Nasdaq Tech&tele

July 26, 2022

1 Packages

```
[107]: import numpy as np
       import pandas as pd
       import plotly.graph_objs as go
       import plotly.offline as py
       import prophet
       from prophet.plot import plot_plotly, add_changepoints_to_plot
       import streamlit as st
       py.init_notebook_mode()
       import yfinance as yfinance
       from keras.models import Sequential
       from keras.layers import LSTM, Dropout, Dense, Activation
       import datetime
```

2 Data collection and process

```
[6]: import pandas_datareader as web
     ticker = pd.read_csv('./nasdaq_techundtelelar77.csv')['Symbol']
     df = pd.DataFrame
     #The end date will set automatically to current date.
     df = web.DataReader(ticker,'yahoo', start= '2017-06-01',end ='2022-07-01')['Adj␣
      ↪Close']



     df
```

```
[6]: Symbols            AAPL         ADBE          ADI         ADSK         AMAT  \
     Date
     2017-06-01    36.252579   141.380005    74.143349   113.029999   43.195930
     2017-06-02    36.789810   143.479996    72.970901   112.910004   43.947159
     2017-06-05    36.430080   143.589996    71.022835   110.879997   43.872032
     2017-06-06    36.553139   143.029999    72.240379   111.449997   43.731178
     2017-06-07    36.770878   143.619995    73.310600   111.169998   44.379124
```

```
…              …             …             …             …             …
2022-06-27    141.660004    381.070007    150.589996    185.869995    97.610001
2022-06-28    137.440002    365.630005    148.490005    176.809998    95.019997
2022-06-29    139.229996    368.500000    147.270004    176.850006    91.940002
2022-06-30    136.720001    366.059998    146.089996    171.960007    90.980003
2022-07-01    138.929993    368.480011    142.910004    173.860001    86.269997

Symbols            AMD          ANSS           APP          ASML          AVGO  …  \
Date                                                                           …
2017-06-01    10.930000    127.860001           NaN    127.719086    194.508759  …
2017-06-02    10.900000    129.490005           NaN    128.568588    211.041870  …
2017-06-05    11.240000    129.539993           NaN    127.098686    209.118286  …
2017-06-06    12.030000    128.399994           NaN    126.583260    210.486343  …
2017-06-07    12.380000    128.339996           NaN    127.890915    210.834641  …
…                    …             …             …             …             …  …
2022-06-27    86.160004    250.800003     38.340000    508.040009    505.709991  …
2022-06-28    80.779999    240.139999     36.250000    490.410004    498.450012  …
2022-06-29    77.989998    241.460007     35.549999    484.619995    490.410004  …
2022-06-30    76.470001    239.289993     34.439999    475.880005    485.809998  …
2022-07-01    73.669998    240.190002     34.980000    449.829987    477.839996  …

Symbols            TXN           VOD          VRSN           WBD          WDAY  \
Date
2017-06-01    71.458839    21.488811    92.279999    26.740000    101.500000
2017-06-02    71.581604    21.567390    92.550003    26.490000    104.410004
2017-06-05    71.809578    21.560246    92.519997    26.209999    102.870003
2017-06-06    72.098976    21.524527    92.070000    26.160000    102.660004
2017-06-07    72.686493    21.534176    92.260002    26.410000    102.500000
…                    …             …             …             …             …
2022-06-27    155.619995    15.740000    168.850006    14.080000    148.050003
2022-06-28    154.160004    15.690000    164.259995    13.660000    144.250000
2022-06-29    152.779999    15.440000    166.259995    13.170000    146.309998
2022-06-30    153.649994    15.580000    167.330002    13.420000    139.580002
2022-07-01    148.539993    15.610000    170.809998    14.250000    142.350006

Symbols            WDC          ZBRA            ZI            ZM            ZS
Date
2017-06-01    82.573929    108.139999           NaN           NaN           NaN
2017-06-02    82.510811    107.750000           NaN           NaN           NaN
2017-06-05    80.617538    105.900002           NaN           NaN           NaN
2017-06-06    81.086349    105.239998           NaN           NaN           NaN
2017-06-07    81.077339    106.570000           NaN           NaN           NaN
…                    …             …             …             …             …
2022-06-27    47.580002    309.829987     36.450001    119.820000    164.229996
2022-06-28    46.740002    302.209991     34.930000    113.129997    154.919998
2022-06-29    45.400002    298.329987     34.189999    111.870003    154.949997
2022-06-30    44.830002    293.950012     33.240002    107.970001    149.509995
```

```
2022-07-01   43.419998   299.339996   33.889999   110.970001   155.369995

[1281 rows x 76 columns]
```

```python
[113]:  figure = pd.read_csv('nasdaqtechend.csv')
        figure.head()

        import plotly.express as px
        df = px.data.stocks()
        fig = px.line(figure, x="Date", y=figure.columns,
                      hover_data={"Date": "|%B %d, %Y"},
                       title='custom tick labels')
        fig.update_xaxes(
            dtick="M1",
            tickformat="%b\n%Y")
        fig.show()
```

```python
[7]:  df.to_csv('nasdaqtechend.csv')
```

```python
[8]:  #df = pd.read_csv('nasdaqtechend.csv')
      from sua import EfficientFrontier
      from sua import risk_models
      from sua import expected_returns

      # Calculate the expected annual returns and the annulized sample covariance
       ↪matrix of the daily asset  returns

      mu = expected_returns.mean_historical_return(df)
      S = risk_models.sample_cov(df)
```

```python
[9]:  ef = EfficientFrontier(mu, S)
      #ef.add_objective(objective_functions.L2_reg, gamma=2)
      weights= ef.max_sharpe()
      #weights = ef.nonconvex_objective(
             #objective_functions.sharpe_ratio,
             #objective_args=(ef.expected_returns, ef.cov_matrix),
             #weights_sum_to_one=True,

          #)
      cleaned_weights = ef.clean_weights()
      print(cleaned_weights)
      ef.portfolio_performance(verbose=True)
```

```
OrderedDict([('AAPL', 0.00692), ('ADBE', 0.0), ('ADI', 0.0), ('ADSK', 0.0),
('AMAT', 0.0), ('AMD', 0.02549), ('ANSS', 0.0), ('APP', 0.0), ('ASML', 0.0),
('AVGO', 0.0), ('AZPN', 0.0), ('BIDU', 0.0), ('BILI', 0.0), ('CDNS', 0.0),
('CDW', 0.0), ('CHKP', 0.0), ('COIN', 0.0), ('CRWD', 0.0), ('CSCO', 0.0),
('CTSH', 0.0), ('CTXS', 0.0), ('DDOG', 0.0), ('DOCU', 0.0), ('DOX', 0.0),
```

3

```
('ENTG', 0.0), ('ERIC', 0.0), ('FTNT', 0.42549), ('GOOG', 0.0), ('GOOGL', 0.0),
('INTC', 0.0), ('INTU', 0.0), ('JKHY', 0.0), ('KLAC', 0.0), ('LBTYA', 0.0),
('LBTYB', 0.0), ('LBTYK', 0.0), ('LRCX', 0.0), ('MCHP', 0.0), ('MDB', 0.02404),
('META', 0.0), ('MPWR', 0.0), ('MRVL', 0.0), ('MSFT', 0.23266), ('MTCH', 0.0),
('MU', 0.0), ('NICE', 0.0), ('NLOK', 0.0), ('NTAP', 0.0), ('NVDA', 0.0),
('NXPI', 0.0), ('OKTA', 0.0), ('ON', 0.0), ('PANW', 0.0), ('PTC', 0.0), ('QCOM',
0.0), ('ROKU', 0.0), ('SEDG', 0.28541), ('SNPS', 0.0), ('SPLK', 0.0), ('SSNC',
0.0), ('STX', 0.0), ('SWKS', 0.0), ('TEAM', 0.0), ('TMUS', 0.0), ('TTD', 0.0),
('TTWO', 0.0), ('TXN', 0.0), ('VOD', 0.0), ('VRSN', 0.0), ('WBD', 0.0), ('WDAY',
0.0), ('WDC', 0.0), ('ZBRA', 0.0), ('ZI', 0.0), ('ZM', 0.0), ('ZS', 0.0)])
Expected annual return: 50.5%
Annual volatility: 35.8%
Sharpe Ratio: 1.35
```

[9]: (0.5047405034362157, 0.3580154735252051, 1.3539652313438035)

[10]:
```python
from pypfopt.discrete_allocation import DiscreteAllocation, get_latest_prices

portfolio_val = 15000
latest_prices = get_latest_prices(df)
weights = cleaned_weights
da = DiscreteAllocation(weights, latest_prices, total_portfolio_value =_
 ↪portfolio_val)
allocation, leftover = da.lp_portfolio(reinvest=True ,verbose = True)
print('Discrete allocation:', allocation)
print('Funds remaining: $', leftover)
```

```
Funds remaining: 336.60
AAPL: allocated 0.009, desired 0.007
ADBE: allocated 0.000, desired 0.000
ADI: allocated 0.000, desired 0.000
ADSK: allocated 0.000, desired 0.000
AMAT: allocated 0.000, desired 0.000
AMD: allocated 0.025, desired 0.025
ANSS: allocated 0.000, desired 0.000
APP: allocated 0.000, desired 0.000
ASML: allocated 0.000, desired 0.000
AVGO: allocated 0.000, desired 0.000
AZPN: allocated 0.000, desired 0.000
BIDU: allocated 0.000, desired 0.000
BILI: allocated 0.000, desired 0.000
CDNS: allocated 0.000, desired 0.000
CDW: allocated 0.000, desired 0.000
CHKP: allocated 0.000, desired 0.000
COIN: allocated 0.000, desired 0.000
CRWD: allocated 0.000, desired 0.000
CSCO: allocated 0.000, desired 0.000
CTSH: allocated 0.000, desired 0.000
```

```
CTXS: allocated 0.000, desired 0.000
DDOG: allocated 0.000, desired 0.000
DOCU: allocated 0.000, desired 0.000
DOX: allocated 0.000, desired 0.000
ENTG: allocated 0.000, desired 0.000
ERIC: allocated 0.000, desired 0.000
FTNT: allocated 0.434, desired 0.425
GOOG: allocated 0.000, desired 0.000
GOOGL: allocated 0.000, desired 0.000
INTC: allocated 0.000, desired 0.000
INTU: allocated 0.000, desired 0.000
JKHY: allocated 0.000, desired 0.000
KLAC: allocated 0.000, desired 0.000
LBTYA: allocated 0.000, desired 0.000
LBTYB: allocated 0.000, desired 0.000
LBTYK: allocated 0.000, desired 0.000
LRCX: allocated 0.000, desired 0.000
MCHP: allocated 0.000, desired 0.000
MDB: allocated 0.018, desired 0.024
META: allocated 0.000, desired 0.000
MPWR: allocated 0.000, desired 0.000
MRVL: allocated 0.000, desired 0.000
MSFT: allocated 0.230, desired 0.233
MTCH: allocated 0.000, desired 0.000
MU: allocated 0.000, desired 0.000
NICE: allocated 0.000, desired 0.000
NLOK: allocated 0.000, desired 0.000
NTAP: allocated 0.000, desired 0.000
NVDA: allocated 0.000, desired 0.000
NXPI: allocated 0.000, desired 0.000
OKTA: allocated 0.000, desired 0.000
ON: allocated 0.000, desired 0.000
PANW: allocated 0.000, desired 0.000
PTC: allocated 0.000, desired 0.000
QCOM: allocated 0.000, desired 0.000
ROKU: allocated 0.000, desired 0.000
SEDG: allocated 0.283, desired 0.285
SNPS: allocated 0.000, desired 0.000
SPLK: allocated 0.000, desired 0.000
SSNC: allocated 0.000, desired 0.000
STX: allocated 0.000, desired 0.000
SWKS: allocated 0.000, desired 0.000
TEAM: allocated 0.000, desired 0.000
TMUS: allocated 0.000, desired 0.000
TTD: allocated 0.000, desired 0.000
TTWO: allocated 0.000, desired 0.000
TXN: allocated 0.000, desired 0.000
VOD: allocated 0.000, desired 0.000
```

```
VRSN: allocated 0.000, desired 0.000
WBD: allocated 0.000, desired 0.000
WDAY: allocated 0.000, desired 0.000
WDC: allocated 0.000, desired 0.000
ZBRA: allocated 0.000, desired 0.000
ZI: allocated 0.000, desired 0.000
ZM: allocated 0.000, desired 0.000
ZS: allocated 0.000, desired 0.000
Allocation has RMSE: 0.001
Discrete allocation: {'AAPL': 1, 'AMD': 5, 'FTNT': 111, 'MDB': 1, 'MSFT': 13,
'SEDG': 15}
Funds remaining: $ 336.600475604906
```

