

# Python Random Forest

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## Simple Random Forest

```
from sklearn.ensemble import RandomForestClassifier  
model = RandomForestClassifier()
```

## # Train the model

```
clf = model.fit(X, y)  
results = clf.predict(Z)
```

## Get Probabalistic Results

```
clf = model.fit(X, y)  
results = clf.predict_proba(Z)
```

## Set Random Seed For Repeatable Results

```
import numpy as np  
np.random.seed(12345)
```

## Increase The Number Of Trees to 100

```
model = RandomForestClassifier(n_estimators=100)
```

## Get The Out Of Bag Error

```
model = RandomForestClassifier(oob_score=True)  
clf = model.fit(X,y)  
oob_score = clf.oob_score_
```

Limit The Trees By Number Of Splits, Minimum Size To Split, and Minimum Leaf Size to Keep A Split

```
model = RandomForestClassifier(max_depth = 5,  
                               min_samples_split = 6,  
                               min_samples_leaf = 3)
```

Set Max Features / Maximum Percentages Of Features to Examine For Split

```
model = RandomForestClassifier(max_features = 10)  
model = RandomForestClassifier(max_features = .3)
```