In [1]:
```
import pandas as pd
import numpy as np
from datetime import datetime
from lightgbm import LGBMClassifier
import warnings
warnings.filterwarnings('ignore')
warnings.simplefilter(action='ignore', category=FutureWarning)

import matplotlib.pyplot as plt
import seaborn as sns
import time
from imblearn.over_sampling import SMOTE
from sklearn.metrics import confusion_matrix
from sklearn.pipeline import Pipeline
from sklearn.model_selection import train_test_split, TimeSeriesSplit, RandomizedSearchC
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report,accuracy_score, plot_confusion_matrix,
```

In [2]:
```
df = pd.read_csv('smote.csv')
df.tail()
```

Out[2]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	V9
568625	1.084762	-0.063846	1.693838	-4.245310	2.295877	-1.212742	-2.054768	-1.860351	0.811518	-1.730054
568626	-0.637311	-1.711814	0.456246	-1.120049	0.609640	-0.859496	-0.304985	-1.335793	0.017532	-0.016575
568627	-0.480862	-0.528259	1.141664	-0.850414	2.055184	0.068474	-0.460563	-1.022289	0.539480	-1.365581
568628	1.201490	-0.711715	2.790795	-5.314459	4.956698	-0.224579	-1.956847	-2.172370	1.186167	-3.607043
568629	0.485418	-2.360354	1.863733	-4.112487	2.079790	-1.182344	-1.466585	-3.022281	-0.239394	-0.269545

5 rows × 31 columns

In [3]:
```
df = df.rename(columns={'Class':'label'})
df.tail()
```

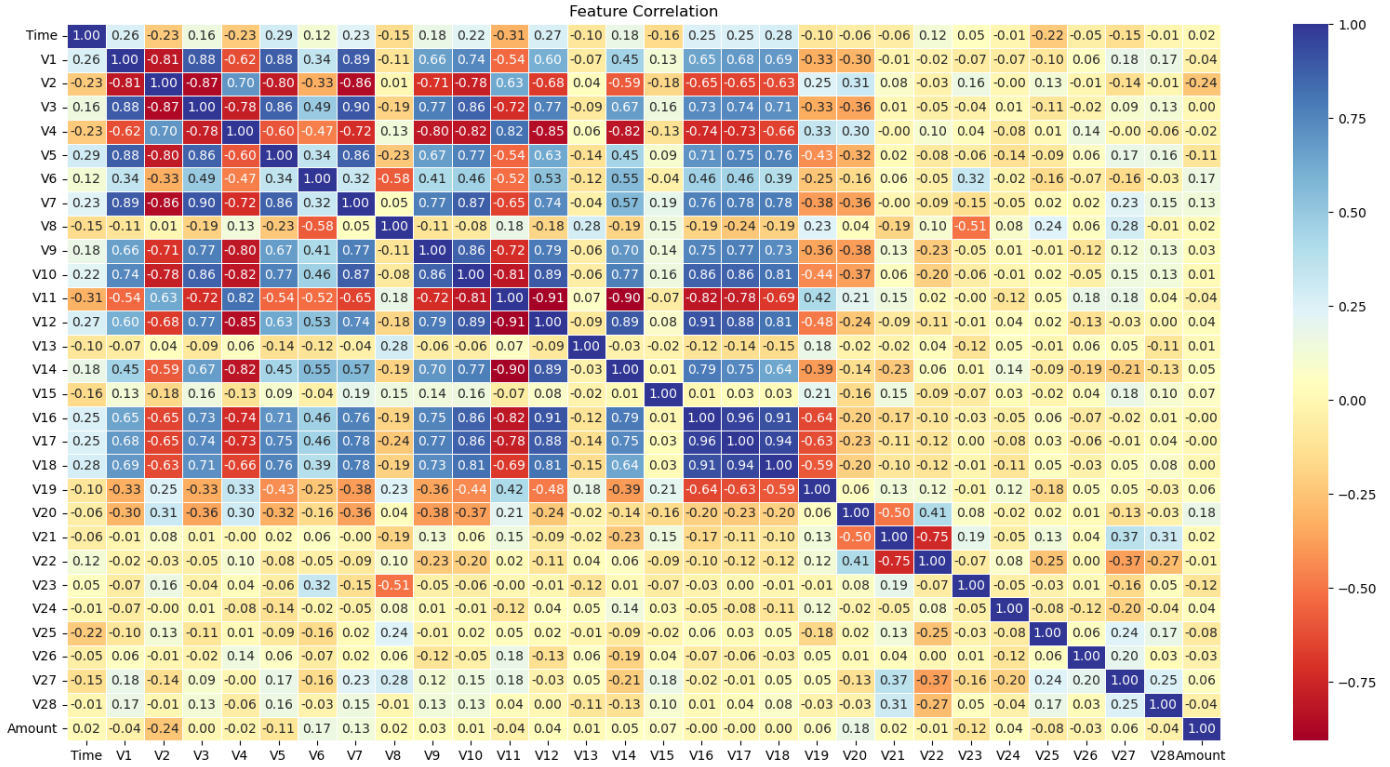
Out[3]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	V9
568625	1.084762	-0.063846	1.693838	-4.245310	2.295877	-1.212742	-2.054768	-1.860351	0.811518	-1.730054
568626	-0.637311	-1.711814	0.456246	-1.120049	0.609640	-0.859496	-0.304985	-1.335793	0.017532	-0.016575
568627	-0.480862	-0.528259	1.141664	-0.850414	2.055184	0.068474	-0.460563	-1.022289	0.539480	-1.365581
568628	1.201490	-0.711715	2.790795	-5.314459	4.956698	-0.224579	-1.956847	-2.172370	1.186167	-3.607043
568629	0.485418	-2.360354	1.863733	-4.112487	2.079790	-1.182344	-1.466585	-3.022281	-0.239394	-0.269545