[13]:
```python
#!pip install sua
from sua import sua,get_report, Start

portfolio = Start(
    start_date = "2017-06-01",
    end_date= "2022-07-01",
    portfolio= [ "AAPL", "AMD","FTNT","MDB", "MSFT", "SEDG"],
    optimizer = "EF",
    #rebalance = "1y",  # rebalance every year
    risk_manager = {"Stop Loss" : -0.2} # Stop the investment when the drawdown
 ↪becomes superior to -20%
)
#portfolio=Start.reshape(6,5)


sua(portfolio) #For showing in JupyterNotebook
#get_report(portfolio) #if you want to print wirh pdf form, plz use this.
```

```
Start date: 2017-06-01
End date: 2022-07-01

                Backtest

Annual return          56.72%
Cumulative return     879.62%
Annual volatility      35.76 %
Winning day ratio      57.34%
Sharpe ratio             1.44
Calmar ratio             1.59
Information ratio        0.01
Stability                0.98
Max Drawdown           -35.72 %
Sortino ratio            2.13
Skew                    -0.07
Kurtosis                 5.14
Tail Ratio               1.02
```
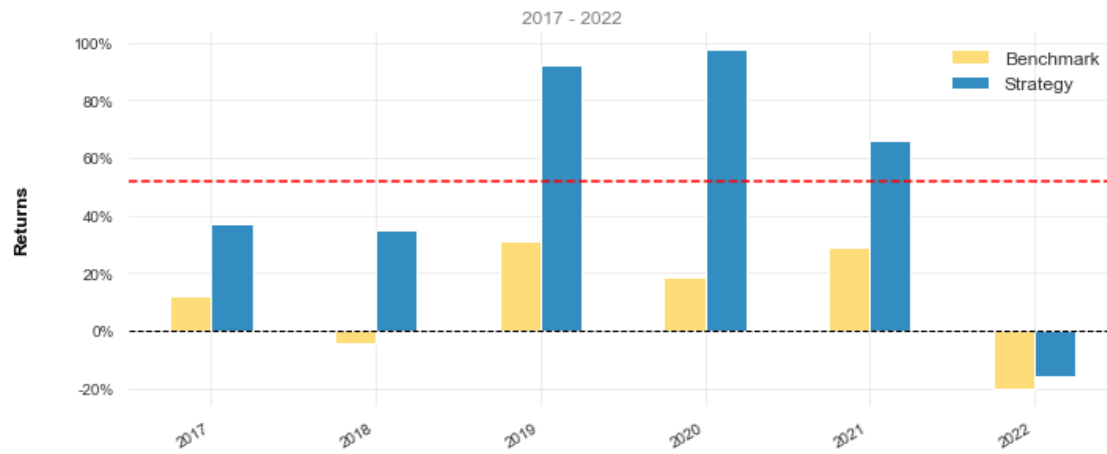
```
Common sense ratio       1.32
Daily value at risk     -4.0 %
Alpha                    0.42
Beta                     1.29
```
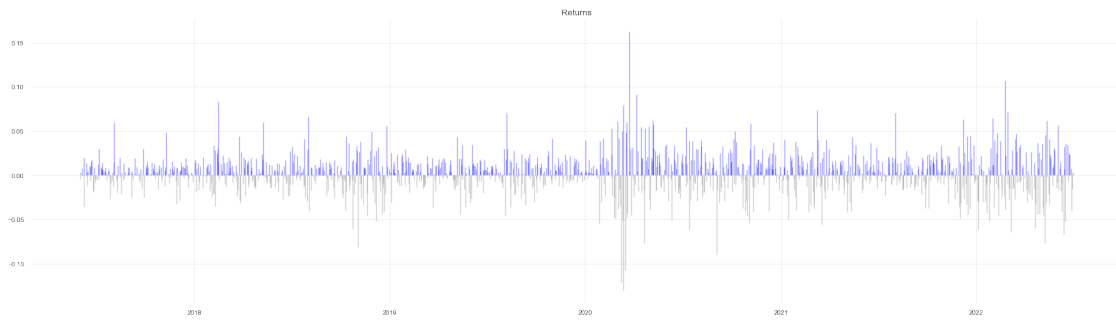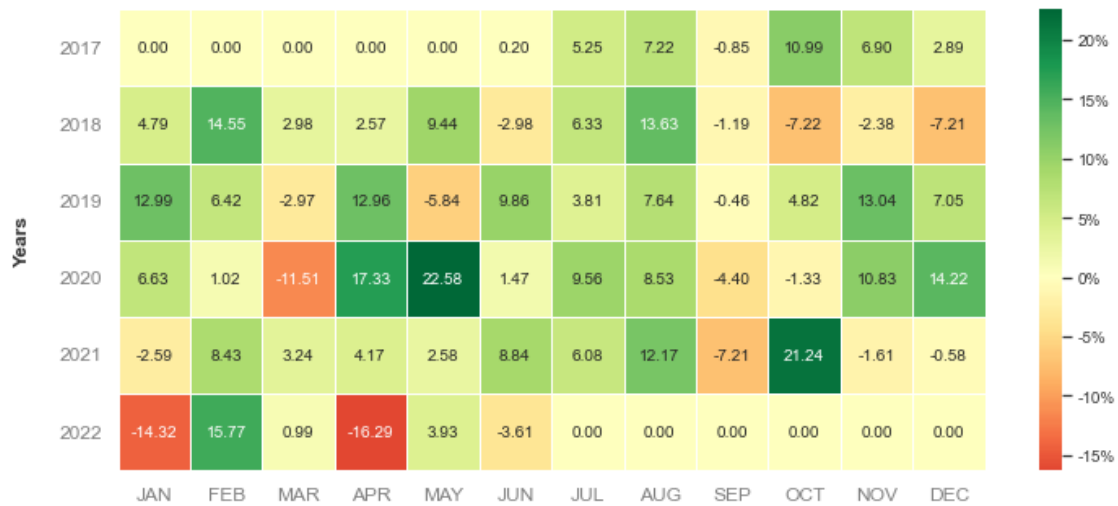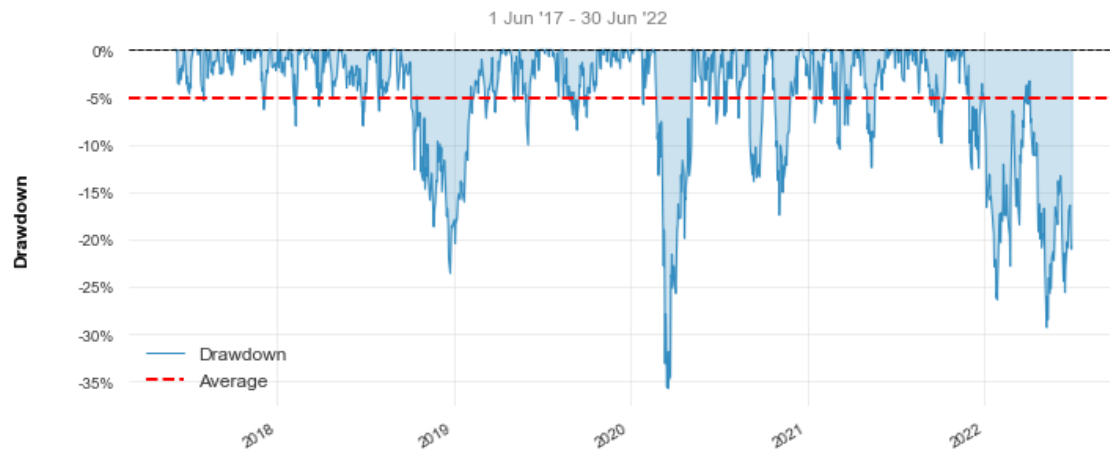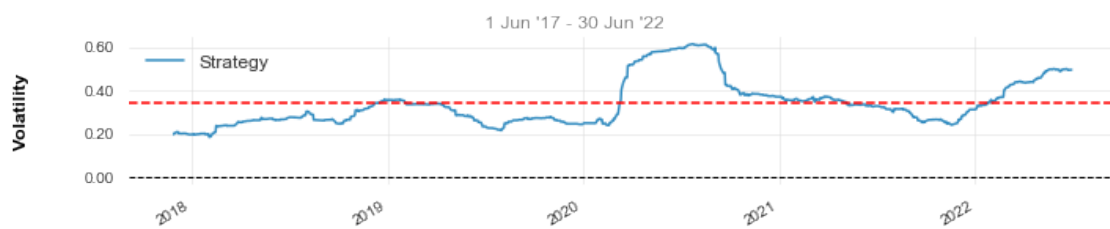
Returns

Cumulative Returns vs Benchmark

1 Jun '17 - 30 Jun '22

EOY Returns vs Benchmark

2017 - 2022

Legend: Benchmark, Strategy

Monthly Returns (%)

Years	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	0.00	0.00	0.00	0.00	0.00	0.20	5.25	7.22	-0.85	10.99	6.90	2.89
2018	4.79	14.55	2.98	2.57	9.44	-2.98	6.33	13.63	-1.19	-7.22	-2.38	-7.21
2019	12.99	6.42	-2.97	12.96	-5.84	9.86	3.81	7.64	-0.46	4.82	13.04	7.05
2020	6.63	1.02	-11.51	17.33	22.58	1.47	9.56	8.53	-4.40	-1.33	10.83	14.22
2021	-2.59	8.43	3.24	4.17	2.58	8.84	6.08	12.17	-7.21	21.24	-1.61	-0.58
2022	-14.32	15.77	0.99	-16.29	3.93	-3.61	0.00	0.00	0.00	0.00	0.00	0.00

Underwater Plot

1 Jun '17 - 30 Jun '22

Worst 5 Drawdown Periods

1 Jun '17 - 30 Jun '22

Rolling Volatility (6-Months)

1 Jun '17 - 30 Jun '22

Rolling Sharpe (6-Months)

1 Jun '17 - 30 Jun '22

Rolling Beta to Benchmark

1 Jun '17 - 30 Jun '22

```
FTNT
43.7%

MDB                                    AMD
      0.2%                    3.8%
                                      
           23.3%
                         28.9%
MSFT
                              SEDG
```
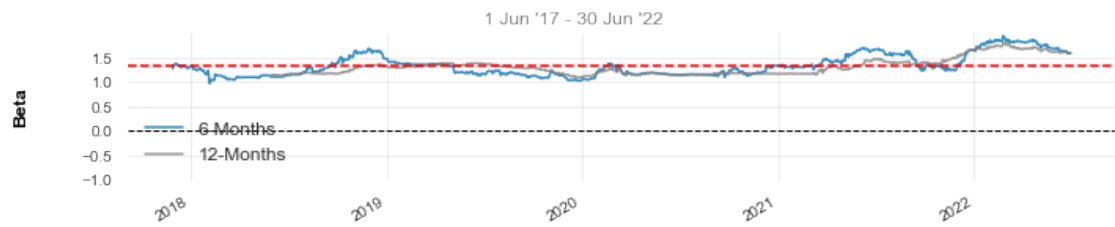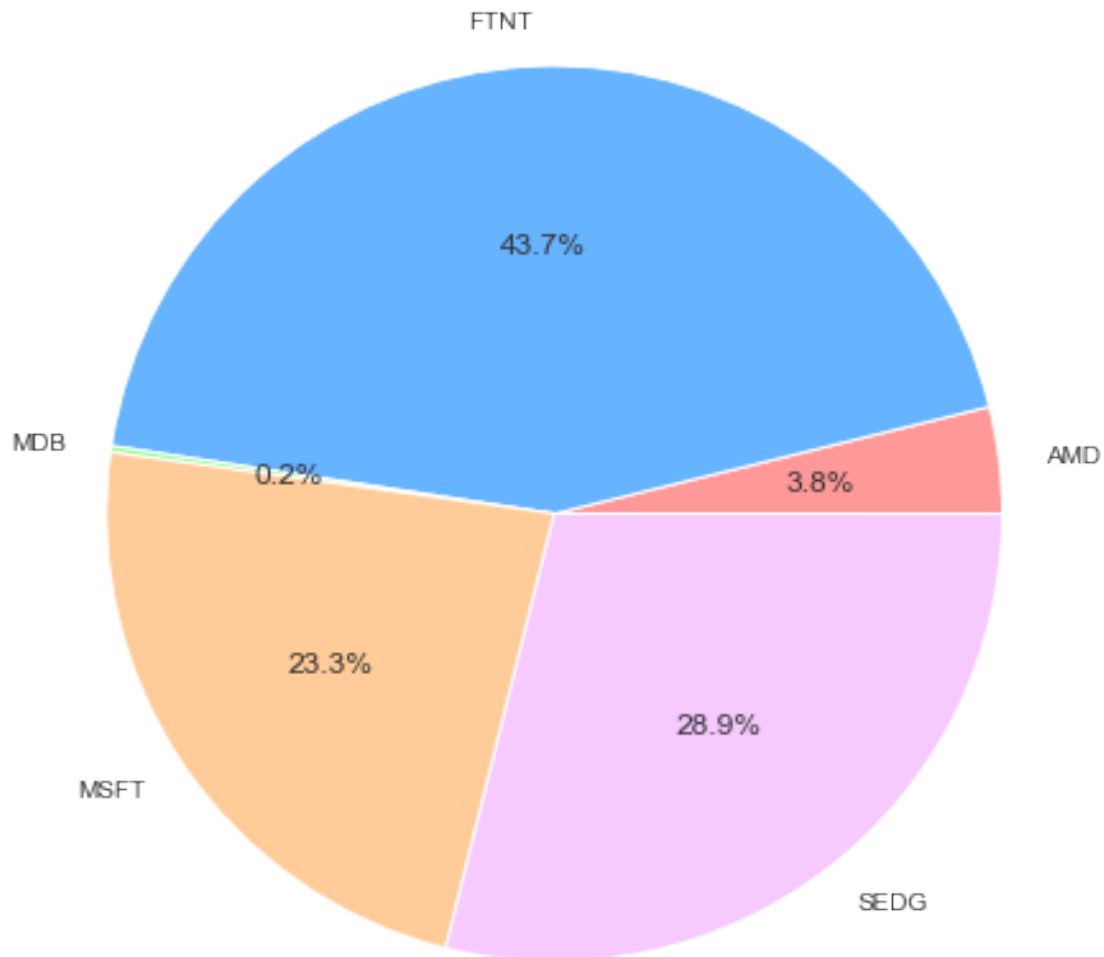
[13]: (None, None, None, None, None, None, None, None, None)

```
[5]: from sua import prediction

prediction(
        portfolio=["AAPL", "AMD","FTNT","MDB", "MSFT", "SEDG"], #stocks you want
   ↪to predict
        start_date = "2017-06-01",#date from which it will take data to predict
        end_date= "2022-07-01",
        #weights = [0.3, 0.2, 0.3, 0.2,0.2], #allocate 30% to TSLA and 20% to
   ↪AAPL...(equal weighting  by default)
        prediction_days=30 #number of days you want to predict
)
```

Collecting datas…

```
Evaluating the models for AAPL…
Models evaluated!
Making the predictions for AAPL…
Predictions generated!
Evaluating the models for AMD…
Models evaluated!
Making the predictions for AMD…
Predictions generated!
Evaluating the models for FTNT…
Models evaluated!
Making the predictions for FTNT…
Predictions generated!
Evaluating the models for MDB…
Models evaluated!
Making the predictions for MDB…
Predictions generated!
Evaluating the models for MSFT…
Models evaluated!
Making the predictions for MSFT…
Predictions generated!
Evaluating the models for SEDG…
Models evaluated!
Making the predictions for SEDG…
Predictions generated!
```

```
Assets MAPE (accuracy score)
      Exponential smoothing    Prophet  Auto-ARIMA   Theta(2)      ARIMA
FFT  FourTheta  NaiveDrift  NaiveMean  NaiveSeasonal
SEDG             37.677973  79.995410  264.333612  25.172785  17.368633
83.875073  25.172785   37.533311  70.620218      16.071584
MSFT             10.001462   7.883145   10.007117  14.327419  20.138690
66.846233  14.329311    9.961099  53.681740      19.832046
MDB              33.644527  61.814984   34.069630  24.805177  21.692075
82.130434  24.805177   33.570257  63.684560      21.239144
FTNT             32.958153  40.210766   33.020866  37.173048  40.755817
77.654407  37.173048   32.979318  66.933119      40.899322
AMD              18.104501  34.390956   17.962160  14.739325  15.179132
82.529134  14.740084   18.031139  66.701443      15.163581
AAPL              6.365755  24.625863   41.723413   9.203447  12.946052
69.276475   9.203893    6.370442  59.404395      13.136228
```

```
Assets returns prediction for the next 30 days
      Exponential smoothing   Prophet Auto-ARIMA   Theta(2)      ARIMA          FFT
FourTheta NaiveDrift  NaiveMean NaiveSeasonal
SEDG                -2.761 %   4.699 %   -3.917 %  -2.901 %  -3.572 %  -61.778 %
-2.901 %   -2.473 %  -48.174 %      -3.917 %
```

```
MSFT               2.467 %  10.456 %    2.457 %   2.093 %   1.177 %  -48.612 %
2.091 %    2.562 %  -33.419 %        1.336 %
MDB                5.089 %  31.008 %    6.484 %   8.167 %   8.307 %    -63.7 %
8.167 %    8.306 %  -20.438 %        6.655 %
FTNT               2.661 %  16.535 %    2.452 %   1.889 %   0.393 %  -56.995 %
1.889 %    2.452 %  -51.728 %        1.043 %
AMD                  3.1 %  52.438 %    2.023 %   3.314 %   2.016 %  -51.136 %
3.314 %      3.4 %  -29.567 %        1.988 %
AAPL               2.845 %  15.603 %    3.055 %    2.72 %   1.875 %  -45.362 %
2.72 %     3.055 %   -37.92 %        1.836 %


Portfolio returns prediction for the next 30 days
Exponential smoothing      2.233500
Prophet                   21.789833
Auto-ARIMA                 2.092333
Theta(2)                   2.547000
ARIMA                      1.699333
FFT                      -54.597167
FourTheta                  2.546667
NaiveDrift                 2.883667
NaiveMean                -36.874333
NaiveSeasonal              1.490167
Name: 0, dtype: float64
```

```python
import pandas as pd
AAPL = pd.read_csv('nasdaqtechend.csv')
AAPL= AAPL[['Date', 'AAPL']]

CDNS = pd.read_csv('nasdaqtechend.csv')
CDNS = CDNS[['Date', 'CDNS']]

AMD = pd.read_csv('nasdaqtechend.csv')
AMD = AMD[['Date', 'AMD']]

FTNT = pd.read_csv('nasdaqtechend.csv')
FTNT = FTNT[['Date', 'FTNT']]

MDB = pd.read_csv('nasdaqtechend.csv')
MDB = MDB[['Date', 'MDB']]

MSFT = pd.read_csv('nasdaqtechend.csv')
MSFT = MSFT[['Date', 'MSFT']]

SEDG = pd.read_csv('nasdaqtechend.csv')
SEDG = SEDG[['Date', 'SEDG']]
```

