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Python 3.8.10 (default, Sep 28 2021, 16:10:42)
[GCC 9.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import numpy as np
>>> import pandas as pd
>>> import scipy
>>> import sklearn
>>> from sklearn.datasets import load_boston
>>> from sklearn.model_selection import train_test_split
>>>
>>> from sklearn.tree import DecisionTreeRegressor
>>> from sklearn.metrics import mean_squared_error
>>> boston = load_boston()
>>> X = boston.data
>>> Y = boston.target
>>> X_train, X_test, y_train, y_test = train_test_split(X, Y, test_size=0.25, random_state=51)
>>> X.shape, Y.shape
((506, 13), (506,))
>>> rg = DecisionTreeRegressor(max_depth=5, random_state=42)
>>> def gbm_predict(X):
...     return [sum([coeff * algo.predict([x])[0] for algo, coeff in zip(base_algorithms_list,
coefficients_list)])
...         for x in X]
...
>>> base_algorithms_list = []
>>> coefficients_list = []
>>> def get_grad():
...     return [y - a for a, y in zip(gbm_predict(X_train), y_train)]
...
>>> for i in np.arange(0, 50):
...     rg = DecisionTreeRegressor(random_state=42, max_depth=5)
...     rg.fit(X_train, get_grad())
...     base_algorithms_list.append(rg)
...     coefficients_list.append(0.9)
...
DecisionTreeRegressor(ccp_alpha=0.0, criterion='mse', max_depth=5,
                      max_features=None, max_leaf_nodes=None,
                      min_impurity_decrease=0.0, min_impurity_split=None,
                      min_samples_leaf=1, min_samples_split=2,
                      min_weight_fraction_leaf=0.0, presort='deprecated',
                      random_state=42, splitter='best')
[[ADecisionTreeRegressor(ccp_alpha=0.0, criterion='mse', max_depth=5,
                      max_features=None, max_leaf_nodes=None,
                      min_impurity_decrease=0.0, min_impurity_split=None,
                      min_samples_leaf=1, min_samples_split=2,
                      min_weight_fraction_leaf=0.0, presort='deprecated',
                      random_state=42, splitter='best')
```

Остальное доделаю и скину сюда же в файл и в ветку на гидхабе.