5 rows × 31 columns

In [4]:
```
corrmat = df.drop(['label' ],axis=1).corr()

# Visualize feature correlation
fig, ax = plt.subplots(figsize=(20,10))
sns.heatmap(corrmat, annot=True, annot_kws={"size": 10}, fmt="0.2f", linewidths=0.5, squ
ax.set_title('Feature Correlation', fontsize=12, color='black');
```



In [5]:
```
X = df.drop(['label'],axis=1)
y = df['label']
```

In [6]:
```
df_shuffled = df.sample(frac=1).reset_index(drop=True)
df_shuffled
```

Out[6]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	
0	-1.332606	-0.376344	0.610026	1.012892	-0.088310	-0.177241	-0.582397	0.372280	0.138438	-0.22
1	-0.920881	0.579338	0.133159	0.156001	0.783980	-0.260421	-0.384843	-0.115501	0.012350	0.50
2	-0.732534	-0.306165	1.540090	-1.769122	2.559741	-0.329996	-0.896657	-1.614333	0.639431	-2.33
3	-0.834059	0.505940	-0.221271	-0.273324	0.167876	-0.292997	-1.028146	0.512768	-0.350057	-0.09
4	-1.034425	0.650800	-0.234663	0.431018	-0.185936	-0.373417	0.456422	-0.659016	0.220902	0.81
...	...	...	...	...	...	...	...	...	...	...
568625	0.726101	-0.052554	0.510153	-0.843696	0.905225	0.340690	-0.730501	0.816403	-0.004369	-0.42
568626	0.935391	-0.209749	-0.458019	-1.296263	-0.134144	1.370243	-1.069050	-0.057465	-0.827364	0.68
568627	-0.586544	0.662129	0.184216	-0.101091	0.210951	0.212353	-0.052634	-0.011032	-0.004482	-0.19
568628	-0.961523	0.629701	-0.053195	-0.060995	-0.075641	-0.149894	-0.463464	0.107150	-0.123758	0.02
568629	0.068355	-9.435073	8.128311	-13.554183	8.177360	-10.339398	0.005260	-20.259736	-5.865464	-7.86

568630 rows × 31 columns

In [7]:
```
X = df_shuffled.iloc[:,:-1]; y = df_shuffled.iloc[:,-1]
```

In [8]:
```
#train, test split
X_train, X_test, y_train, y_test = train_test_split(X,y,test_size=0.35, shuffle=False)
```