3 Progression and Prediction

3.1 AAPL (Apple)

```
[12]: fig1 = go.Figure()
      fig1.add_trace(
          go.Scatter(
              x=AAPL.Date,
              y=AAPL.AAPL,
              name='AAPL Progression '


          )
      )
```

```
[100]: AAPL_pre = AAPL.rename(columns={
           'Date': 'ds',
           'AAPL': 'y'
       })

       AAPL_pre
```

```
[100]:              ds           y
       0     2017-06-01   36.252579
       1     2017-06-02   36.789810
       2     2017-06-05   36.430080
       3     2017-06-06   36.553139
       4     2017-06-07   36.770878
       ...          ...         ...
       1276  2022-06-27  141.660004
       1277  2022-06-28  137.440002
       1278  2022-06-29  139.229996
       1279  2022-06-30  136.720001
       1280  2022-07-01  138.929993

       [1281 rows x 2 columns]
```

3.1.1 Meta Prophet Prediction model

```
[101]: from prophet import Prophet
       m = Prophet(
           yearly_seasonality=False,
           weekly_seasonality=False,
           daily_seasonality=True,
           seasonality_mode='additive'


       )
```

```
m.fit(AAPL_pre)
future =m.make_future_dataframe(periods = 30)

future.tail(30)
```

```
2022-07-26 06:50:32 cmdstanpy DEBUG: cmd: where.exe tbb.dll
cwd: None
2022-07-26 06:50:32.544 DEBUG   cmdstanpy: cmd: where.exe tbb.dll
cwd: None
2022-07-26 06:50:36 cmdstanpy DEBUG: TBB already found in load path
2022-07-26 06:50:36.704 DEBUG   cmdstanpy: TBB already found in load path
2022-07-26 06:50:37 cmdstanpy DEBUG: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\9mmbabzv.json
2022-07-26 06:50:37.272 DEBUG   cmdstanpy: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\9mmbabzv.json
2022-07-26 06:50:37 cmdstanpy DEBUG: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\4mmoh59h.json
2022-07-26 06:50:37.367 DEBUG   cmdstanpy: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\4mmoh59h.json
2022-07-26 06:50:37 cmdstanpy DEBUG: idx 0
2022-07-26 06:50:37.531 DEBUG   cmdstanpy: idx 0
2022-07-26 06:50:37 cmdstanpy DEBUG: running CmdStan, num_threads: None
2022-07-26 06:50:37.532 DEBUG   cmdstanpy: running CmdStan, num_threads: None
2022-07-26 06:50:37 cmdstanpy DEBUG: CmdStan args:
['C:\\Users\\manne\\anaconda3\\Lib\\site-
packages\\prophet\\stan_model\\prophet_model.bin', 'random', 'seed=79135',
'data',
'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\9mmbabzv.json',
'init=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\4mmoh59h.json',
'output', 'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpjw3avdit\\prophet_mod
el-20220726065037.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']
2022-07-26 06:50:37.533 DEBUG   cmdstanpy: CmdStan args:
['C:\\Users\\manne\\anaconda3\\Lib\\site-
packages\\prophet\\stan_model\\prophet_model.bin', 'random', 'seed=79135',
'data',
'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\9mmbabzv.json',
'init=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\4mmoh59h.json',
'output', 'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpjw3avdit\\prophet_mod
el-20220726065037.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']
06:50:37 - cmdstanpy - INFO - Chain [1] start processing
2022-07-26 06:50:37 cmdstanpy INFO: Chain [1] start processing
2022-07-26 06:50:37.558 INFO    cmdstanpy: Chain [1] start processing
06:50:39 - cmdstanpy - INFO - Chain [1] done processing
2022-07-26 06:50:39 cmdstanpy INFO: Chain [1] done processing
2022-07-26 06:50:39.379 INFO    cmdstanpy: Chain [1] done processing
```

```
[101]:              ds
       1281 2022-07-02
       1282 2022-07-03
       1283 2022-07-04
       1284 2022-07-05
       1285 2022-07-06
       1286 2022-07-07
       1287 2022-07-08
       1288 2022-07-09
       1289 2022-07-10
       1290 2022-07-11
       1291 2022-07-12
       1292 2022-07-13
       1293 2022-07-14
       1294 2022-07-15
       1295 2022-07-16
       1296 2022-07-17
       1297 2022-07-18
       1298 2022-07-19
       1299 2022-07-20
       1300 2022-07-21
       1301 2022-07-22
       1302 2022-07-23
       1303 2022-07-24
       1304 2022-07-25
       1305 2022-07-26
       1306 2022-07-27
       1307 2022-07-28
       1308 2022-07-29
       1309 2022-07-30
       1310 2022-07-31
```

```
[102]: df_no_weekdays = future[future['ds'].dt.dayofweek < 5]
       df_no_weekdays
```

```
[102]:              ds
       0     2017-06-01
       1     2017-06-02
       2     2017-06-05
       3     2017-06-06
       4     2017-06-07
       ...          ...
       1304 2022-07-25
       1305 2022-07-26
       1306 2022-07-27
       1307 2022-07-28
       1308 2022-07-29
```

```
[1301 rows x 1 columns]
```

`[ ]:` `#df_no_weekdays.to_csv('dscommon.csv')`

`[ ]:` `#AAPL_pre.to_csv('AAPL_pre.csv')`

`[148]:` `#AAPL_done = pd.read_csv('AAPL_done.csv')`
`#AAPL_done`

`[148]:`
```
            ds          y
0     2017-06-01  36.252575
1     2017-06-02  36.789818
2     2017-06-05  36.430077
3     2017-06-06  36.553143
4     2017-06-07  36.770874
...          ...        ...
1295  2022-07-25        NaN
1296  2022-07-26        NaN
1297  2022-07-27        NaN
1298  2022-07-28        NaN
1299  2022-07-29        NaN

[1300 rows x 2 columns]
```

`[103]:` `forecast = m.predict(future)`

`forecast[['ds', 'yhat','yhat_lower', 'yhat_upper']].tail(30)`

`[103]:`
```
              ds        yhat  yhat_lower  yhat_upper
1281  2022-07-02  165.723933  156.280286  175.510925
1282  2022-07-03  165.790222  155.450714  174.964443
1283  2022-07-04  165.856511  156.805683  175.399056
1284  2022-07-05  165.922800  156.611391  175.816727
1285  2022-07-06  165.989089  155.888867  175.403957
1286  2022-07-07  166.055378  156.616652  176.232304
1287  2022-07-08  166.121667  155.860973  176.059800
1288  2022-07-09  166.187956  156.168610  176.138634
1289  2022-07-10  166.254246  156.992182  176.114407
1290  2022-07-11  166.320535  156.812415  176.574378
1291  2022-07-12  166.386824  156.860889  175.982992
1292  2022-07-13  166.453113  156.135357  176.878726
1293  2022-07-14  166.519402  155.708040  176.512120
1294  2022-07-15  166.585691  157.279467  176.439023
1295  2022-07-16  166.651980  156.874953  176.332449
1296  2022-07-17  166.718269  156.975085  177.304538
1297  2022-07-18  166.784558  156.652144  177.118740
```

17

```
1298 2022-07-19  166.850848  157.011100  177.828059
1299 2022-07-20  166.917137  157.073232  177.400002
1300 2022-07-21  166.983426  156.887532  176.529771
1301 2022-07-22  167.049715  156.545348  176.538137
1302 2022-07-23  167.116004  157.222845  177.446968
1303 2022-07-24  167.182293  157.757072  176.795670
1304 2022-07-25  167.248582  157.616364  176.885370
1305 2022-07-26  167.314871  157.334487  177.931089
1306 2022-07-27  167.381160  157.074446  176.514056
1307 2022-07-28  167.447450  157.710854  177.571697
1308 2022-07-29  167.513739  157.595667  177.903495
1309 2022-07-30  167.580028  157.434041  177.908893
1310 2022-07-31  167.646317  157.553855  177.642633
```

[104]:
```python
df_no_weekdays = forecast[forecast['ds'].dt.dayofweek < 5]
df_no_weekdays
```

[104]:
```
              ds        trend  yhat_lower  yhat_upper  trend_lower  trend_upper  \
0     2017-06-01   35.885408   25.023327   44.683805    35.885408    35.885408
1     2017-06-02   35.912162   25.211330   45.396780    35.912162    35.912162
2     2017-06-05   35.992421   25.458974   45.643555    35.992421    35.992421
3     2017-06-06   36.019174   25.311925   44.836022    36.019174    36.019174
4     2017-06-07   36.045928   25.770004   45.491855    36.045928    36.045928
...          ...         ...         ...         ...          ...          ...
1304  2022-07-25  168.142832  157.616364  176.885370   168.106890   168.228323
1305  2022-07-26  168.209121  157.334487  177.931089   168.161063   168.305770
1306  2022-07-27  168.275411  157.074446  176.514056   168.218873   168.382732
1307  2022-07-28  168.341700  157.710854  177.571697   168.271277   168.460949
1308  2022-07-29  168.407989  157.595667  177.903495   168.327433   168.539520

      additive_terms  additive_terms_lower  additive_terms_upper     daily  \
0           -0.89425              -0.89425              -0.89425  -0.89425
1           -0.89425              -0.89425              -0.89425  -0.89425
2           -0.89425              -0.89425              -0.89425  -0.89425
3           -0.89425              -0.89425              -0.89425  -0.89425
4           -0.89425              -0.89425              -0.89425  -0.89425
...              ...                   ...                   ...       ...
1304        -0.89425              -0.89425              -0.89425  -0.89425
1305        -0.89425              -0.89425              -0.89425  -0.89425
1306        -0.89425              -0.89425              -0.89425  -0.89425
1307        -0.89425              -0.89425              -0.89425  -0.89425
1308        -0.89425              -0.89425              -0.89425  -0.89425

      daily_lower  daily_upper  multiplicative_terms  \
0        -0.89425     -0.89425                   0.0
1        -0.89425     -0.89425                   0.0
2        -0.89425     -0.89425                   0.0
```

```
3          -0.89425         -0.89425                    0.0
4          -0.89425         -0.89425                    0.0
...              ...              ...                    ...
1304       -0.89425         -0.89425                    0.0
1305       -0.89425         -0.89425                    0.0
1306       -0.89425         -0.89425                    0.0
1307       -0.89425         -0.89425                    0.0
1308       -0.89425         -0.89425                    0.0

      multiplicative_terms_lower  multiplicative_terms_upper        yhat
0                            0.0                         0.0   34.991158
1                            0.0                         0.0   35.017911
2                            0.0                         0.0   35.098171
3                            0.0                         0.0   35.124924
4                            0.0                         0.0   35.151678
...                          ...                         ...         ...
1304                         0.0                         0.0  167.248582
1305                         0.0                         0.0  167.314871
1306                         0.0                         0.0  167.381160
1307                         0.0                         0.0  167.447450
1308                         0.0                         0.0  167.513739

[1301 rows x 16 columns]
```

```
[108]: fig = plot_plotly(m, df_no_weekdays)
       py.iplot(fig)
```

```
[109]: m1 = Prophet(
           changepoint_prior_scale=0.25, # increasing it will make the trend more
       ↪flexible
           changepoint_range=0.97, # place potential changepoints in the first 98% of
       ↪the time series
           yearly_seasonality=False,
           weekly_seasonality=False,
           daily_seasonality=True,
           seasonality_mode='multiplicative'
       )

       m1.fit(AAPL_pre)

       future1 = m1.make_future_dataframe(periods=30)
       forecast1 = m1.predict(future1)
       df_no_weekdays1 = forecast1[forecast1['ds'].dt.dayofweek < 5]
       #forecast[['ds', 'yhat','yhat_lower', 'yhat_upper']].tail(20)
       fig1 = plot_plotly(m1, df_no_weekdays1)
       py.iplot(fig1)
```

```
2022-07-26 06:53:16 cmdstanpy DEBUG: cmd: where.exe tbb.dll
```

```
cwd: None
2022-07-26 06:53:16.617 DEBUG    cmdstanpy: cmd: where.exe tbb.dll
cwd: None
2022-07-26 06:53:16 cmdstanpy DEBUG: TBB already found in load path
2022-07-26 06:53:16.837 DEBUG    cmdstanpy: TBB already found in load path
2022-07-26 06:53:16 cmdstanpy DEBUG: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\xk73fh7p.json
2022-07-26 06:53:16.862 DEBUG    cmdstanpy: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\xk73fh7p.json
2022-07-26 06:53:16 cmdstanpy DEBUG: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\ft4fej7k.json
2022-07-26 06:53:16.873 DEBUG    cmdstanpy: input tempfile:
C:\Users\manne\AppData\Local\Temp\tmpxilduzrp\ft4fej7k.json
2022-07-26 06:53:16 cmdstanpy DEBUG: idx 0
2022-07-26 06:53:16.880 DEBUG    cmdstanpy: idx 0
2022-07-26 06:53:16 cmdstanpy DEBUG: running CmdStan, num_threads: None
2022-07-26 06:53:16.882 DEBUG    cmdstanpy: running CmdStan, num_threads: None
2022-07-26 06:53:16 cmdstanpy DEBUG: CmdStan args:
['C:\\Users\\manne\\anaconda3\\Lib\\site-
packages\\prophet\\stan_model\\prophet_model.bin', 'random', 'seed=60310',
'data',
'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\xk73fh7p.json',
'init=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\ft4fej7k.json',
'output', 'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmp2uawqa40\\prophet_mod
el-20220726065316.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']
2022-07-26 06:53:16.884 DEBUG    cmdstanpy: CmdStan args:
['C:\\Users\\manne\\anaconda3\\Lib\\site-
packages\\prophet\\stan_model\\prophet_model.bin', 'random', 'seed=60310',
'data',
'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\xk73fh7p.json',
'init=C:\\Users\\manne\\AppData\\Local\\Temp\\tmpxilduzrp\\ft4fej7k.json',
'output', 'file=C:\\Users\\manne\\AppData\\Local\\Temp\\tmp2uawqa40\\prophet_mod
el-20220726065316.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']
06:53:16 - cmdstanpy - INFO - Chain [1] start processing
2022-07-26 06:53:16 cmdstanpy INFO: Chain [1] start processing
2022-07-26 06:53:16.885 INFO    cmdstanpy: Chain [1] start processing
06:53:17 - cmdstanpy - INFO - Chain [1] done processing
2022-07-26 06:53:17 cmdstanpy INFO: Chain [1] done processing
2022-07-26 06:53:17.756 INFO    cmdstanpy: Chain [1] done processing
```

```python
import pandas_datareader as web
ticker = ["AAPL"]
AAPL2 = pd.DataFrame
AAPL2 = web.DataReader(ticker,'yahoo', start= '2017-06-01',end= '2022-07-05')
#AAPL2 = AAPL2[:-1]
```

```
AAPL2
```

