

Teams and Channels | General | x Machine Learning - Colab x ML practice - Colab x XGBoost Parameters — xgboost x +

colab.research.google.com/drive/1DlDhy_mW7lfh5lQdniTEAqy7GJc1dCp9#scrollTo=ZMOF6C_41ziy

ML practice

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Files

- sample_data
- Travel.csv
- cardexho_imputed.csv

15411 rows x 12 columns

Next steps: [View recommended plots](#) [New interactive sheet](#)

```
[37] from sklearn.preprocessing import OneHotEncoder
      from sklearn.compose import ColumnTransformer
      ll=b.select_dtypes(exclude='object').columns
      kk=['seller_type','fuel_type','transmission_type']

[38] from sklearn.preprocessing import StandardScaler
      g=StandardScaler()
      h=OneHotEncoder(drop='first')
      f=ColumnTransformer([('OneHotEncoder',h,kk),('StandardScaler',g,ll)],remainder='passthrough')

[39] b=f.fit_transform(b)

[40] x_train,x_test,y_train,y_test=train_test_split(b,c,test_size=0.3)

[41] from sklearn.ensemble import RandomForestRegressor
      from xgboost import XGBRegressor
```

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Code

```
[41] from sklearn.ensemble import RandomForestRegressor
from xgboost import XGBRegressor
from sklearn.linear_model import LinearRegression,Lasso,Ridge
from sklearn.neighbors import KNeighborsRegressor
from sklearn.tree import DecisionTreeRegressor
from sklearn.metrics import r2_score,mean_squared_error,mean_absolute_error

[42] import numpy as np
def create(z,y):
    g=mean_squared_error(z,y)
    h=mean_absolute_error(z,y)
    i=r2_score(z,y)
    j=np.sqrt(mean_squared_error(z,y))
    return j,h,i

[44] s={'RandomForestRegressor':RandomForestRegressor(),'XGBRegressor':XGBRegressor(),'LinearRegression':LinearRegression(),
    'KNeighborsRegressor':KNeighborsRegressor(),'DecisionTreeRegressor':DecisionTreeRegressor(),'Lasso':Lasso(),'Ridge':Ridge()}

[45] for v in range(len(list(s))):
    u=list(s.values())[v]
    u.fit(x_train,y_train)
    aa=u.predict(x_train)
    bb=u.predict(x_test)
    cc.dd,ee=create(v_train,aa)
```

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```
for v in range(len(list(s))):
    u=list(s.values())[v]
    u.fit(x_train,y_train)
    aa=u.predict(x_train)
    bb=u.predict(x_test)
    cc,dd,ee=create(y_train,aa)
    ff,gg,hh=create(y_test,bb)
    print(list(s.keys())[v])
    print(cc)
    print(dd)
    print(ee)
    print(ff)
    print(gg)
    print(hh)
```

RandomForestRegressor
144762.96131369044
35024.58754221016
0.9751752154614022
204810.2566210973
88654.43909942542
0.9396448616941485
XGBRegressor
78466.7937331612

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ML practice

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Code

```
0:66935572447429
448345.05257065047
226595.9901804495
0.7107751466906411
```

```
ll={'n_neighbors':[2,3,10,20,40,50]}
kk={'max_depth':[5,8,15,None,10],'max_features':[5,7,'auto',8],'min_samples_split':[2,8,15,20],'n_estimators':[100,200,500,1000]}
jj={'n_estimators':[100,200,300],'Booster':'gblinear'}
```

```
[48] vv=[('knn',KNeighborsRegressor(),ll),('rf',RandomForestRegressor(),kk),('XGBRegressor',XGBRegressor(),jj)]
vv
```

```
[('knn', KNeighborsRegressor(), {'n_neighbors': [2, 3, 10, 20, 40, 50]}),
 ('rf',
  RandomForestRegressor(),
  {'max_depth': [5, 8, 15, None, 10],
   'max_features': [5, 7, 'auto', 8],
   'min_samples_split': [2, 8, 15, 20],
   'n_estimators': [100, 200, 500, 1000]}),
 ('XGBRegressor',
  XGBRegressor(base_score=None, booster=None, callbacks=None,
               colsample_bylevel=None, colsample_bynode=None,
               colsample_bytree=None, device=None, early_stopping_rounds=None,
               enable_categorical=False, eval_metric=None, feature_types=None,
               gamma=None, grow_policy=None, importance_type=None,
               interaction_constraints=None, learning_rate=None, max_bin=None,
```

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```
num_parallel_tree=None, random_state=None, ...),
{'n_estimators': [100, 200, 300], 'Booster': 'gblinear'})]]

ss={'RandomForestRegressor':RandomForestRegressor(n_estimators=100,max_depth=None,max_features=5,min_samples_split=2,n_jobs=-1),'
XGBRegressor(n_estimators=100,Booster='gblinear')}
for i in range(len(list(ss))):
    ww=list(ss.values())[i]
    ww.fit(x_train,y_train)
    qq=ww.predict(x_train)
    q=ww.predict(x_test)
    mm,nn,zz=create(y_train,qq)
    rr,tt,uu=create(y_test,q)
    print(list(ss.keys())[i])

RandomForestRegressor
KNNeighbors
/usr/local/lib/python3.10/dist-packages/xgboost/core.py:158: UserWarning: [15:15:00] WARNING: /workspace/src/learner.cc:740:
Parameters: { "Booster" } are not used.

warnings.warn(msg, UserWarning)
XGBRegressor

[50]  mm
78466.7937331612
```

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ML practice

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+ Code + Text

78466.7937331612

[51] nn
54840.936903578964

[52] zz
0.9927064180374146

[53] rr
215461.54302455936

tt
89869.51843641869

uu
0.9332039952278137

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