In [9]:
```
y_test.value_counts()
```

Out[9]:
```
1    99539
```

```
0    99482
Name: label, dtype: int64
```

In [10]:
```
lgbm = LGBMClassifier()
```

In [11]:
```
lgbm.get_params()
```

Out[11]:
```
{'boosting_type': 'gbdt',
 'class_weight': None,
 'colsample_bytree': 1.0,
 'importance_type': 'split',
 'learning_rate': 0.1,
 'max_depth': -1,
 'min_child_samples': 20,
 'min_child_weight': 0.001,
 'min_split_gain': 0.0,
 'n_estimators': 100,
 'n_jobs': None,
 'num_leaves': 31,
 'objective': None,
 'random_state': None,
 'reg_alpha': 0.0,
 'reg_lambda': 0.0,
 'subsample': 1.0,
 'subsample_for_bin': 200000,
 'subsample_freq': 0}
```

In [12]:
```
start_time = time.time()
lgbm.fit(X_train, y_train)
end_time = time.time()
print('the training time is:',end_time-start_time)
```

```
  File "C:\Users\sjw2000824\anaconda3\lib\site-packages\joblib\externals\loky\backend\co
ntext.py", line 227, in _count_physical_cores
    cpu_info = subprocess.run(
  File "C:\Users\sjw2000824\anaconda3\lib\subprocess.py", line 505, in run
    with Popen(*popenargs, **kwargs) as process:
  File "C:\Users\sjw2000824\anaconda3\lib\subprocess.py", line 951, in __init__
    self._execute_child(args, executable, preexec_fn, close_fds,
  File "C:\Users\sjw2000824\anaconda3\lib\subprocess.py", line 1420, in _execute_child
    hp, ht, pid, tid = _winapi.CreateProcess(executable, args,
[LightGBM] [Info] Number of positive: 184776, number of negative: 184833
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
032746 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 369609, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499923 -> initscore=-0.000308
[LightGBM] [Info] Start training from score -0.000308
the training time is: 1.603391408920288
```

In [13]:
```
y_pred = lgbm.predict(X_test)
```

In [14]:
```
for i in range(X_test.shape[0]):
    if y_pred[i]>=0.5:
        y_pred[i] = 1
    else:
        y_pred[i] = 0
```

In [15]:
```
pd.DataFrame(y_pred).value_counts()
```

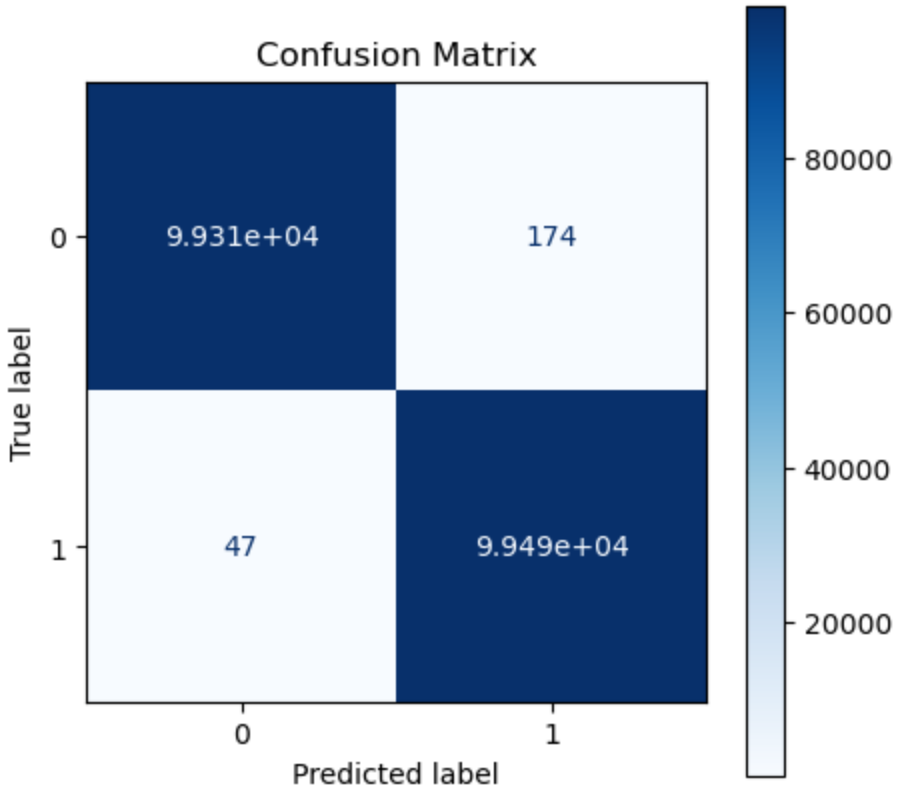
Out[15]:
```
1    99666
0    99355
dtype: int64
```