[87]:
```
Attributes    Adj Close         Close          High           Low          Open  \
Symbols            AAPL          AAPL          AAPL          AAPL          AAPL
Date
2017-06-01    36.252575     38.294998     38.332500     38.055000     38.292500
2017-06-02    36.789810     38.862499     38.862499     38.222500     38.395000
2017-06-05    36.430073     38.482498     38.612499     38.365002     38.584999
2017-06-06    36.553143     38.612499     38.952499     38.445000     38.474998
2017-06-07    36.770885     38.842499     38.994999     38.619999     38.755001
...                 ...           ...           ...           ...           ...
2022-06-28   137.440002    137.440002    143.419998    137.320007    142.130005
2022-06-29   139.229996    139.229996    140.669998    136.669998    137.460007
2022-06-30   136.720001    136.720001    138.369995    133.770004    137.250000
2022-07-01   138.929993    138.929993    139.039993    135.660004    136.039993
2022-07-05   141.559998    141.559998    141.610001    136.929993    137.770004

Attributes        Volume
Symbols             AAPL
Date
2017-06-01    65616400.0
2017-06-02   111082800.0
2017-06-05   101326800.0
2017-06-06   106499600.0
2017-06-07    84278400.0
...                  ...
2022-06-28    67083400.0
2022-06-29    66242400.0
2022-06-30    98964500.0
2022-07-01    71007500.0
2022-07-05    73353800.0

[1282 rows x 6 columns]
```

[88]:
```python
#
def min_max_scaling(x):
    x_np = np.asarray(x)
    return (x_np - x_np.min()) / (x_np.max() - x_np.min() + 1e-7 ) #1e-7  0


#    :
def reverse_min_max_scaling(org_x, x): #
    org_x_np = np.asarray(org_x)
    x_np = np.asarray(x)
    return (x_np * (org_x_np.max() - org_x_np.min() + 1e-7)) + org_x_np.min()
```

```
[89]: input_dcm_cnt = 10 #
      output_dcm_cnt = 1 #

      seq_length = 28 #1      (        )
      rnn_cell_hidden_dim = 20 #
      forget_bias = 1.0 #  (   1.0)
      num_stacked_layers = 1 #Stacked LSTM Layers
      keep_prob = 1.0 #Dropout   Keep

      epoch_num = 1000 #     (      )
      learning_rate = 0.01 #
```

```
[90]: stock_info = AAPL2.values[1:].astype(np.float)
      stock_info
```

```
[90]: array([[3.67898102e+01, 3.88624992e+01, 3.88624992e+01, 3.82224998e+01,
               3.83950005e+01, 1.11082800e+08],
              [3.64300728e+01, 3.84824982e+01, 3.86124992e+01, 3.83650017e+01,
               3.85849991e+01, 1.01326800e+08],
              [3.65531425e+01, 3.86124992e+01, 3.89524994e+01, 3.84449997e+01,
               3.84749985e+01, 1.06499600e+08],
              ...,
              [1.36720001e+02, 1.36720001e+02, 1.38369995e+02, 1.33770004e+02,
               1.37250000e+02, 9.89645000e+07],
              [1.38929993e+02, 1.38929993e+02, 1.39039993e+02, 1.35660004e+02,
               1.36039993e+02, 7.10075000e+07],
              [1.41559998e+02, 1.41559998e+02, 1.41610001e+02, 1.36929993e+02,
               1.37770004e+02, 7.33538000e+07]])
```

```
[91]: price = stock_info[:,:-1] # <- here
      norm_price = min_max_scaling(price)
      norm_price.shape #Jupyter Notebook, etc environment = print(price.shape)
```

```
[91]: (1281, 5)
```

```
[92]: volume = stock_info[:,-1:] # <- here
      norm_volume = min_max_scaling(volume)
      norm_volume.shape
```

```
[92]: (1281, 1)
```

```
[93]: x = np.concatenate((norm_price, norm_volume), axis=1)
      y = x[:, [-2]]
      dataX = []
      dataY = []

      for i in range(0, len(y) - seq_length):
          _x = x[i:i+seq_length]
```

```
    _y = y[i+seq_length]
    if i is 0:
        print(_x, "->", _y)
    dataX.append(_x)
    dataY.append(_y)
train_size = int(len(dataY) * 0.7)
test_size = len(dataY) - train_size
```

```
[[0.02089678 0.03478234 0.03478234 0.03049479 0.03165043 0.18179243]
 [0.0184868  0.0322366  0.03310751 0.03144946 0.03292328 0.15648569]
 [0.01931128 0.03310751 0.03538528 0.03198539 0.03218636 0.16990376]
 [0.02077    0.03464835 0.03566999 0.03315776 0.03406218 0.11226272]
 [0.0201675  0.03401193 0.03493307 0.03302377 0.03444738 0.11414282]
 [0.01063862 0.02394623 0.03434689 0.01898876 0.03434689 0.56686156]
 [0.00499416 0.01798386 0.01910599 0.01311012 0.01851981 0.64389821]
 [0.00684926 0.0199434  0.02138375 0.01753165 0.02089806 0.24814298]
 [0.004582   0.01754841 0.0214675  0.01533763 0.0214675  0.22081087]
 [0.00320265 0.0160913  0.01640952 0.01260769 0.01446674 0.22739125]
 [0.         0.01270817 0.01644302 0.01259092 0.01523715 0.41618739]
 [0.00645286 0.01952469 0.02019464 0.01503618 0.01503618 0.23129257]
 [0.0043442  0.01729718 0.02041235 0.01717995 0.02041235 0.15200747]
 [0.00570776 0.01873752 0.01907251 0.01662726 0.01815135 0.11429846]
 [0.00532723 0.01833558 0.02012763 0.01748141 0.01857006 0.09189178]
 [0.00635779 0.01942421 0.02089806 0.01746467 0.01749817 0.26136183]
 [0.00562843 0.0186538  0.02277386 0.01791688 0.0209148  0.16022827]
 [0.00231477 0.0151534  0.01922324 0.01496917 0.01729718 0.15057353]
 [0.00564435 0.01867054 0.01913949 0.01419877 0.01642629 0.12277139]
 [0.00223547 0.01506966 0.01749817 0.01272491 0.01679475 0.22048092]
 [0.00277457 0.01563912 0.01721345 0.01523715 0.01635928 0.13254235]
 [0.00195016 0.0147682  0.01778289 0.01409828 0.01707947 0.04179191]
 [0.0028855  0.01575634 0.01692871 0.01346184 0.01508642 0.11745065]
 [0.00072929 0.01347858 0.0147682  0.01294265 0.01396429 0.14400457]
 [0.00302823 0.01590707 0.01686173 0.0137633  0.0137633  0.09288164]
 [0.00442345 0.01738092 0.01887151 0.01455047 0.01578984 0.11248061]
 [0.00516866 0.01816809 0.01870405 0.01624205 0.01682823 0.09890068]
 [0.00550157 0.01851981 0.01925672 0.01697898 0.01873752 0.15184561]] ->
[0.01811785]
```

[94]:
```
train_size = int(len(dataY) * 0.7)
test_size = len(dataY) - train_size

trainX = np.array(dataX[0:train_size])
trainY = np.array(dataY[0:train_size])

testX = np.array(dataX[train_size:len(dataX)])
testY = np.array(dataY[train_size:len(dataY)])
```

```
[95]: X = tf.placeholder(tf.float32, [None,seq_length, input_dcm_cnt])
      Y = tf.placeholder(tf.float32, [None,1])
      print("X:",X)
      print("Y:",Y)

      targets = tf.placeholder(tf.float32, [None, 1])
      predictions = tf.placeholder(tf.float32, [None, 1])
      print("targets", targets)
      print("predictions", predictions)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_29988/803435220.py in <module>
----> 1 X = tf.placeholder(tf.float32, [None,seq_length, input_dcm_cnt])
      2 Y = tf.placeholder(tf.float32, [None,1])
      3 print("X:",X)
      4 print("Y:",Y)
      5

AttributeError: module 'tensorflow' has no attribute 'placeholder'
```

```
[ ]: import tensorflow.compat.v1 as tf1
     tf1.disable_v2_behavior()
     import tensorflow as tf2 #Tensorflow 2.x

     (num_units=10,

                             state_is_tuple=True,
                             initializer= tf2.initializers.GlorotUniform()
                             )
```

```
[ ]: def lstm_cell():
         cell = tf.contrib.rnn.BasicLSTMCell(num_units=rnn_cell_hidden_dim,
                                             forget_bias=forget_bias,
                                             state_is_tuple=True,
                                             activation=tf.nn.softsign)
         if keep_prob < 1.0 :
             cell = tf.contrib.rnn.DropoutWrapper(cell, output_keep_prob=keep_prob)
         return cell
```

```
[ ]:
     stackedRNNs = [lstm_cell()for _ in range(num_stacked_layers)] #Stacked LSTM
      ↪Layers    1
     multi_cells = tf.contrib.rnn.MultiRNNCell(stackedRNNs, state_is_tuple=True)if
      ↪num_stacked_layers > 1 else lstm_cell()
```

```python
hypothesis, _states = tf.nn.dynamic_rnn(multi_cells, X, dtype=tf.float32)
hypothesis = tf.contrib.layers.fully_connected(hypothesis[:,-1],␣
 →output_dcm_cnt, activation_fn=tf.identity)
hypothesis.shape
```

```python
loss = tf.reduce_sum(tf.square(hypothesis - Y))
optimizer = tf.train.AdamOptimizer(learning_rate)
train = optimizer.minimize(loss)

rmse = tf.sqrt(tf.reduce_mean(tf.squared_difference(targets, predictions)))
```

[ ]:

[ ]:

[ ]:

[ ]:

```python
AAPL2.isnull().sum()
```

```python
high_prices = AAPL2['High'].values
low_prices = AAPL2['Low'].values
#mid_prices = (high_prices + low_prices)/2
prices = AAPL2['Close'].values
```

```python
seq_len = 28
sequence_length = seq_len +1

result = []
for index in range(len(prices) - sequence_length):
    result.append(prices[index: index + sequence_length])
```

```python
normalized_data = []
for window in result:
    normalized_window = [((float(p) / float(window[0])) -1) for p in window]
    normalized_data.append(normalized_window)

result = np.array(normalized_data)

row = int(round(result.shape[0]*0.9)) ##    0.9
train = result[:row, :]
np.random.shuffle(train) ##

x_train = train[:, :-1]
x_train = np.reshape(x_train, (x_train.shape[0], x_train.shape[1], 1))
y_train = train[:, -1]
```

```
x_test = result[row:, :-1]
x_test = np.reshape(x_test, (x_test.shape[0], x_test.shape[1], 1))
y_test = result[row:, -1]

x_train.shape, x_test.shape
```

```
[ ]: from keras.models import Sequential
     from keras.layers import LSTM, Dropout, Dense, Activation
     model = Sequential()
     model.add(LSTM(28, return_sequences= True, input_shape=(28, 1)))
     model.add(LSTM(28, return_sequences= False)) ##LSTM
     model.add(Dense(1, activation='linear'))
     model.compile(loss='mse', optimizer='rmsprop') # MSE = Mean Squared Error /
     model.summary()
```

[ ]:

[ ]:

[ ]:

[153]:

```
[ ]: fig1 = m1.plot(forecast1)
     a = add_changepoints_to_plot(fig1.gca(), m1, forecast1)
```

[ ]:

3.1.2 AAPL XGBoost Model Prediction

```
[53]: import os
      import numpy as np
      import pandas as pd
      import xgboost as xgb
      import matplotlib.pyplot as plt
      from xgboost import plot_importance, plot_tree
      from sklearn.metrics import mean_squared_error
      from sklearn.preprocessing import MinMaxScaler
      from sklearn.model_selection import train_test_split, GridSearchCV

      # Time series decomposition
      #!pip install stldecompose
      from statsmodels.tsa.seasonal import seasonal_decompose

      # Chart drawing
      import plotly as py
```

```python
import plotly.io as pio
import plotly.graph_objects as go
from plotly.subplots import make_subplots
from plotly.offline import download_plotlyjs, init_notebook_mode, plot, iplot

# Mute sklearn warnings
from warnings import simplefilter
simplefilter(action='ignore', category=FutureWarning)
simplefilter(action='ignore', category=DeprecationWarning)

# Show charts when running kernel
init_notebook_mode(connected=True)

# Change default background color for all visualizations
layout=go.Layout(paper_bgcolor='rgba(0,0,0,0)',
 plot_bgcolor='rgba(250,250,250,0.8)')
fig = go.Figure(layout=layout)
templated_fig = pio.to_templated(fig)
pio.templates['my_template'] = templated_fig.layout.template
pio.templates.default = 'my_template'
```

```python
[59]: import pandas_datareader as web
#ticker = pd.read_csv('./nasdaq_techundtelelar77.csv')['Symbol']
AAPL3 = pd.DataFrame
AAPL3 = web.DataReader('AAPL','yahoo', start= '2017-06-01',end= '2022-07-01')



AAPL3.to_csv('AAPL_hist_price.csv')
```

```python
[64]: AAPL3 = pd.read_csv('AAPL_hist_price.csv')
AAPL3
```

```
[64]:             Date        High         Low        Open       Close      Volume  \
      0     2017-06-01   38.332500   38.055000   38.292500   38.294998    65616400
      1     2017-06-02   38.862499   38.222500   38.395000   38.862499   111082800
      2     2017-06-05   38.612499   38.365002   38.584999   38.482498   101326800
      3     2017-06-06   38.952499   38.445000   38.474998   38.612499   106499600
      4     2017-06-07   38.994999   38.619999   38.755001   38.842499    84278400

      ...          ...         ...         ...         ...         ...         ...
      1276  2022-06-27  143.490005  140.970001  142.699997  141.660004    70207900
      1277  2022-06-28  143.419998  137.320007  142.130005  137.440002    67083400
      1278  2022-06-29  140.669998  136.669998  137.460007  139.229996    66242400
      1279  2022-06-30  138.369995  133.770004  137.250000  136.720001    98964500
      1280  2022-07-01  139.039993  135.660004  136.039993  138.929993    71007500

            Adj_Close
```

```
0      36.252583
1      36.789818
2      36.430077
3      36.553143
4      36.770878
...        ...
1276   141.660004
1277   137.440002
1278   139.229996
1279   136.720001
1280   138.929993

[1281 rows x 7 columns]
```

[65]:
```python
AAPL3['Date'] = pd.to_datetime(AAPL3['Date'])
AAPL3 = AAPL3[(AAPL3['Date'].dt.year >= 2017)].copy()
AAPL3.index = range(len(AAPL3))
```

[66]:
```python
fig = make_subplots(rows=2, cols=1)

fig.add_trace(go.Ohlc(x=AAPL3.Date,
                      open=AAPL3.Open,
                      high=AAPL3.High,
                      low=AAPL3.Low,
                      close=AAPL3.Adj_Close,
                      name='Price'), row=1, col=1)

fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.Volume, name='Volume'), row=2,␣
 ↪col=1)

fig.update(layout_xaxis_rangeslider_visible=False)
fig.show()
```

[67]:
```python
AAPL3_close = AAPL3[['Date', 'Adj_Close']].copy()
AAPL3_close = AAPL3_close.set_index('Date')
AAPL3_close.head()

decomp = seasonal_decompose(AAPL3_close, period=365)
fig = decomp.plot()
fig.set_size_inches(20, 8)
```

