2: 0.999

epsilon: 1e-8

n\_iter\_no\_change: 10

max\_fun: 15000