In [16]:
```
fig,ax = plt.subplots(figsize=(5,5))
plot_confusion_matrix(lgbm,X_test,y_test, ax=ax, cmap='Blues', values_format='.4g')
plt.title('Confusion Matrix')
plt.grid(False)
print(classification_report(y_test, y_pred))
```

```
              precision    recall  f1-score   support

           0       1.00      1.00      1.00     99482
           1       1.00      1.00      1.00     99539

    accuracy                           1.00    199021
   macro avg       1.00      1.00      1.00    199021
weighted avg       1.00      1.00      1.00    199021
```

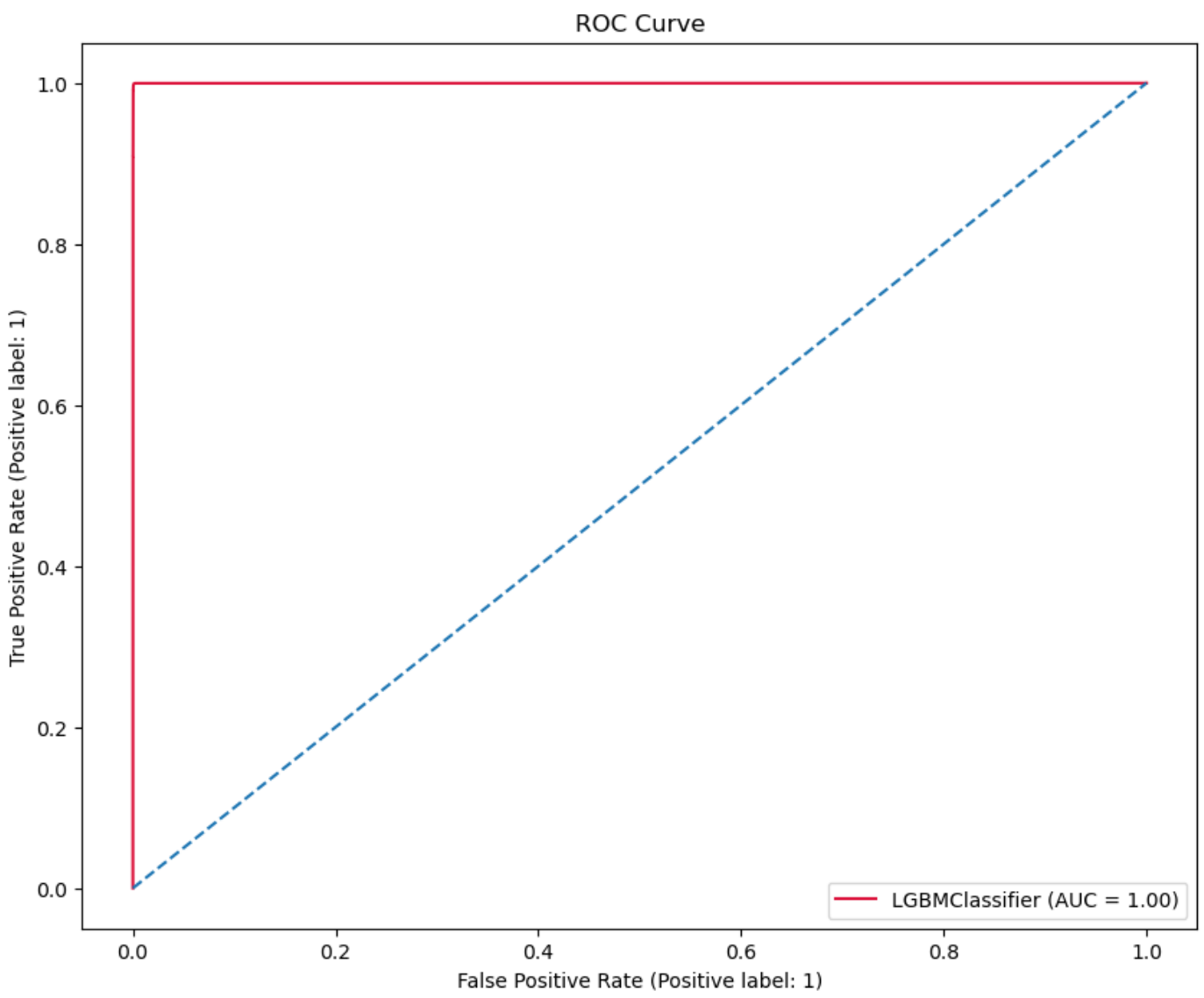


In [17]:
```
print(f'Train accuracy:{lgbm.score(X_train,y_train):0.4}')
print(f'Test accuracy:{lgbm.score(X_test,y_test):0.4}')
```

```
Train accuracy:0.9993
Test accuracy:0.9989
```