28

```
[68]: AAPL3['EMA_9'] = AAPL3['Adj_Close'].ewm(9).mean().shift()
      AAPL3['SMA_5'] = AAPL3['Adj_Close'].rolling(5).mean().shift()
      AAPL3['SMA_10'] = AAPL3['Adj_Close'].rolling(10).mean().shift()
      AAPL3['SMA_15'] = AAPL3['Adj_Close'].rolling(15).mean().shift()
      AAPL3['SMA_30'] = AAPL3['Adj_Close'].rolling(30).mean().shift()

      fig = go.Figure()
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.EMA_9, name='EMA 9'))
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.SMA_5, name='SMA 5'))
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.SMA_10, name='SMA 10'))
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.SMA_15, name='SMA 15'))
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.SMA_30, name='SMA 30'))
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.Close, name='Adj_Close',␣
       ↪opacity=0.2))
      fig.show()
```

```
[69]: def relative_strength_idx(AAPL3, n=14):
          close = AAPL3['Adj_Close']
          delta = close.diff()
          delta = delta[1:]
          pricesUp = delta.copy()
          pricesDown = delta.copy()
          pricesUp[pricesUp < 0] = 0
          pricesDown[pricesDown > 0] = 0
          rollUp = pricesUp.rolling(n).mean()
          rollDown = pricesDown.abs().rolling(n).mean()
          rs = rollUp / rollDown
          rsi = 100.0 - (100.0 / (1.0 + rs))
          return rsi

      AAPL3['RSI'] = relative_strength_idx(AAPL3).fillna(0)
```

```
fig = go.Figure(go.Scatter(x=AAPL3.Date, y=AAPL3.RSI, name='RSI'))
fig.show()
```

[70]:
```
#MACD

EMA_12 = pd.Series(AAPL3['Adj_Close'].ewm(span=12, min_periods=12).mean())
EMA_26 = pd.Series(AAPL3['Adj_Close'].ewm(span=26, min_periods=26).mean())
AAPL3['MACD'] = pd.Series(EMA_12 - EMA_26)
AAPL3['MACD_signal'] = pd.Series(AAPL3.MACD.ewm(span=9, min_periods=9).mean())

fig = make_subplots(rows=2, cols=1)
fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.Adj_Close, name='Adj_Close'),
 →row=1, col=1)
fig.add_trace(go.Scatter(x=AAPL3.Date, y=EMA_12, name='EMA 12'), row=1, col=1)
fig.add_trace(go.Scatter(x=AAPL3.Date, y=EMA_26, name='EMA 26'), row=1, col=1)
fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3['MACD'], name='MACD'), row=2,
 →col=1)
fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3['MACD_signal'], name='Signal
 →line'), row=2, col=1)
fig.show()
```

[71]:
```
AAPL3['Adj_Close'] = AAPL3['Adj_Close'].shift(-1)
```

[72]:
```
AAPL3 = AAPL3.iloc[33:] # Because of moving averages and MACD line
AAPL3 = AAPL3[:-1]       # Because of shifting close price

AAPL3.index = range(len(AAPL3))
```

[73]:
```
test_size  = 0.1
valid_size = 0.1

test_split_idx  = int(AAPL3.shape[0] * (1-test_size))
valid_split_idx = int(AAPL3.shape[0] * (1-(valid_size+test_size)))

train_df  = AAPL3.loc[:valid_split_idx].copy()
valid_df  = AAPL3.loc[valid_split_idx+1:test_split_idx].copy()
test_df   = AAPL3.loc[test_split_idx+1:].copy()

fig = go.Figure()
fig.add_trace(go.Scatter(x=train_df.Date, y=train_df.Adj_Close,
 →name='Training'))
fig.add_trace(go.Scatter(x=valid_df.Date, y=valid_df.Adj_Close,
 →name='Validation'))
fig.add_trace(go.Scatter(x=test_df.Date,  y=test_df.Adj_Close,  name='Test'))
fig.show()
```

```
[74]: drop_cols = ['Date', 'Volume', 'Open', 'Low', 'High','Close']

      train_df = train_df.drop(drop_cols, 1)
      valid_df = valid_df.drop(drop_cols, 1)
      test_df  = test_df.drop(drop_cols, 1)
```

```
[75]: y_train = train_df['Adj_Close'].copy()
      X_train = train_df.drop(['Adj_Close'], 1)

      y_valid = valid_df['Adj_Close'].copy()
      X_valid = valid_df.drop(['Adj_Close'], 1)

      y_test  = test_df['Adj_Close'].copy()
      X_test  = test_df.drop(['Adj_Close'], 1)

      X_train.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 998 entries, 0 to 997
Data columns (total 8 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   EMA_9        998 non-null    float64
 1   SMA_5        998 non-null    float64
 2   SMA_10       998 non-null    float64
 3   SMA_15       998 non-null    float64
 4   SMA_30       998 non-null    float64
 5   RSI          998 non-null    float64
 6   MACD         998 non-null    float64
 7   MACD_signal  998 non-null    float64
dtypes: float64(8)
memory usage: 62.5 KB
```

```
[76]: %%time

      parameters = {
          'n_estimators': [100, 200, 300, 400],
          'learning_rate': [0.001, 0.005, 0.01, 0.05],
          'max_depth': [8, 10, 12, 15],
          'gamma': [0.001, 0.005, 0.01, 0.02],
          'random_state': [42]
      }

      eval_set = [(X_train, y_train), (X_valid, y_valid)]
      model = xgb.XGBRegressor(eval_set=eval_set, objective='reg:squarederror',␣
        →verbose=False)
      clf = GridSearchCV(model, parameters)
```

```python
clf.fit(X_train, y_train)

print(f'Best params: {clf.best_params_}')
print(f'Best validation score = {clf.best_score_}')
```

[06:17:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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```
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[06:17:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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```

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[06:17:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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[06:17:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:17:45] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:55] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:55] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:17:55] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:17:56] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:17:56] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:17:56] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:17:58] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:17:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:17:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
   verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
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   verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
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   verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:18:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
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   verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
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   verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:18:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:07] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:07] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:07] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:18:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:10] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:10] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:10] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:13] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:17] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:17] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:18] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:18:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

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[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.


[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:18:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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verification. Please open an issue if you find above cases.

[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:18:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:25] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:26] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:26] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:27] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:27] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:27] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:30] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:30] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

```
[06:18:33] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:18:33] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core.  Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.


[06:18:34] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
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[06:18:34] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:18:34] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

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  verification. Please open an issue if you find above cases.

[06:18:35] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:36] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:36] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:37] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:18:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:45] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:45] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:46] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:46] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:51] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:51] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:54] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:55] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:56] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:18:56] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:18:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:18:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:01] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:04] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:19:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
    passed down to XGBoost core. Or some parameters are not used but slip through this
    verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
    passed down to XGBoost core. Or some parameters are not used but slip through this
    verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
    passed down to XGBoost core. Or some parameters are not used but slip through this
    verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
    passed down to XGBoost core. Or some parameters are not used but slip through this
    verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
    passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:13] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:14] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

```
[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
```

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:17] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:18] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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[06:19:18] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

```
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[06:19:25] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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[06:19:26] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  verification. Please open an issue if you find above cases.

[06:19:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:19:30] WARNING: C:/Users/Administrator/workspace/xgboost-

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[06:19:31] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  verification. Please open an issue if you find above cases.

[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:19:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:19:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:19:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but

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[06:19:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:43] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:44] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  verification. Please open an issue if you find above cases.

[06:19:46] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:46] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:47] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:19:50] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:51] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:51] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:51] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:52] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:19:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:19:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:55] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:19:55] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:19:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:19:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:19:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:19:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:19:58] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:58] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:19:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but

  passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:20:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

  passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:20:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

  passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:20:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

  passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:20:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:20:01] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this

verification. Please open an issue if you find above cases.

[06:20:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:07] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:10] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:17] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:20:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:27] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:20:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:33] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:34] WARNING: C:/Users/Administrator/workspace/xgboost-

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win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:36] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:36] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

174

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:36] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:36] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:20:44] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:20:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:20:46] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:20:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:20:48] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:20:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:20:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:20:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:20:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:20:51] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:20:51] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:20:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:20:53] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:20:55] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:20:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:20:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
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   passed down to XGBoost core. Or some parameters are not used but slip through
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[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
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   verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:20:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:20:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:20:59] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

```
[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.


[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:01] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:02] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:03] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:05] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

```
[06:21:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:07] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:21:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

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[06:21:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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Parameters: { "eval_set", "verbose" } might not be used.

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Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:21:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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bindings but
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  verification. Please open an issue if you find above cases.

[06:21:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through

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  verification. Please open an issue if you find above cases.

[06:21:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:18] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:21:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:20] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:20] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:20] WARNING: C:/Users/Administrator/workspace/xgboost-
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  verification. Please open an issue if you find above cases.

[06:21:21] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:21] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

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[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:21:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:26] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:27] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:27] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:27] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:28] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:21:28] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:28] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:29] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:21:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:21:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:30] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:31] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:33] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:21:33] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:21:34] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:21:35] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:35] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:35] WARNING: C:/Users/Administrator/workspace/xgboost-
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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:21:35] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:36] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:36] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:37] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:37] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:21:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:21:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
   verification. Please open an issue if you find above cases.

[06:21:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through this
   verification. Please open an issue if you find above cases.

[06:21:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through this
   verification. Please open an issue if you find above cases.

[06:21:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through this
   verification. Please open an issue if you find above cases.

[06:21:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through this
   verification. Please open an issue if you find above cases.

```
[06:21:41] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:42] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:45] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:21:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:46] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:46] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:47] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:47] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:21:48] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:21:48] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:21:49] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:21:49] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:21:50] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:21:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:51] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:52] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:53] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:53] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

```
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:53] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:54] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:54] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:21:54] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
```

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:54] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:55] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:57] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:21:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:22:04] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:04] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

```
[06:22:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:22:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:22:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:22:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:22:07] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.
```

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:08] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:22:10] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:11] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:12] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:13] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:16] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:17] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:18] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

251

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:19] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:22:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:21] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:22:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:23] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:24] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:22:25] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
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Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:37] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:37] WARNING: C:/Users/Administrator/workspace/xgboost-
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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:22:37] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
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  verification. Please open an issue if you find above cases.

[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  verification. Please open an issue if you find above cases.

[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:38] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:39] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:39] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:39] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:39] WARNING: C:/Users/Administrator/workspace/xgboost-
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  verification. Please open an issue if you find above cases.

[06:22:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:40] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:42] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:42] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through
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[06:22:43] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:44] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:45] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

```
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:45] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:46] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:22:46] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:46] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:22:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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```
[06:22:47] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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[06:22:47] WARNING: C:/Users/Administrator/workspace/xgboost-
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Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:47] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

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  verification. Please open an issue if you find above cases.

[06:22:48] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
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  passed down to XGBoost core. Or some parameters are not used but slip through
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  verification. Please open an issue if you find above cases.

[06:22:48] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:48] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:22:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:49] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:50] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  verification. Please open an issue if you find above cases.

[06:22:51] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:22:56] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  verification. Please open an issue if you find above cases.

[06:22:58] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:22:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:22:59] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:23:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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  verification. Please open an issue if you find above cases.

[06:23:00] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:23:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:23:01] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:23:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
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[06:23:02] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:23:02] WARNING: C:/Users/Administrator/workspace/xgboost-
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[06:23:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

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[06:23:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:23:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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[06:23:03] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
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  passed down to XGBoost core. Or some parameters are not used but slip through this
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[06:23:04] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:04] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:04] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:05] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:06] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:07] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:

Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:08] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:09] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:23:09] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:10] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:11] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:12] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:13] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:14] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:23:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:14] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:15] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:15] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:16] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:17] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:17] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:18] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:19] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:20] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this

verification. Please open an issue if you find above cases.

[06:23:21] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:21] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:21] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:22] WARNING: C:/Users/Administrator/workspace/xgboost-

win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:22] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:23] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language

bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:24] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:25] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

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[06:23:26] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:27] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:27] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:28] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
```

Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:23:29] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:23:30] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:23:31] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but
   passed down to XGBoost core. Or some parameters are not used but slip through
this
   verification. Please open an issue if you find above cases.

[06:23:32] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

   This may not be accurate due to some parameters are only used in language
bindings but

passed down to XGBoost core. Or some parameters are not used but slip through this

  verification. Please open an issue if you find above cases.

[06:23:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:32] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:33] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:33] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:33] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:34] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:35] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.

[06:23:35] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:36] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:37] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:38] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through

this
  verification. Please open an issue if you find above cases.

[06:23:39] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:40] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:41] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

[06:23:42] WARNING: C:/Users/Administrator/workspace/xgboost-win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language bindings but
  passed down to XGBoost core. Or some parameters are not used but slip through this
  verification. Please open an issue if you find above cases.

```
[06:23:43] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:44] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


[06:23:45] WARNING: C:/Users/Administrator/workspace/xgboost-
win64_release_1.4.0/src/learner.cc:573:
Parameters: { "eval_set", "verbose" } might not be used.

  This may not be accurate due to some parameters are only used in language
bindings but
  passed down to XGBoost core.  Or some parameters are not used but slip through
this
  verification. Please open an issue if you find above cases.