In [18]:
```
fig,ax = plt.subplots(figsize=(10,8))
plot_roc_curve(lgbm, X_test,y_test,ax=ax, color='crimson')
ax.plot([0,1],[0,1],linestyle='--')
ax.set_title('ROC Curve')
```

Out[18]:
```
Text(0.5, 1.0, 'ROC Curve')
```



In [19]:
```
lgbm.get_params()
```

Out[19]:
```
{'boosting_type': 'gbdt',
 'class_weight': None,
 'colsample_bytree': 1.0,
 'importance_type': 'split',
 'learning_rate': 0.1,
 'max_depth': -1,
 'min_child_samples': 20,
 'min_child_weight': 0.001,
 'min_split_gain': 0.0,
 'n_estimators': 100,
 'n_jobs': None,
 'num_leaves': 31,
 'objective': None,
 'random_state': None,
 'reg_alpha': 0.0,
 'reg_lambda': 0.0,
 'subsample': 1.0,
 'subsample_for_bin': 200000,
 'subsample_freq': 0}
```

In [20]:
```
param_space = {
    'num_leaves': [31,32,33,34,35],
    'learning_rate': [0.05,0.07,0.1,0.15,0.2],
    'reg_alpha' : [0,0.001,0.005,0.01,0.05],
    'reg_lambda': [0.5,1,1.5,2,3]
    }
```

In [21]:
```
start_time = time.time()
tscv = TimeSeriesSplit(n_splits=5, gap=1)
rs = RandomizedSearchCV(lgbm, param_space, n_iter=100, scoring='f1', cv = tscv, verbose=
rs.fit(X_train, y_train)
end_time = time.time()
print('the tuning time is:',end_time-start_time)
```

```
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003763 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010449 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010338 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014267 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017784 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004924 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007225 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

```
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011712 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013394 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016718 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003545 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007436 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009895 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015040 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
```

```
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016337 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004078 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008460 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010097 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013981 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017618 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003620 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

```
007646 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011055 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013900 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017139 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005298 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007110 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014606 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018470 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
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[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017521 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003704 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008228 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013835 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017832 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018153 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003926 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
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[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007413 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013309 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014974 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020557 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004858 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009504 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011043 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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014285 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
025361 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003761 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007283 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012154 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014437 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
021815 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003880 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008224 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010580 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014473 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020669 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005435 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008788 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012907 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
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[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019201 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
021531 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004320 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007483 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010851 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014697 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017831 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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004229 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007789 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012047 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015079 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020888 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004160 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007474 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011175 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
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[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014681 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019505 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003871 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007413 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013918 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015284 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
023800 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
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[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004027 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007700 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011069 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016039 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
022517 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005648 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010868 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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014881 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016034 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018256 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003969 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007656 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012233 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017734 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018219 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003923 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007519 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011453 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014643 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019456 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004899 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007877 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
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[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013802 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018465 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018877 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004704 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008022 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011009 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015877 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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018337 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004006 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007949 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011465 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016618 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018892 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005420 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007862 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
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[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011034 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014563 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018485 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003918 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009740 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010831 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016105 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
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[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019180 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004021 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007788 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011063 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014812 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018797 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004019 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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007696 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010976 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014839 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019160 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005136 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007729 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011734 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015036 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
023209 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
006035 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008072 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011375 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017855 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
021233 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004167 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
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[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007606 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011218 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016419 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
024479 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005171 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008796 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012791 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

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020348 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
024635 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004013 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007651 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011441 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
023229 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018541 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004007 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
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[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011999 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012594 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017997 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
024361 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003997 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010717 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012575 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
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[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015782 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018970 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004023 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007807 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011268 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014906 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018679 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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003962 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007838 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012035 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015076 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020227 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005312 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008889 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011386 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019056 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019111 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004061 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010358 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015024 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018690 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
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[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004443 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007751 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011782 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016446 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018870 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005803 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008074 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

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013070 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015341 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018467 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005700 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010038 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011348 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016715 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018704 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005709 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009999 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012597 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015707 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
023825 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004074 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009379 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
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[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011076 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015213 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
026738 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003994 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007750 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011336 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014939 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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019994 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005056 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012119 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012457 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016255 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018955 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004015 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007885 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011300 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015430 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019263 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004139 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011289 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012146 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014953 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
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[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018661 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004407 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007729 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011581 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017036 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018814 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004250 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

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008160 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011851 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015783 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019495 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004110 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007758 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011626 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017197 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019049 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004041 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007969 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011294 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
014813 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018661 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003971 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
```