Best params: {'gamma': 0.001, 'learning_rate': 0.05, 'max_depth': 8,
'n_estimators': 300, 'random_state': 42}
Best validation score = -0.6277169130954067
Wall time: 6min 4s
```

[79]:
```
%%time

model = xgb.XGBRegressor(**clf.best_params_, objective='reg:squarederror')
model.fit(X_train, y_train, eval_set=eval_set, verbose=False)
```

```
Wall time: 899 ms
```

[79]:
```
XGBRegressor(base_score=0.5, booster='gbtree', colsample_bylevel=1,
             colsample_bynode=1, colsample_bytree=1, gamma=0.001, gpu_id=-1,
             importance_type='gain', interaction_constraints='',
```

```
      learning_rate=0.05, max_delta_step=0, max_depth=8,
      min_child_weight=1, missing=nan, monotone_constraints='()',
      n_estimators=300, n_jobs=16, num_parallel_tree=1, random_state=42,
      reg_alpha=0, reg_lambda=1, scale_pos_weight=1, subsample=1,
      tree_method='exact', validate_parameters=1, verbosity=None)
```

```
[80]: plot_importance(model);
```

Feature importance

Feature	F score
EMA_9	3945
RSI	2407
MACD	1836
SMA_5	1792
MACD_signal	1469
SMA_10	1240
SMA_30	1204
SMA_15	1172
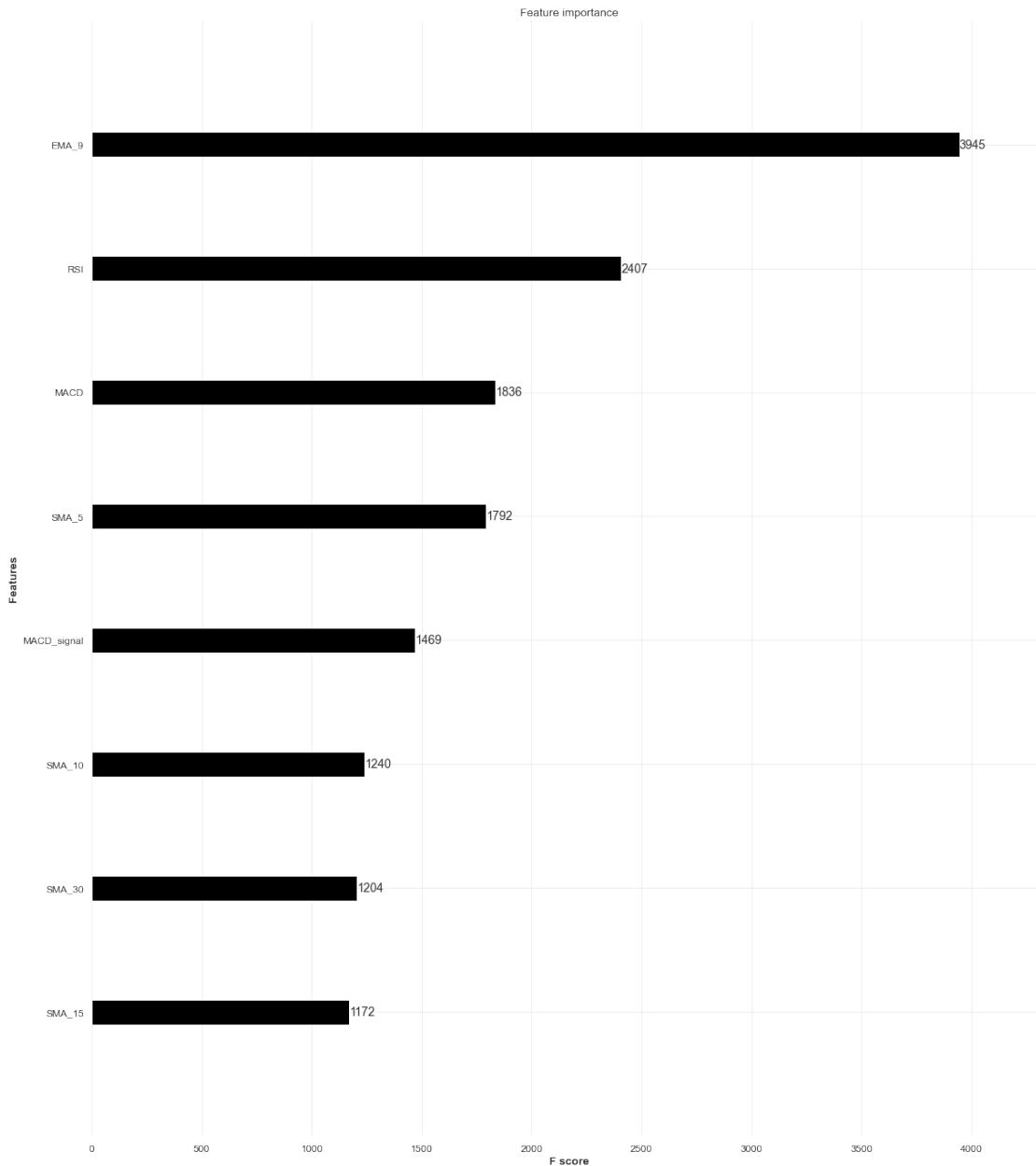
```
[81]: y_pred = model.predict(X_test)
      print(f'y_true = {np.array(y_test)[:5]}')
      print(f'y_pred = {y_pred[:5]}')
```

```
y_true = [179.2080383 174.4411316 171.5291138 171.6986542 171.7185974]
y_pred = [130.72328 130.0156  125.24902 127.10397 130.45857]
```

```
[82]: print(f'mean_squared_error = {mean_squared_error(y_test, y_pred)}')
```

```
mean_squared_error = 961.4951855988219
```

```
[83]: predicted_prices = AAPL3.loc[test_split_idx+1:].copy()
      predicted_prices['Adj_Close'] = y_pred

      fig = make_subplots(rows=2, cols=1)
      fig.add_trace(go.Scatter(x=AAPL3.Date, y=AAPL3.Adj_Close,
                               name='Truth',
                               marker_color='LightSkyBlue'), row=1, col=1)

      fig.add_trace(go.Scatter(x=predicted_prices.Date,
                               y=predicted_prices.Adj_Close,
                               name='Prediction',
                               marker_color='MediumPurple'), row=1, col=1)

      fig.add_trace(go.Scatter(x=predicted_prices.Date,
                               y=y_test,
                               name='Truth',
                               marker_color='LightSkyBlue',
                               showlegend=False), row=2, col=1)

      fig.add_trace(go.Scatter(x=predicted_prices.Date,
                               y=y_pred,
                               name='Prediction',
                               marker_color='MediumPurple',
                               showlegend=False), row=2, col=1)

      fig.show()
```

```
[ ]:
```

```
[86]: import math
      import matplotlib
      import numpy as np
      import pandas as pd
      import seaborn as sns
      import time
      import pandas_datareader.data as web
```

```python
from datetime import date, datetime, time, timedelta
from matplotlib import pyplot as plt
from pylab import rcParams
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error
from sklearn.metrics import r2_score
from tqdm import tqdm_notebook

%matplotlib inline


test_size = 0.2                         # proportion of dataset to be used as test set
cv_size = 0.2                           # proportion of dataset to be used as
 ↪cross-validation set
Nmax = 30                               # for feature at day t, we use lags from t-1,
 ↪t-2, ..., t-N as features
                                        # Nmax is the maximum N we are going to test
fontsize = 14
ticklabelsize = 14
```

```python
[107]: def get_preds_lin_reg(df, target_col, N, pred_min, offset):
           """
           Given a dataframe, get prediction at timestep t using values from t-1, t-2,
       ↪..., t-N.
           Inputs
               df          : dataframe with the values you want to predict. Can be of
       ↪any length.
               target_col : name of the column you want to predict e.g. 'adj_close'
               N           : get prediction at timestep t using values from t-1, t-2, ..
       ↪., t-N
               pred_min   : all predictions should be >= pred_min
               offset      : for df we only do predictions for df[offset:]. e.g. offset
       ↪can be size of training set
           Outputs
               pred_list  : the predictions for target_col. np.array of length
       ↪len(df)-offset.
           """

           regr = LinearRegression(fit_intercept=True)

           pred_list = []

           for i in range(offset, len(df['Adj_Close'])):
               X_train = np.array(range(len(df['Adj_Close'][i-N:i])))
               y_train = np.array(df['Adj_Close'][i-N:i])
               X_train = X_train.reshape(-1, 1)
```

```
        y_train = y_train.reshape(-1, 1)
#       print X_train.shape
#       print y_train.shape
#       print 'X_train = \n' + str(X_train)
#       print 'y_train = \n' + str(y_train)
        regr.fit(X_train, y_train)
        pred = regr.predict(np.array(N).reshape(1,-1))

        pred_list.append(pred[0][0])

    # If the values are < pred_min, set it to be pred_min
    pred_list = np.array(pred_list)
    pred_list[pred_list < pred_min] = pred_min

    return pred_list




def get_mape(y_true, y_pred):
    """
    Compute mean absolute percentage error (MAPE)
    """
    y_true, y_pred = np.array(y_true), np.array(y_pred)
    return np.mean(np.abs((y_true - y_pred) / y_true)) * 100
```

```
[92]: df = pd.read_csv('AAPL_hist_price.csv')
      df
```

[92]:

	Date	High	Low	Open	Close	Volume	\
0	2017-06-01	38.332500	38.055000	38.292500	38.294998	65616400	
1	2017-06-02	38.862499	38.222500	38.395000	38.862499	111082800	
2	2017-06-05	38.612499	38.365002	38.584999	38.482498	101326800	
3	2017-06-06	38.952499	38.445000	38.474998	38.612499	106499600	
4	2017-06-07	38.994999	38.619999	38.755001	38.842499	84278400	
...	...	...	...	...	...	...	
1277	2022-06-28	143.419998	137.320007	142.130005	137.440002	67083400	
1278	2022-06-29	140.669998	136.669998	137.460007	139.229996	66242400	
1279	2022-06-30	138.369995	133.770004	137.250000	136.720001	98964500	
1280	2022-07-01	139.039993	135.660004	136.039993	138.929993	71007500	
1281	2022-07-05	141.610001	136.929993	137.770004	141.559998	73353800	

	Adj_Close
0	36.252583
1	36.789814
2	36.430069

```
3        36.553143
4        36.770882
…            …
1277   137.440002
1278   139.229996
1279   136.720001
1280   138.929993
1281   141.559998

[1282 rows x 7 columns]
```

[93]: `df.columns`

[93]:
```
Index(['Date', 'High', 'Low', 'Open', 'Close', 'Volume', 'Adj_Close'],
      dtype='object')
```

[94]:
```python
# Convert Date column to datetime
df['Date'] = pd.to_datetime(df['Date'],format='%Y-%m-%d')
df
```

[94]:
```
           Date        High         Low        Open       Close      Volume  \
0    2017-06-01   38.332500   38.055000   38.292500   38.294998    65616400
1    2017-06-02   38.862499   38.222500   38.395000   38.862499   111082800
2    2017-06-05   38.612499   38.365002   38.584999   38.482498   101326800
3    2017-06-06   38.952499   38.445000   38.474998   38.612499   106499600
4    2017-06-07   38.994999   38.619999   38.755001   38.842499    84278400
…            …           …           …           …           …           …
1277 2022-06-28  143.419998  137.320007  142.130005  137.440002    67083400
1278 2022-06-29  140.669998  136.669998  137.460007  139.229996    66242400
1279 2022-06-30  138.369995  133.770004  137.250000  136.720001    98964500
1280 2022-07-01  139.039993  135.660004  136.039993  138.929993    71007500
1281 2022-07-05  141.610001  136.929993  137.770004  141.559998    73353800

        Adj_Close
0        36.252583
1        36.789814
2        36.430069
3        36.553143
4        36.770882
…            …
1277   137.440002
1278   139.229996
1279   136.720001
1280   138.929993
1281   141.559998

[1282 rows x 7 columns]
```

```
[95]:  # Plot adjusted close over time
       rcParams['figure.figsize'] = 10, 8 # width 10, height 8

       ax = df.plot(x='Date', y='Adj_Close', style='b-', grid=True)
       ax.set_xlabel("Date")
       ax.set_ylabel("USD")
```

[95]: Text(0, 0.5, 'USD')
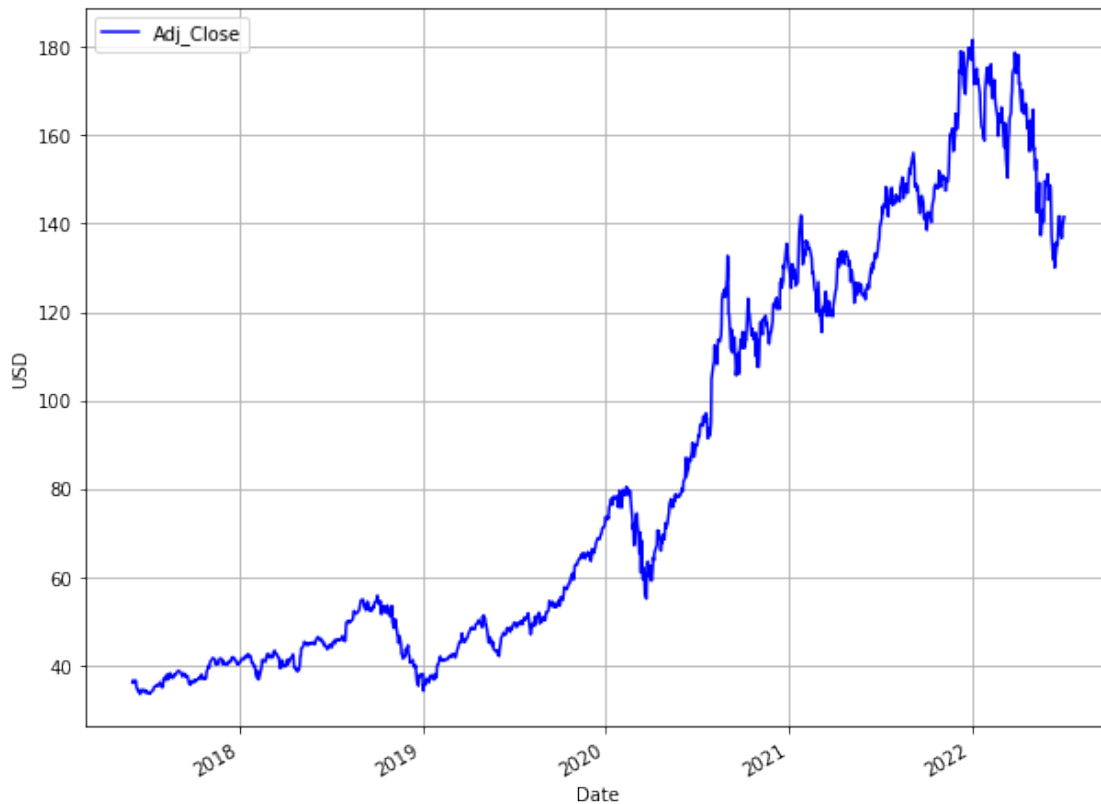

```
[109]:  # Get sizes of each of the datasets
        num_cv = int(cv_size*len(df))
        num_test = int(test_size*len(df))
        num_train = len(df) - num_cv - num_test
        print("num_train = " + str(num_train))
        print("num_cv = " + str(num_cv))
        print("num_test = " + str(num_test))

        # Split into train, cv, and test
        train = df[:num_train].copy()
        cv = df[num_train:num_train+num_cv].copy()
        train_cv = df[:num_train+num_cv].copy()
```

```
test = df[num_train+num_cv:].copy()
print("train.shape = " + str(train.shape))
print("cv.shape = " + str(cv.shape))
print("train_cv.shape = " + str(train_cv.shape))
print("test.shape = " + str(test.shape))
```

```
num_train = 770
num_cv = 256
num_test = 256
train.shape = (770, 7)
cv.shape = (256, 7)
train_cv.shape = (1026, 7)
test.shape = (256, 7)
```

[105]:
```
# Plot adjusted close over time
rcParams['figure.figsize'] = 10, 8 # width 10, height 8

ax = train_df.plot(x='Date', y='Adj_Close', style='b-', grid=True)
ax = valid_df.plot(x='Date', y='Adj_Close', style='y-', grid=True, ax=ax)
ax = test_df.plot(x='Date', y='Adj_Close', style='g-', grid=True, ax=ax)
ax.legend(['train', 'dev', 'test'])
ax.set_xlabel("date")
ax.set_ylabel("USD")
```

[105]: Text(0, 0.5, 'USD')
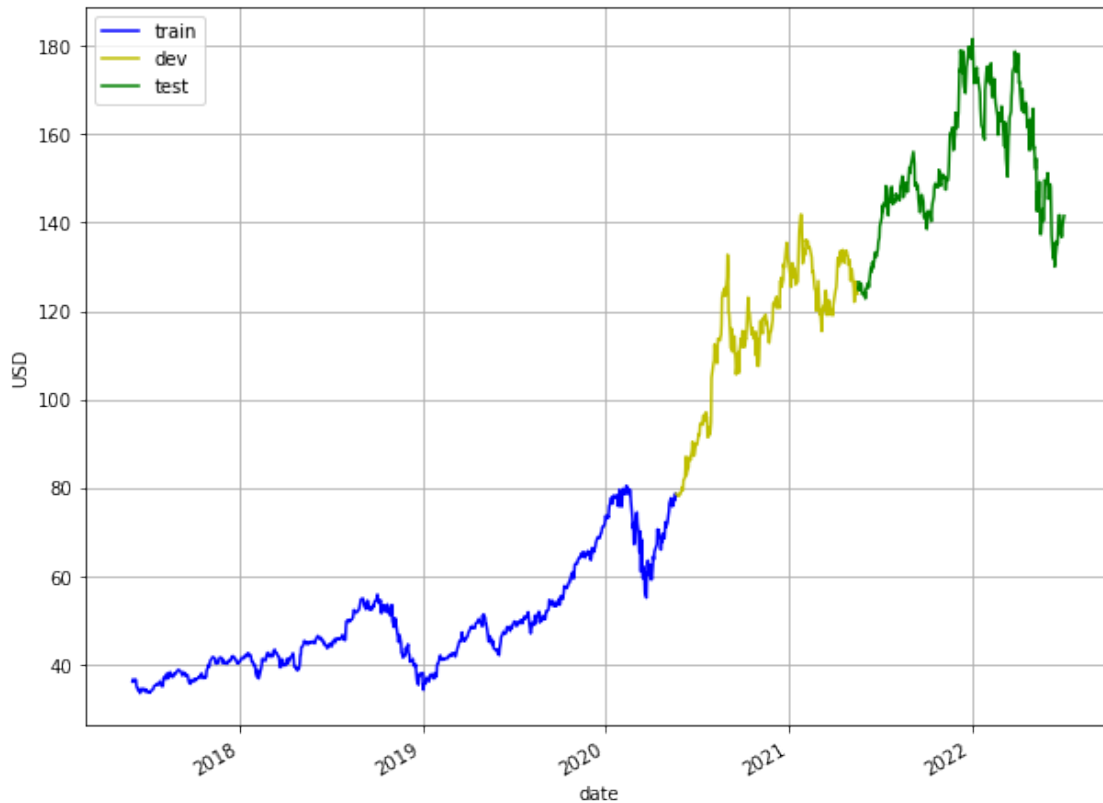
[110]:
```
RMSE = []
R2 = []
mape = []
for N in range(1, Nmax+1): # N is no. of samples to use to predict the next␣
 ↪value
    est_list = get_preds_lin_reg(train_cv, 'Adj_Close', N, 0, num_train)

    cv.loc[:, 'est' + '_N' + str(N)] = est_list
    RMSE.append(math.sqrt(mean_squared_error(est_list, cv['Adj_Close'])))
    R2.append(r2_score(cv['Adj_Close'], est_list))
    mape.append(get_mape(cv['Adj_Close'], est_list))
print('RMSE = ' + str(RMSE))
print('R2 = ' + str(R2))
print('MAPE = ' + str(mape))
cv.head()
```

RMSE = [2.5418583049638985, 3.7115248290011276, 3.1483807498356584,
3.085037803085546, 3.0853486168688664, 3.1677816142681072, 3.276704847823596,
3.3967339976370505, 3.474726559081889, 3.543250798071538, 3.6082011228146738,
3.6722513451750225, 3.7562182016512073, 3.8524298334400258, 3.959312185982967,
4.064755464360968, 4.16278512342096, 4.266845126337647, 4.342498425828294,
4.4048872174960625, 4.463635269920891, 4.524746551087043, 4.591644430962202,

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```
4.664485736262551, 4.753565330769291, 4.851945074894979, 4.961973533262739,
5.067836612952337, 5.171954323200554, 5.272197526939928]
R2 = [0.9552415177382255, 0.9045716494582536, 0.9313331423663309,
0.9340683936417555, 0.9340551079152164, 0.9304842609164985, 0.9256215156689793,
0.9200725876425682, 0.9163600153557689, 0.9130285994068184, 0.9098108795775514,
0.906580513883851, 0.9022595571408834, 0.8971883920160089, 0.8914044148002354,
0.8855432199599628, 0.879955942965865, 0.8738792815865457, 0.8693672660221379,
0.8655866939241676, 0.86197744012632, 0.8581722568612287, 0.8539474391610027,
0.8492767619986377, 0.8434649447543587, 0.8369186009166313, 0.829438281265598,
0.8220828199935954, 0.8146971759074392, 0.80744445789288]
MAPE = [1.5971282628915506, 2.4561147206571703, 2.066578622235489,
1.970297925581723, 1.94964320728729, 1.9870316956227305, 2.003725151062881,
2.0378744935214583, 2.0851646336519094, 2.169945197023719, 2.2390701776752993,
2.302676738701143, 2.363828305426463, 2.4373407424068736, 2.5075738186906635,
2.580818813922577, 2.6453829412823024, 2.718876669938955, 2.7764259712400747,
2.8307122480395406, 2.8820203254858408, 2.9466637657492343, 3.0146859974823976,
3.069597711052502, 3.1355980165579798, 3.2058467166598734, 3.2735856747983396,
3.3387521188443396, 3.4069971983560263, 3.468454962600688]
```

```
[110]:          Date       High        Low       Open      Close     Volume  \
        770  2020-06-23  93.095001  90.567497  91.000000  91.632500  212155600
        771  2020-06-24  92.197502  89.629997  91.250000  90.014999  192623200
        772  2020-06-25  91.250000  89.392502  90.175003  91.209999  137522400
        773  2020-06-26  91.330002  88.254997  91.102501  88.407501  205256800
        774  2020-06-29  90.542503  87.820000  88.312500  90.445000  130646000

             Adj_Close     est_N1     est_N2     est_N3  …     est_N21     est_N22  \
        770  90.502151  88.610771  90.870056  89.032990  …  88.527759  88.387712
        771  88.904594  90.502151  92.393532  92.638802  …  89.606678  89.424600
        772  90.084862  88.904594  87.307037  89.632996  …  90.154843  90.064048
        773  87.316933  90.084862  91.265129  89.413246  …  90.812299  90.730658
        774  89.329292  87.316933  84.549004  87.181135  …  90.781483  90.775136

                est_N23     est_N24     est_N25     est_N26     est_N27     est_N28  \
        770  88.180238  88.097999  87.956764  87.943179  87.864008  87.799024
        771  89.275033  89.060882  88.966454  88.815856  88.788270  88.698387
        772  89.895436  89.755870  89.552754  89.462919  89.318252  89.291181
        773  90.644364  90.482626  90.347380  90.150052  90.060513  89.917721
        774  90.724676  90.666714  90.533629  90.423066  90.250314  90.178962

                est_N29     est_N30
        770  87.649664  87.435886
        771  88.622648  88.465839
        772  89.203825  89.129663
        773  89.887808  89.799714
        774  90.054610  90.037651
```

```
[5 rows x 37 columns]
```

```python
[111]:  # Plot RMSE versus N
        matplotlib.rcParams.update({'font.size': 14})
        plt.figure(figsize=(20, 8), dpi=200)
        plt.plot(range(1, Nmax+1), RMSE, 'x-')
        plt.grid()
        plt.xlabel('N')
        plt.ylabel('RMSE')
        #plt.xlim([2, 30])
```

```
[111]:  Text(0, 0.5, 'RMSE')
```
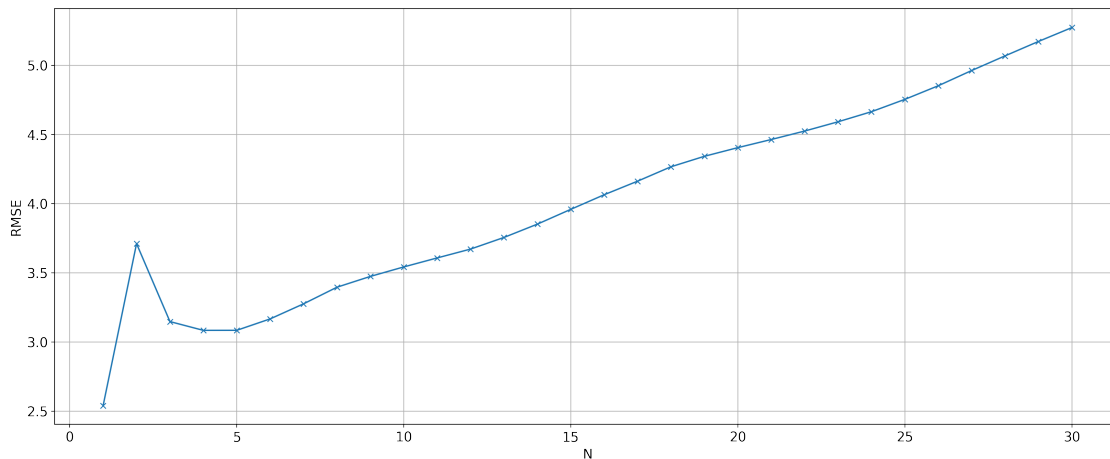


```python
[112]:  # Plot R2 versus N. Note for R2 larger better.
        matplotlib.rcParams.update({'font.size': 14})
        plt.figure(figsize=(20, 8), dpi=200)
        plt.plot(range(1, Nmax+1), R2, 'x-')
        plt.grid()
        plt.xlabel('N')
        plt.ylabel('R2')
```

```
[112]:  Text(0, 0.5, 'R2')
```
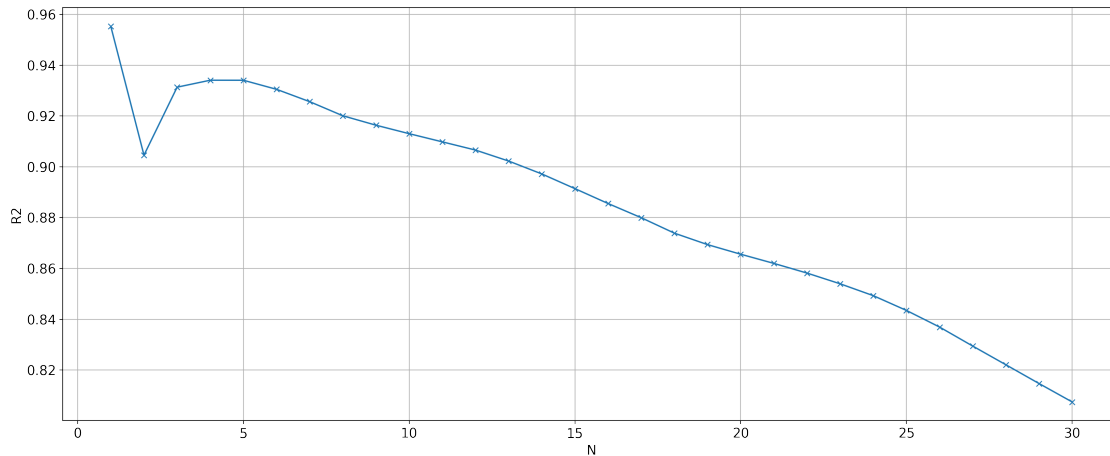
```
[113]:   # Plot MAPE versus N. Note for MAPE smaller better.
         plt.figure(figsize=(20, 8), dpi=200)
         plt.plot(range(1, Nmax+1), mape, 'x-')
         plt.grid()
         plt.xlabel('N')
         plt.ylabel('MAPE')
```

[113]: Text(0, 0.5, 'MAPE')
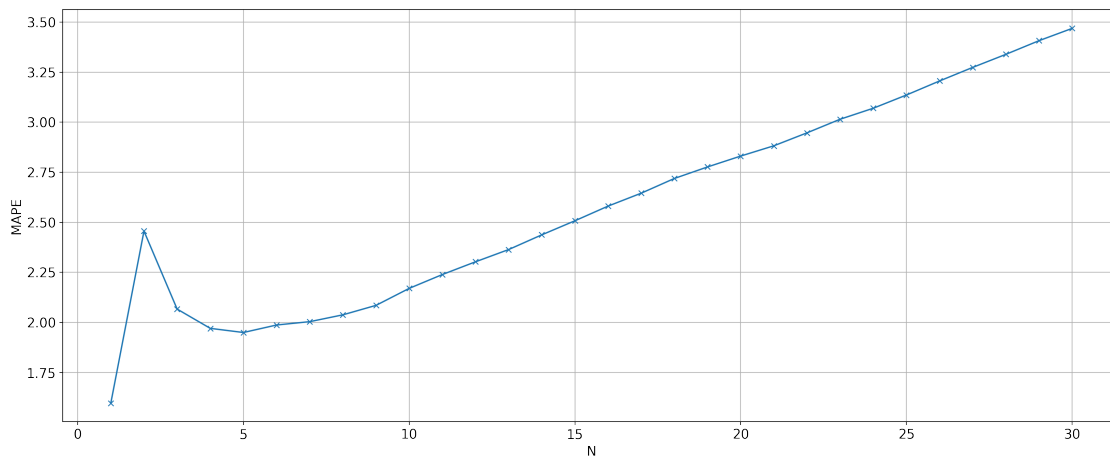

```
[116]:   N_opt= 5
         est_list = get_preds_lin_reg(df, 'Adj_Close', N_opt, 0, num_train+num_cv)
         test.loc[:, 'est' + '_N' + str(N_opt)] = est_list
         print("RMSE = %0.3f" % math.sqrt(mean_squared_error(est_list,␣
          ↪test['Adj_Close'])))
         print("R2 = %0.3f" % r2_score(test['Adj_Close'], est_list))
```

```
print("MAPE = %0.3f%%" % get_mape(test['Adj_Close'], est_list))
test.head()
```

```
RMSE = 3.670
R2 = 0.917
MAPE = 1.858%
```

[116]:
```
            Date        High         Low        Open       Close     Volume  \
1026  2021-06-29  136.490005  134.350006  134.800003  136.330002   64556100
1027  2021-06-30  137.410004  135.869995  136.169998  136.960007   63261400
1028  2021-07-01  137.330002  135.759995  136.600006  137.270004   52485800
1029  2021-07-02  140.000000  137.750000  137.899994  139.960007   78852600
1030  2021-07-06  143.149994  140.070007  140.070007  142.020004  108181800

       Adj_Close       est_N5
1026  135.555542   133.337241
1027  136.181976   135.480974
1028  136.490204   137.229987
1029  139.164932   138.051283
1030  141.213226   139.652145
```

[ ]:

[117]:
```python
import math
import matplotlib
import numpy as np
import pandas as pd
import seaborn as sns
import pandas_datareader.data as web
import time

from datetime import *
from matplotlib import pyplot as plt

from pylab import rcParams
from sklearn.metrics import mean_squared_error
from sklearn.preprocessing import *
from tqdm import tqdm_notebook
from xgboost import XGBRegressor
%matplotlib inline




test_size = 0.2                                             # proportion of␣
 ↪dataset to be used as test set
cv_size = 0.2                                               # proportion of␣
 ↪dataset to be used as cross-validation set
```

```
N = 3                                                        # for␣
 ↪feature at day t, we use lags from t-1, t-2, ..., t-N as features

n_estimators = 100                              # Number of boosted trees to fit.␣
 ↪default = 100
max_depth = 3                                   # Maximum tree depth for base␣
 ↪learners. default = 3
learning_rate = 0.1                             # Boosting learning rate (xgb's␣
 ↪"eta"). default = 0.1
min_child_weight = 1                         # Minimum sum of instance␣
 ↪weight(hessian) needed in a child. default = 1
subsample = 1                       # Subsample ratio of the training instance.␣
 ↪default = 1
colsample_bytree = 1                  # Subsample ratio of columns when constructing␣
 ↪each tree. default = 1
colsample_bylevel = 1             # Subsample ratio of columns for each split, in␣
 ↪each level. default = 1
gamma = 0                          # Minimum loss reduction required to make a␣
 ↪further partition on a leaf node of the tree. default=0


model_seed = 100


fontsize = 14
ticklabelsize = 14
```