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[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007792 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011727 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015287 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019129 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004775 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008303 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011401 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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014987 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019086 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004079 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007868 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011889 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016760 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019026 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004099 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007605 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015110 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016086 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018780 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004058 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007865 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011556 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
```

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[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015139 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019456 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004571 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008615 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011576 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015248 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019091 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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004051 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007685 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015345 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019405 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007868 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011747 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015363 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018954 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004082 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011394 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015494 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018821 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
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[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004257 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007734 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011923 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015345 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019141 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004116 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007819 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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016053 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015778 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019236 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004087 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007816 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011648 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
021623 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019496 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004238 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010373 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011693 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015892 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019883 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003986 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010652 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
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[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011914 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015607 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003944 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007698 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011712 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
017287 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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019191 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004128 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007921 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011597 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016245 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
021103 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004305 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007946 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012434 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015131 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018683 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003950 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007827 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012621 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015247 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
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[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018434 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004466 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007867 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011371 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015037 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019010 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004255 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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007753 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011887 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015126 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019021 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004139 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008674 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012391 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015197 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018502 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004173 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008038 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012721 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015657 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019161 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004086 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
```

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[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008151 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011851 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
022425 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019100 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005840 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008128 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011756 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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015316 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019581 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
003983 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007898 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011725 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015257 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
028107 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004254 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007781 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011900 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
022324 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
029988 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004115 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008901 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011819 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
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[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
023081 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
027552 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005891 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008058 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011975 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015820 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019412 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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004180 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
010789 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016266 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015129 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
029214 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005992 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011938 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012576 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016028 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
025633 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004123 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008006 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011955 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015584 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
029637 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
```

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[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004043 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007870 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011839 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015488 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018926 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004343 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008128 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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012006 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015504 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019526 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004373 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007732 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011303 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015571 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019142 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004215 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007907 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011674 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016421 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019183 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004102 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007775 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
```

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[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012562 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015438 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
022649 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004041 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007849 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
011541 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015523 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

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019062 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004830 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
007994 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012633 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015576 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
018718 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004578 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008665 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012245 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016961 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019204 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004485 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008619 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012544 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015739 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
```

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[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019472 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004568 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008349 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012348 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015478 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019640 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004558 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
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008564 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
013128 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015961 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020123 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
006195 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008688 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012451 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
015891 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

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[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019044 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004529 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008333 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012337 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016453 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020189 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004874 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
```

```
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008430 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012270 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016244 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020764 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004476 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008632 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012630 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
```

```
016703 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019769 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004726 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
009431 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016235 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016204 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
029904 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
004905 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
```

```
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008824 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
016611 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019091 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
020411 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 30723, number of negative: 30880
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
005812 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 61603, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498726 -> initscore=-0.005097
[LightGBM] [Info] Start training from score -0.005097
[LightGBM] [Info] Number of positive: 61440, number of negative: 61764
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
008570 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 123204, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.498685 -> initscore=-0.005260
[LightGBM] [Info] Start training from score -0.005260
[LightGBM] [Info] Number of positive: 92316, number of negative: 92489
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
012314 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 184805, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499532 -> initscore=-0.001872
```

```
[LightGBM] [Info] Start training from score -0.001872
[LightGBM] [Info] Number of positive: 123086, number of negative: 123320
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019646 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 246406, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499525 -> initscore=-0.001899
[LightGBM] [Info] Start training from score -0.001899
[LightGBM] [Info] Number of positive: 153828, number of negative: 154179
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
019942 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 308007, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499430 -> initscore=-0.002279
[LightGBM] [Info] Start training from score -0.002279
[LightGBM] [Info] Number of positive: 184776, number of negative: 184833
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
024590 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 369609, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499923 -> initscore=-0.000308
[LightGBM] [Info] Start training from score -0.000308
the tuning time is: 498.78461241722107
```

In [22]:
```
rs.best_params_
```

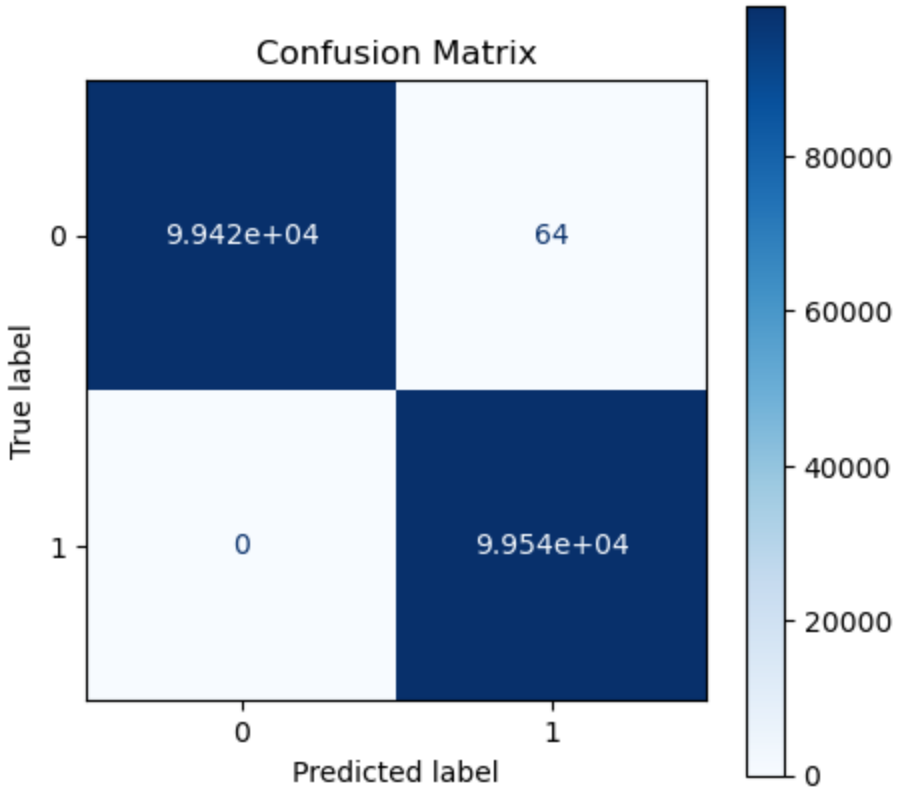
Out[22]:
```
{'reg_lambda': 1, 'reg_alpha': 0, 'num_leaves': 34, 'learning_rate': 0.2}
```

In [23]:
```
cls = LGBMClassifier(**rs.best_params_)
cls.fit(X_train,y_train)
```

```
[LightGBM] [Info] Number of positive: 184776, number of negative: 184833
[LightGBM] [Info] Auto-choosing col-wise multi-threading, the overhead of testing was 0.
036650 seconds.
You can set `force_col_wise=true` to remove the overhead.
[LightGBM] [Info] Total Bins 7650
[LightGBM] [Info] Number of data points in the train set: 369609, number of used feature
s: 30
[LightGBM] [Info] [binary:BoostFromScore]: pavg=0.499923 -> initscore=-0.000308
[LightGBM] [Info] Start training from score -0.000308
```

Out[23]:
```
LGBMClassifier(learning_rate=0.2, num_leaves=34, reg_alpha=0, reg_lambda=1)
```

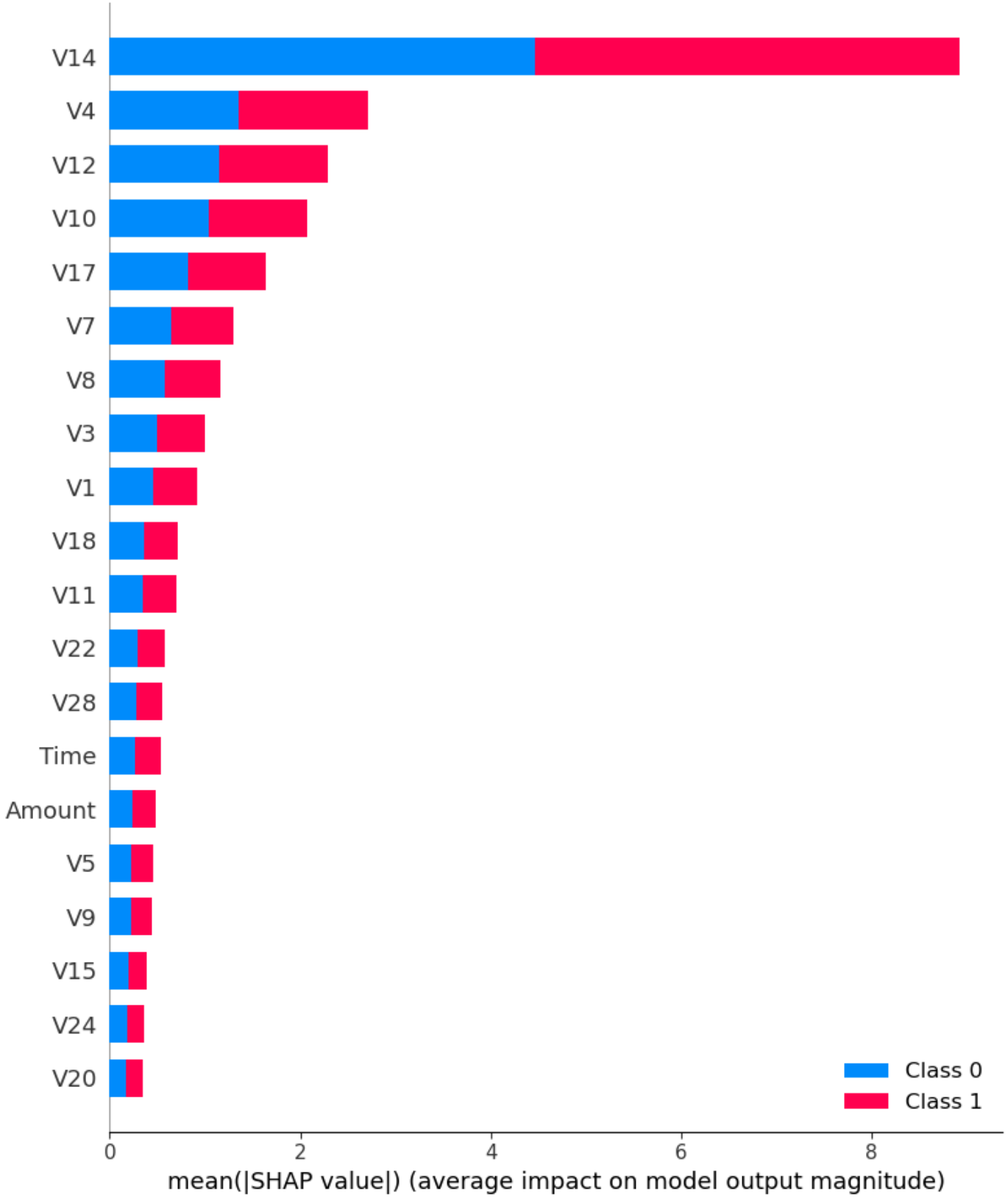
In [29]:
```
fig,ax = plt.subplots(figsize=(5,5))
plot_confusion_matrix(cls,X_test,y_test, ax=ax, cmap='Blues', values_format='.4g')
plt.title('Confusion Matrix')
plt.grid(False)
```



In [25]:
```
print(f'Train accuracy:{cls.score(X_train,y_train):0.4}')
print(f'Test accuracy:{cls.score(X_test,y_test):0.4}')
```

```
Train accuracy:1.0
Test accuracy:0.9997
```

In [30]:
```
import shap
explainer = shap.TreeExplainer(cls)
shap_values = explainer.shap_values(X_test)
shap.summary_plot(shap_values, X_test)
```



summary

In this project, we focus on Gradient Boosting Decision Tree (GBDT) methodology, built XGBoost and LightGBM model,and compared their perfomance on Credit card Fraud dataset.

In practice, It's validated that lightGBM is 15 times faster than XGBoost, and achieved better accuracy based upon large-scale dataset.

Contribution

YUAN, Shuoqi: Part 1 Credit card fraud background

ZHENG, Zezhou: Part 2 Algorithm methodology

Yang, Ziyi: Part 3 XGBoost establish and optimization

SHEN, Jiawei: Part 4 LightGBM establish, optimization and comparision