[119]:
```python
def get_mov_avg_std(df, col, N):
    """
    Given a dataframe, get mean and std dev at timestep t using values from␣
 ↪t-1, t-2, ..., t-N.
    Inputs
        df          : dataframe. Can be of any length.
        col         : name of the column you want to calculate mean and std dev
        N           : get mean and std dev at timestep t using values from t-1,␣
 ↪t-2, ..., t-N
    Outputs
        df_out      : same as df but with additional column containing mean and␣
 ↪std dev
    """
    mean_list = df[col].rolling(window = N, min_periods=1).mean()
    std_list = df[col].rolling(window = N, min_periods=1).std()

    # Add one timestep to the predictions
    mean_list = np.concatenate((np.array([np.nan]), np.array(mean_list[:-1])))
    std_list = np.concatenate((np.array([np.nan]), np.array(std_list[:-1])))

    # Append mean_list to df
```

```python
    df_out = df.copy()
    df_out[col + '_mean'] = mean_list
    df_out[col + '_std'] = std_list

    return df_out

def scale_row(row, feat_mean, feat_std):
    """
    Given a pandas series in row, scale it to have 0 mean and var 1 using␣
 ↪feat_mean and feat_std
    Inputs
        row      : pandas series. Need to scale this.
        feat_mean: mean
        feat_std : standard deviation
    Outputs
        row_scaled : pandas series with same length as row, but scaled
    """

    # set it to a small number to avoid division by zero
    feat_std = 0.001 if feat_std == 0 else feat_std

    row_scaled = (row-feat_mean) / feat_std

    return row_scaled

def get_mape(y_true, y_pred):
    """
    Compute mean absolute percentage error (MAPE)
    """
    y_true, y_pred = np.array(y_true), np.array(y_pred)
    return np.mean(np.abs((y_true - y_pred) / y_true)) * 100

def train_pred_eval_model(X_train_scaled, \
                          y_train_scaled, \
                          X_test_scaled, \
                          y_test, \
                          col_mean, \
                          col_std, \
                          seed=100, \
                          n_estimators=100, \
                          max_depth=3, \
                          learning_rate=0.1, \
                          min_child_weight=1, \
                          subsample=1, \
                          colsample_bytree=1, \
                          colsample_bylevel=1, \
                          gamma=0):
```

```python
    '''
    Train model, do prediction, scale back to original range and do evaluation
    Use XGBoost here.
    Inputs
        X_train_scaled      : features for training. Scaled to have mean 0 and
→variance 1
        y_train_scaled      : target for training. Scaled to have mean 0 and
→variance 1
        X_test_scaled       : features for test. Each sample is scaled to mean 0
→and variance 1
        y_test              : target for test. Actual values, not scaled.
        col_mean            : means used to scale each sample of X_test_scaled.
→Same length as X_test_scaled and y_test
        col_std             : standard deviations used to scale each sample of
→X_test_scaled. Same length as X_test_scaled and y_test
        seed                : model seed
        n_estimators        : number of boosted trees to fit
        max_depth           : maximum tree depth for base learners
        learning_rate       : boosting learning rate (xgb's "eta")
        min_child_weight    : minimum sum of instance weight(hessian) needed in
→a child
        subsample           : subsample ratio of the training instance
        colsample_bytree    : subsample ratio of columns when constructing each
→tree
        colsample_bylevel   : subsample ratio of columns for each split, in each
→level
        gamma               :
    Outputs
        rmse                : root mean square error of y_test and est
        mape                : mean absolute percentage error of y_test and est
        est                 : predicted values. Same length as y_test
    '''

    model = XGBRegressor(seed=model_seed,
                         n_estimators=n_estimators,
                         max_depth=max_depth,
                         learning_rate=learning_rate,
                         min_child_weight=min_child_weight,
                         subsample=subsample,
                         colsample_bytree=colsample_bytree,
                         colsample_bylevel=colsample_bylevel,
                         gamma=gamma)

    # Train the model
    model.fit(X_train_scaled, y_train_scaled)
```

```
    # Get predicted labels and scale back to original range
    est_scaled = model.predict(X_test_scaled)
    est = est_scaled * col_std + col_mean

    # Calculate RMSE
    rmse = math.sqrt(mean_squared_error(y_test, est))
    mape = get_mape(y_test, est)

    return rmse, mape, est
```

[131]:
```
df = pd.read_csv('AAPL_hist_price.csv')
df
```

[131]:
```
            Date        High         Low        Open       Close      Volume  \
0     2017-06-01   38.332500   38.055000   38.292500   38.294998    65616400
1     2017-06-02   38.862499   38.222500   38.395000   38.862499   111082800
2     2017-06-05   38.612499   38.365002   38.584999   38.482498   101326800
3     2017-06-06   38.952499   38.445000   38.474998   38.612499   106499600
4     2017-06-07   38.994999   38.619999   38.755001   38.842499    84278400
...          ...         ...         ...         ...         ...         ...
1277  2022-06-28  143.419998  137.320007  142.130005  137.440002    67083400
1278  2022-06-29  140.669998  136.669998  137.460007  139.229996    66242400
1279  2022-06-30  138.369995  133.770004  137.250000  136.720001    98964500
1280  2022-07-01  139.039993  135.660004  136.039993  138.929993    71007500
1281  2022-07-05  141.610001  136.929993  137.770004  141.559998    73353800

        Adj_Close
0       36.252583
1       36.789814
2       36.430069
3       36.553143
4       36.770882
...           ...
1277   137.440002
1278   139.229996
1279   136.720001
1280   138.929993
1281   141.559998

[1282 rows x 7 columns]
```

[134]:
```
df['Date']=df.index

df=df.reset_index(drop=True)
# Get month of each sample
df['month'] = df['Date'].dt.month
```

```python
# Sort by datetime
df.sort_values(by='Date', inplace=True, ascending=True)

df.head()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_28928/1699902692.py in <module>
      3 df=df.reset_index(drop=True)
      4 # Get month of each sample
----> 5 df['month'] = df['Date'].dt.month
      6
      7 # Sort by datetime

~\anaconda3\lib\site-packages\pandas\core\generic.py in __getattr__(self, name)
   5573             ):
   5574                 return self[name]
-> 5575         return object.__getattribute__(self, name)
   5576
   5577     def __setattr__(self, name: str, value) -> None:

~\anaconda3\lib\site-packages\pandas\core\accessor.py in __get__(self, obj, cls
    180             # we're accessing the attribute of the class, i.e., Dataset
 →geo
    181             return self._accessor
--> 182         accessor_obj = self._accessor(obj)
    183         # Replace the property with the accessor object. Inspired by:
    184         # https://www.pydanny.com/cached-property.html

~\anaconda3\lib\site-packages\pandas\core\indexes\accessors.py in __new__(cls,␣
 →data)
    507             return PeriodProperties(data, orig)
    508
--> 509         raise AttributeError("Can only use .dt accessor with␣
 →datetimelike values")

AttributeError: Can only use .dt accessor with datetimelike values
```

```python
[124]:  # Get difference between high and low of each day
        df['range_hl'] = df['High'] - df['Low']
        df.drop(['High', 'Low'], axis=1, inplace=True)

        # Get difference between open and close of each day
        df['range_oc'] = df['Open'] - df['Close']
        df.drop(['Open', 'Close'], axis=1, inplace=True)
```

```
df
```

```
[124]:             Date       Volume    Adj_Close  range_hl  range_oc
       0     2017-06-01    65616400    36.252583  0.277500  -0.002499
       1     2017-06-02   111082800    36.789814  0.639999  -0.467499
       2     2017-06-05   101326800    36.430069  0.247498   0.102501
       3     2017-06-06   106499600    36.553143  0.507500  -0.137501
       4     2017-06-07    84278400    36.770882  0.375000  -0.087498
       ...          ...         ...          ...       ...        ...
       1277  2022-06-28    67083400   137.440002  6.099991   4.690002
       1278  2022-06-29    66242400   139.229996  4.000000  -1.769989
       1279  2022-06-30    98964500   136.720001  4.599991   0.529999
       1280  2022-07-01    71007500   138.929993  3.379990  -2.889999
       1281  2022-07-05    73353800   141.559998  4.680008  -3.789993

       [1282 rows x 5 columns]
```

```
[127]:  # Add a column 'order_day' to indicate the order of the rows by date
        df['order_day'] = [x for x in list(range(len(df)))]
        print(df.head())

        # merging_keys
        merging_keys = ['order_day']

        # List of columns that we will use to create lags
        lag_cols = ['Adj_Close', 'range_hl', 'range_oc', 'Volume']
        lag_cols
```

```
              Date      Volume    Adj_Close  range_hl  range_oc  order_day
0     2017-06-01    65616400    36.252583  0.277500  -0.002499          0
1     2017-06-02   111082800    36.789814  0.639999  -0.467499          1
2     2017-06-05   101326800    36.430069  0.247498   0.102501          2
3     2017-06-06   106499600    36.553143  0.507500  -0.137501          3
4     2017-06-07    84278400    36.770882  0.375000  -0.087498          4
```

```
[127]: ['Adj_Close', 'range_hl', 'range_oc', 'Volume']
```

```
[128]:  shift_range = [x+1 for x in range(N)]

        for shift in tqdm_notebook(shift_range):
            train_shift = df[merging_keys + lag_cols].copy()

            # E.g. order_day of 0 becomes 1, for shift = 1.
            # So when this is merged with order_day of 1 in df, this will represent lag␣
        ↪of 1.
            train_shift['order_day'] = train_shift['order_day'] + shift

            foo = lambda x: '{}_lag_{}'.format(x, shift) if x in lag_cols else x
```

```
    train_shift = train_shift.rename(columns=foo)

    df = pd.merge(df, train_shift, on=merging_keys, how='left') #.fillna(0)




print(train_shift.head())

del train_shift

# Remove the first N rows which contain NaNs
df = df[N:]

df.head()
```

```
   0%|          | 0/3 [00:00<?, ?it/s]

   order_day  Adj_Close_lag_3  range_hl_lag_3  range_oc_lag_3  Volume_lag_3
0          3        36.252583        0.277500       -0.002499      65616400
1          4        36.789814        0.639999       -0.467499     111082800
2          5        36.430069        0.247498        0.102501     101326800
3          6        36.553143        0.507500       -0.137501     106499600
4          7        36.770882        0.375000       -0.087498      84278400
```

[128]:
```
           Date      Volume   Adj_Close  range_hl  range_oc  order_day  \
3    2017-06-06  106499600   36.553143    0.5075  -0.137501          3
4    2017-06-07   84278400   36.770882    0.3750  -0.087498          4
5    2017-06-08   85003200   36.680939    0.2850   0.064999          5
6    2017-06-09  259530800   35.258575    2.2925   1.552502          6
7    2017-06-12  289229200   34.416039    0.8950   0.080002          7

   Adj_Close_lag_1  range_hl_lag_1  range_oc_lag_1  Volume_lag_1  \
3        36.430069        0.247498        0.102501   101326800.0
4        36.553143        0.507500       -0.137501   106499600.0
5        36.770882        0.375000       -0.087498    84278400.0
6        36.680939        0.285000        0.064999    85003200.0
7        35.258575        2.292500        1.552502   259530800.0

   Adj_Close_lag_2  range_hl_lag_2  range_oc_lag_2  Volume_lag_2  \
3        36.789814        0.639999       -0.467499   111082800.0
4        36.430069        0.247498        0.102501   101326800.0
5        36.553143        0.507500       -0.137501   106499600.0
6        36.770882        0.375000       -0.087498    84278400.0
7        36.680939        0.285000        0.064999    85003200.0

   Adj_Close_lag_3  range_hl_lag_3  range_oc_lag_3  Volume_lag_3
```

```
3        36.252583      0.277500     -0.002499    65616400.0
4        36.789814      0.639999     -0.467499   111082800.0
5        36.430069      0.247498      0.102501   101326800.0
6        36.553143      0.507500     -0.137501   106499600.0
7        36.770882      0.375000     -0.087498    84278400.0
```

[129]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 1279 entries, 3 to 1281
Data columns (total 18 columns):
 #   Column          Non-Null Count  Dtype
---  ------          --------------  -----
 0   Date            1279 non-null   object
 1   Volume          1279 non-null   int64
 2   Adj_Close       1279 non-null   float64
 3   range_hl        1279 non-null   float64
 4   range_oc        1279 non-null   float64
 5   order_day       1279 non-null   int64
 6   Adj_Close_lag_1 1279 non-null   float64
 7   range_hl_lag_1  1279 non-null   float64
 8   range_oc_lag_1  1279 non-null   float64
 9   Volume_lag_1    1279 non-null   float64
 10  Adj_Close_lag_2 1279 non-null   float64
 11  range_hl_lag_2  1279 non-null   float64
 12  range_oc_lag_2  1279 non-null   float64
 13  Volume_lag_2    1279 non-null   float64
 14  Adj_Close_lag_3 1279 non-null   float64
 15  range_hl_lag_3  1279 non-null   float64
 16  range_oc_lag_3  1279 non-null   float64
 17  Volume_lag_3    1279 non-null   float64
dtypes: float64(15), int64(2), object(1)
memory usage: 189.9+ KB
```

[130]:
```python
# # Get mean of adj_close of each month
df_gb = df.groupby(['month'], as_index=False).agg({'Adj_Close':'mean'})
df_gb = df_gb.rename(columns={'Adj_Close':'Adj_Close_Mean'})
df_gb

# # Merge to main df
df = df.merge(df_gb)
df.head()
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_28928/1799549653.py in <module>
      1 # # Get mean of adj_close of each month
----> 2 df_gb = df.groupby(['month'], as_index=False).agg({'Adj_Close':'mean'})
```

```
      3 df_gb = df_gb.rename(columns={'Adj_Close':'Adj_Close_Mean'})
      4 df_gb
      5

~\anaconda3\lib\site-packages\pandas\core\frame.py in groupby(self, by, axis,
↪level, as_index, sort, group_keys, squeeze, observed, dropna)
   7710         # error: Argument "squeeze" to "DataFrameGroupBy" has
↪incompatible type
   7711         # "Union[bool, NoDefault]"; expected "bool"
-> 7712         return DataFrameGroupBy(

   7713             obj=self,
   7714             keys=by,

~\anaconda3\lib\site-packages\pandas\core\groupby\groupby.py in __init__(self,
↪obj, keys, axis, level, grouper, exclusions, selection, as_index, sort,
↪group_keys, squeeze, observed, mutated, dropna)
    880             from pandas.core.groupby.grouper import get_grouper
    881
--> 882             grouper, exclusions, obj = get_grouper(

    883                 obj,
    884                 keys,

~\anaconda3\lib\site-packages\pandas\core\groupby\grouper.py in get_grouper(obj
↪key, axis, level, sort, observed, mutated, validate, dropna)
    880                 in_axis, level, gpr = False, gpr, None
    881             else:
--> 882                 raise KeyError(gpr)
    883         elif isinstance(gpr, Grouper) and gpr.key is not None:
    884             # Add key to exclusions

KeyError: 'month'
```

[ ]:

[ ]:

[ ]:

3.2 AMD Progression and Prediction

```
[ ]: AMD = pd.read_csv('nasdaqtechend.csv')
     AMD= AMD[['Date', 'AMD']]
     AMD
```

```
[ ]: fig1 = go.Figure()
     fig1.add_trace(
```

```
    go.Scatter(
        x=AMD.Date,
        y=AMD.AMD,
        name='AMD Progression '


    )
)
```

[ ]: