world model v3

May 6, 2025

1 World Model

1.1 Imports

```
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestRegressor
from sklearn.neural_network import MLPRegressor
from sklearn.metrics import mean_absolute_error, mean_squared_error
from sklearn.preprocessing import StandardScaler
import joblib
import os
```

1.2 Load Dataset

```
def load_data(filepath="../dataset/dataset_v3.txt"):
    """Loads the dataset using pandas."""
    try:
        df = pd.read_csv(filepath)
        print(f"Dataset loaded successfully. Shape: {df.shape}")
        df = df.dropna()
        print(f"Shape after dropping NaNs: {df.shape}")
        return df
    except FileNotFoundError:
        print(f"Error: Dataset file not found at {filepath}")
        return None
    except Exception as e:
        print(f"Error loading dataset: {e}")
        return None
```

```
[3]: # 1. Load the dataset dataframe = load_data()
```

```
Dataset loaded successfully. Shape: (3726, 14)
Shape after dropping NaNs: (3726, 14)
```

```
[4]: dataframe.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3726 entries, 0 to 3725
Data columns (total 14 columns):
    Column
                           Non-Null Count Dtype
                           _____
 0
    distance red init
                           3726 non-null
                                           float64
 1
    angle red init
                           3726 non-null
                                          float64
 2
    distance_green_init
                           3726 non-null
                                          float64
 3
                           3726 non-null
                                          float64
    angle_green_init
 4
    distance_blue_init
                           3726 non-null
                                          float64
 5
    angle_blue_init
                           3726 non-null
                                          float64
 6
    rSpeed
                           3726 non-null
                                          int64
 7
    1Speed
                           3726 non-null
                                           int64
 8
    distance_red_final
                           3726 non-null
                                          float64
    angle_red_final
                           3726 non-null
                                          float64
 10 distance_green_final 3726 non-null
                                          float64
 11
    angle_green_final
                           3726 non-null
                                          float64
 12 distance_blue_final
                           3726 non-null
                                          float64
```

dtypes: float64(12), int64(2) memory usage: 407.7 KB

1.3 Preprocess Dataset

13 angle_blue_final

```
[6]: def prepare_data(df):
    """Separates features (X) and target variables (Y)."""
    # Input Features: initial state (6) + action (2) = 8 features
    X = df.iloc[:, :8].values
    # Target Variables: final state (6) = 6 features
    Y = df.iloc[:, 8:].values
    print(f"Features (X) shape: {X.shape}")
    print(f"Targets (Y) shape: {Y.shape}")
    return X, Y
```

float64

3726 non-null

```
[8]: # 2. Prepare Data
X, Y = prepare_data(dataframe)
```

Features (X) shape: (3726, 8) Targets (Y) shape: (3726, 6)

```
[9]: def scale_features(X_train, X_test):
    """Scales input features using StandardScaler."""

    scaler = StandardScaler()

# Fit scaler ONLY on training data
X_train_scaled = scaler.fit_transform(X_train)

# Transform both train and test data
X_test_scaled = scaler.transform(X_test)

print("Features scaled.")

return X_train_scaled, X_test_scaled, scaler # Return scaler to save it
```

```
[10]: # 3. Split Data
X_train, X_test, Y_train, Y_test = split_data(X, Y)

# 4. Scale Features (Important!)
X_train_scaled, X_test_scaled, scaler = scale_features(X_train, X_test)
```

Training set size: 2980 samples Testing set size: 746 samples Features scaled.

1.4 Train model

```
[11]: # from tqdm import tqdm
      import time
      from sklearn.model_selection import GridSearchCV
      def train_model_with_gridsearch(X_train, Y_train):
          """Trains a RandomForestRegressor using GridSearchCV for hyperparameter_
       ⇔tuning."""
         print("\n--- Starting GridSearchCV for RandomForestRegressor ---")
         # Define the parameter grid to search
         # Start with a smaller grid, then expand if needed and time permits
         param_grid = {
              'n_estimators': [100, 200, 300, 500, 1000, 2000],
                                                                           # Number
       ⇔of trees
              'max_depth': [5, 10, 20, 30, None], # Max depth of trees_
       → (None means no limit initially)
              'min_samples_split': [2, 5, 10, 20],
                                                         # Min samples to split a_
       \hookrightarrownode
              'min_samples_leaf': [1, 3, 5, 10],  # Min samples in a leaf node
```

```
'max_features': ['sqrt', 'log2'], # Number of features to_
⇔consider for split
       'oob_score': [True] # Can include if you want OOB score for the finalu
⇔best model
  # Initialize the base model
  rf = RandomForestRegressor(random_state=42, n_jobs=-1) # Use n_jobs in base_
→for fitting final model too
  # Initialize GridSearchCV
  # Scoring: Use negative MAE because GridSearchCV maximizes score. Lower MAE
⇔is better.
  # cv=5: 5-fold cross-validation
  # verbose=2: Print progress updates
  # n_jobs=-1: Use all available CPU cores for the search
  grid_search = GridSearchCV(estimator=rf,
                              param_grid=param_grid,
                              cv=5,
                              scoring='neg mean absolute error', # Or_{11}
→ 'neg_mean_squared_error'
                             n_{jobs=-1},
                              verbose=3) # Increase verbosity to see progress
  print(f"Searching grid: {param_grid}")
  start_time = time.time()
  # Fit GridSearchCV to the data
  grid_search.fit(X_train, Y_train)
  end time = time.time()
  print(f"GridSearchCV finished in {end_time - start_time:.2f} seconds.")
  # Print the best parameters found
  print("\nBest parameters found by GridSearchCV:")
  print(grid_search.best_params_)
  # Print the best score (negative MAE or MSE)
  print(f"\nBest cross-validation score (Negative MAE): {grid search.
⇔best_score_:.4f}")
  print(f"Corresponds to MAE: {-grid_search.best_score_:.4f}")
  # The best model found by GridSearchCV is stored in best_estimator_
  best_model = grid_search.best_estimator_
  print("\nBest model training complete.")
```

```
# You can optionally check OOB score if it was calculated
          # hasattr checks if the attribute exists before accessing
          if hasattr(best_model, 'oob_score_') and best_model.oob_score_:
              print(f"Best Model OOB score: {best_model.oob_score_:.4f}")
          return best_model
[12]: # 5. Train Model using GridSearchCV (using scaled data)
      if X train scaled is not None:
          world model = train model with gridsearch(X train scaled, Y train)
          print("Skipping model training due to data scaling issues.")
          exit()
     --- Starting GridSearchCV for RandomForestRegressor ---
     Searching grid: {'n_estimators': [100, 200, 300, 500, 1000, 2000], 'max_depth':
     [5, 10, 20, 30, None], 'min_samples_split': [2, 5, 10, 20], 'min_samples_leaf':
     [1, 3, 5, 10], 'max_features': ['sqrt', 'log2'], 'oob_score': [True]}
     Fitting 5 folds for each of 960 candidates, totalling 4800 fits
     [CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=100, oob_score=True;, score=-76.493 total
     time=
            0.3s
     [CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=100, oob_score=True;, score=-73.050 total
     time=
            0.4s
     [CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=100, oob_score=True;, score=-75.083 total
     time=
            0.3s
     [CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.347 total
     time= 0.4s
     [CV 4/5] END max depth=5, max features=sqrt, min samples leaf=1,
     min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.554 total
     time= 0.3s
     [CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=200, oob_score=True;, score=-74.838 total
     time=
            0.6s
     [CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=200, oob_score=True;, score=-76.766 total
     time=
            0.7s
     [CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=200, oob_score=True;, score=-73.398 total
     time=
            0.8s
     [CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
     min_samples_split=2, n_estimators=200, oob_score=True;, score=-74.521 total
```

time= 0.7s

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-75.538 total
time=
      0.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-76.741 total
time=
       1.2s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-75.543 total
      1.1s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.874 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-73.190 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.377 total
      1.3s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-76.454 total
      1.9s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-75.577 total
time=
      1.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-73.139 total
time=
      1.8s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.894 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.281 total
time= 1.6s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-76.355 total
time= 3.9s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-75.571 total
time= 3.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-72.980 total
       3.8s
time=
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-76.789 total
time=
      0.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-74.755 total
time=
       3.5s
```

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-75.256 total
time=
      0.4s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-74.141 total
time=
       3.7s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-72.939 total
      0.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.338 total
      0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.341 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-76.880 total
      1.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-73.399 total
time= 0.9s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-75.527 total
time=
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-74.890 total
time=
      0.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-74.537 total
time=
      0.7s
[CV 1/5] END max depth=5, max features=sgrt, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-76.782 total
time= 1.0s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-75.385 total
time= 0.9s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-73.202 total
time= 1.0s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-74.884 total
      0.9s
time=
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-74.298 total
time=
      0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-76.227 total
time=
      8.1s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-76.522 total
time=
      1.5s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-75.557 total
time=
       8.2s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-75.438 total
      1.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-73.025 total
      8.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-73.094 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.803 total
      1.9s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-74.208 total
      1.9s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-74.070 total
time= 7.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-74.727 total
time= 7.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-76.471 total
time=
      3.1s
[CV 3/5] END max depth=5, max features=sgrt, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-73.013 total
time=
      3.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-75.484 total
time= 3.6s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-76.508 total
time= 0.7s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-75.080 total
      0.8s
time=
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-72.623 total
time=
      0.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-74.670 total
time=
       5.3s
```

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-74.502 total
time=
      0.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-74.539 total
time=
      0.5s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-76.599 total
      0.9s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-74.055 total
      5.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-75.530 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-73.251 total
      0.8s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-74.969 total
time= 0.8s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-74.701 total
time=
      0.9s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-75.441 total
time=
      0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-76.529 total
time= 0.9s
[CV 3/5] END max depth=5, max features=sgrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-73.106 total
time= 1.0s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-74.958 total
time= 0.8s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-74.427 total
time= 1.0s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-75.471 total
time=
      8.0s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-72.991 total
time=
      7.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-76.273 total
time=
      8.4s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-76.373 total
time=
      1.6s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-75.491 total
time=
      1.6s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-72.945 total
      1.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-74.901 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-74.240 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-74.619 total
      8.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-74.024 total
time= 8.6s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-76.361 total
time=
      3.5s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-75.558 total
time=
      3.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-73.014 total
time=
      3.2s
[CV 4/5] END max depth=5, max features=sgrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-74.880 total
time= 3.4s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-76.434 total
time= 0.3s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-74.079 total
time= 3.8s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-75.418 total
time= 0.4s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-72.856 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-74.701 total
time=
      0.3s
```

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-74.137 total
time=
      0.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-76.377 total
time=
      0.9s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-76.056 total
      1.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-73.065 total
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-74.914 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-74.490 total
time= 0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-76.491 total
      1.1s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-76.016 total
time=
      1.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-73.051 total
time=
      1.0s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-74.974 total
time= 0.8s
[CV 5/5] END max depth=5, max features=sgrt, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-74.357 total
time= 0.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-76.285 total
time= 8.0s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-75.547 total
time= 7.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-72.935 total
time=
      7.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-76.252 total
time=
      1.5s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-75.871 total
time=
      1.6s
```

```
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-72.954 total
time=
      1.7s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-74.927 total
time=
       1.5s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-74.263 total
      1.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.706 total
      7.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.031 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-76.368 total
      3.8s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-75.749 total
time= 3.7s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-72.901 total
time=
      3.7s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-76.738 total
time=
      0.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-75.302 total
time=
      0.7s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-74.296 total
time=
      4.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-74.975 total
time= 4.4s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-72.835 total
time= 0.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.553 total
time=
      0.7s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.452 total
time=
      0.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-73.379 total
time=
      1.0s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-76.843 total
time=
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-75.620 total
time=
      1.1s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-74.931 total
      0.7s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-74.710 total
      0.7s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-76.688 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-75.413 total
      0.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-73.156 total
time= 0.9s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.835 total
time=
      1.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.341 total
time=
      1.1s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-75.586 total
time=
      9.1s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-76.319 total
time=
      9.2s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-76.416 total
time= 2.0s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-72.950 total
time= 9.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-75.509 total
time=
      1.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-72.979 total
time=
      1.7s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.755 total
time=
      1.5s
```

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.165 total
time=
      1.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-74.883 total
time=
      8.7s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-74.215 total
      9.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-76.381 total
      3.6s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-75.595 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-72.975 total
      3.8s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-74.703 total
      3.8s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-76.738 total
time=
      0.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-75.302 total
time=
      0.4s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-72.835 total
time= 0.3s
[CV 4/5] END max depth=5, max features=sgrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.452 total
time=
      0.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-73.981 total
time= 4.4s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.553 total
time= 0.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-76.843 total
time=
      1.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-75.620 total
time=
      1.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-73.379 total
time=
      1.6s
```

```
[CV 4/5] END max depth=5, max features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-74.931 total
time=
      0.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-74.710 total
time=
      0.9s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-76.688 total
      1.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-75.413 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-73.156 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-74.341 total
      0.9s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-74.835 total
      1.0s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-76.265 total
time=
      9.1s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-75.538 total
time=
      8.4s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-76.416 total
time= 1.8s
[CV 3/5] END max_depth=5, max_features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-72.942 total
time=
      8.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-72.979 total
time= 1.5s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-75.509 total
time= 1.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.755 total
      1.6s
time=
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.165 total
time=
      1.6s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-73.997 total
time=
      8.3s
```

```
[CV 4/5] END max depth=5, max features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-74.673 total
time=
      8.7s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-76.381 total
time=
       4.0s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-75.595 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-72.975 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-74.703 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-75.157 total
      0.3s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-76.418 total
time= 0.4s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-72.610 total
time= 0.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-74.444 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-74.462 total
time=
      0.4s
[CV 5/5] END max depth=5, max features=sgrt, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-73.981 total
time=
      4.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-76.561 total
time= 1.0s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-75.587 total
time= 1.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-73.173 total
      1.2s
time=
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-74.913 total
time=
      1.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-74.660 total
time=
      1.0s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-76.493 total
time=
      1.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-75.489 total
time=
       1.0s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-73.049 total
      1.0s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-74.880 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-74.369 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-76.315 total
      1.5s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-75.529 total
      1.4s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-75.538 total
time=
      9.0s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-76.265 total
time=
      9.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-72.942 total
time=
      8.7s
[CV 3/5] END max depth=5, max features=sgrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-72.881 total
time= 1.9s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-74.868 total
time= 1.8s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-74.673 total
time= 8.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-74.202 total
time=
      2.0s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-73.997 total
time=
      8.6s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-76.312 total
time=
       3.5s
```

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-75.589 total
time=
      3.8s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-72.959 total
time=
       3.8s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-76.418 total
      0.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-75.431 total
      0.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-72.852 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-74.766 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-74.865 total
time= 4.3s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-74.102 total
time=
      0.6s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-74.057 total
time= 4.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-76.435 total
time= 1.3s
[CV 2/5] END max depth=5, max features=sgrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-76.027 total
time= 1.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-73.065 total
time= 1.1s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-74.948 total
time= 1.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-74.482 total
time=
      1.1s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-76.529 total
time=
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-75.966 total
time=
      1.0s
```

```
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-73.035 total
time=
      0.9s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-74.985 total
time=
      0.9s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-74.331 total
      0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-76.271 total
      9.0s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-76.289 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-75.871 total
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-75.595 total
time= 8.8s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-72.912 total
time=
      8.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-72.932 total
time=
      1.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.721 total
time=
      8.0s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.018 total
time=
      7.9s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-74.259 total
      2.1s
time=
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-74.936 total
time=
      2.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-75.759 total
time=
      3.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-76.368 total
time=
      4.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-72.878 total
time=
       4.2s
```

```
[CV 4/5] END max depth=5, max features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-74.971 total
time=
      4.2s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-76.473 total
time=
      0.3s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-75.310 total
      0.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-74.286 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-72.600 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.376 total
      0.4s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-74.450 total
time= 0.4s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-76.546 total
time=
      0.9s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-75.739 total
time=
      1.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-73.270 total
time= 1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-75.017 total
time= 1.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-74.681 total
time= 1.1s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-76.535 total
time= 1.7s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-75.659 total
      1.2s
time=
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-73.121 total
time=
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.985 total
```

time=

1.1s

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.475 total
time=
      1.0s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-76.359 total
time=
      1.7s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-76.320 total
      9.6s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-75.632 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-75.592 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-72.919 total
      8.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-72.912 total
      1.9s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.940 total
time=
      1.6s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-74.277 total
time=
      1.7s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-74.887 total
time=
      8.8s
[CV 5/5] END max depth=5, max features=sgrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-74.198 total
time= 8.9s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-75.644 total
time= 3.7s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-76.336 total
time= 3.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-72.948 total
time=
      3.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-76.473 total
time=
      0.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-75.310 total
time=
      0.4s
```

```
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-74.930 total
time=
      4.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-72.600 total
time=
      0.4s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-74.376 total
      0.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.450 total
      0.6s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-74.109 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-76.546 total
time= 1.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-75.739 total
time= 1.3s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-73.270 total
time=
      1.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-75.017 total
time=
      1.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-74.681 total
time= 1.1s
[CV 1/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-76.535 total
time= 1.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=300, oob score=True;, score=-75.659 total
time= 1.1s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-73.121 total
time= 1.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-74.475 total
time=
      0.9s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-74.985 total
time=
      1.1s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-76.359 total
time=
      1.6s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-76.294 total
time=
      9.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-75.676 total
time=
       8.8s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-72.898 total
      8.7s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-72.912 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-75.632 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-74.065 total
      8.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-74.772 total
time= 8.6s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.940 total
time=
      2.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.277 total
time=
      2.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-75.644 total
time=
      3.6s
[CV 1/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-76.336 total
time=
      3.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-72.948 total
time= 4.3s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-74.930 total
time= 4.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-76.473 total
time=
      0.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-75.310 total
time=
      0.4s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-72.600 total
time=
      0.3s
```

```
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-74.376 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-74.450 total
time=
       0.8s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-74.109 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-76.546 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-75.739 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-73.270 total
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-75.017 total
time= 1.1s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-74.681 total
time= 1.1s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-76.535 total
time=
      1.4s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-73.121 total
time= 0.9s
[CV 2/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-75.659 total
time= 1.1s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-74.985 total
time= 1.1s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-74.475 total
time= 1.1s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-76.359 total
time=
      1.4s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-76.294 total
time=
      9.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-72.898 total
time=
       8.6s
```

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-75.676 total
time=
      8.8s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-75.632 total
time=
      1.6s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-72.912 total
      1.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-74.940 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-74.772 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-74.277 total
      1.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-74.065 total
      9.1s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-76.336 total
time= 4.1s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-75.644 total
time=
      4.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-72.948 total
time= 4.3s
[CV 1/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-76.463 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-74.930 total
time= 4.4s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-72.852 total
time= 0.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-75.422 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-74.109 total
time=
      4.5s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-74.780 total
time=
      0.7s
```

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-74.079 total
time=
      0.7s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-76.417 total
time=
       1.3s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-73.058 total
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-76.084 total
      1.3s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-75.111 total
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-74.480 total
time= 0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-76.509 total
      1.2s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-76.005 total
time=
      1.1s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-73.042 total
time=
      1.1s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-75.100 total
time= 0.9s
[CV 5/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-74.381 total
time= 1.0s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-76.294 total
time= 9.4s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-76.291 total
time= 1.6s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-75.676 total
time=
      9.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-72.898 total
time=
      9.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-75.879 total
time=
      1.7s
```

```
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-72.931 total
time=
      1.6s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-75.001 total
time=
      1.7s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-74.772 total
      8.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-74.304 total
      2.0s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.065 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-76.356 total
      3.9s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-75.767 total
time= 3.7s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-72.874 total
time=
      4.2s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-76.634 total
time=
      0.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-75.379 total
time= 0.3s
[CV 4/5] END max depth=5, max features=sgrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-75.001 total
time=
      4.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-73.173 total
time= 0.4s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.938 total
time= 0.7s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-74.249 total
time=
      0.7s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-74.305 total
time=
      5.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-76.611 total
time=
      1.4s
```

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-76.269 total
time=
      1.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-73.181 total
time=
       1.0s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-74.586 total
      0.7s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-75.102 total
      0.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-76.755 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-76.120 total
      0.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-73.016 total
      1.0s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-75.146 total
time=
      1.0s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-74.435 total
time=
      0.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-76.306 total
time= 8.9s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-75.596 total
time=
      8.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-72.903 total
time= 9.1s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-76.456 total
time= 2.0s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-75.869 total
time=
      1.6s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-72.873 total
time=
      1.6s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-75.115 total
time=
      1.5s
```

```
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-74.927 total
time=
      8.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-74.342 total
time=
       1.8s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-74.231 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-76.465 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-75.793 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-75.064 total
      4.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-72.850 total
time= 4.5s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-76.634 total
time=
      0.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-75.379 total
time=
      0.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-73.173 total
time= 0.4s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.938 total
time= 0.4s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-74.334 total
time= 4.9s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-74.249 total
time= 0.5s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-76.611 total
      1.2s
time=
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-73.181 total
time=
      1.1s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-76.269 total
time=
      1.3s
```

```
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-75.102 total
time=
      0.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-74.586 total
time=
       0.8s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-76.755 total
      1.6s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-76.120 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-73.016 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-75.146 total
      1.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-74.435 total
      1.0s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-72.882 total
time=
      9.7s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-75.638 total
time=
      9.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-76.456 total
time= 1.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-76.381 total
time=
      9.9s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-75.869 total
time= 1.6s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-72.873 total
time= 1.6s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-75.115 total
      2.1s
time=
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-74.342 total
time=
       2.1s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-74.984 total
time=
       9.7s
```

```
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-74.247 total
time=
      9.8s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-76.465 total
time=
       3.7s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-75.793 total
      3.6s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-72.850 total
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-75.064 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-76.634 total
time= 0.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-75.379 total
time= 0.4s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-73.173 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-74.938 total
time=
      0.3s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-74.249 total
time= 0.5s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-76.611 total
time= 1.3s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-76.269 total
time= 1.4s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-74.334 total
time= 5.4s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-73.181 total
time=
      1.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-75.102 total
time=
      1.2s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-74.586 total
time=
      1.2s
```

```
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-76.755 total
time=
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-76.120 total
time=
       1.2s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-73.016 total
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-75.146 total
      0.9s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-74.435 total
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-76.381 total
      9.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-75.638 total
time= 8.6s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-76.456 total
time=
      1.8s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-75.869 total
time=
      1.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-72.873 total
time=
      1.5s
[CV 3/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-72.882 total
time=
      9.0s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-74.247 total
time= 8.8s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-74.984 total
time= 8.9s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-75.115 total
      1.9s
time=
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-74.342 total
time=
       2.1s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-76.465 total
time=
       4.1s
```

```
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-75.064 total
time=
      4.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-72.850 total
time=
       4.4s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-75.793 total
      4.6s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-76.634 total
      0.4s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-75.379 total
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-73.173 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-74.938 total
time= 0.4s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-74.334 total
time=
      4.8s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-74.249 total
time=
      0.7s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-76.611 total
time= 1.4s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-76.269 total
time= 1.3s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-73.181 total
time= 1.2s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-75.102 total
time= 1.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-74.586 total
      1.0s
time=
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-76.755 total
time=
      1.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-73.016 total
time=
      1.1s
```

```
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-76.120 total
time=
      1.2s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-75.146 total
time=
       1.3s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-74.435 total
      1.0s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-76.381 total
      9.9s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-76.456 total
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-75.638 total
      9.5s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-72.882 total
      9.6s
[CV 2/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-75.869 total
time=
      1.7s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-72.873 total
time=
      1.9s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-74.342 total
time= 1.6s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-75.115 total
time= 1.8s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-74.984 total
time= 8.9s
[CV 5/5] END max depth=5, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-74.247 total
time= 9.2s
[CV 1/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-76.465 total
time=
      4.7s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-75.793 total
time=
      4.9s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-72.850 total
time=
       4.8s
```

```
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-69.208 total
time=
      0.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-68.125 total
time=
      0.4s
[CV 4/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-75.064 total
      5.3s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-65.518 total
      0.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.522 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.293 total
      0.5s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-74.334 total
      5.9s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-69.062 total
time=
      1.6s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-68.083 total
time=
      1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-65.643 total
time= 1.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-67.074 total
time=
      1.2s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-66.893 total
time= 1.2s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-69.020 total
time= 1.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.019 total
      1.6s
time=
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-65.695 total
time=
      1.7s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.792 total
time=
      1.3s
```

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[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.904 total
time=
      1.2s
[CV 2/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-75.638 total
time= 10.9s
[CV 1/5] END max depth=5, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-76.381 total
time= 11.2s
[CV 3/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-72.882 total
time= 10.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-68.958 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-67.899 total
      2.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-65.381 total
      1.9s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.814 total
time=
      1.9s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.728 total
time=
      2.0s
[CV 4/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-74.984 total
time= 10.1s
[CV 5/5] END max_depth=5, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-74.247 total
time= 10.1s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-68.839 total
time= 5.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-67.776 total
time= 5.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-65.320 total
      5.3s
time=
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-69.203 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-66.744 total
time=
       5.6s
```

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[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-68.041 total
time=
      0.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-65.584 total
time=
       0.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-66.562 total
      5.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.496 total
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.296 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-69.055 total
      1.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-68.092 total
time= 1.6s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-65.667 total
time=
      2.1s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-67.089 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-66.846 total
time= 1.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-69.001 total
time= 1.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-68.022 total
time= 1.4s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-65.704 total
time= 1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-66.799 total
      1.3s
time=
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-66.884 total
time=
      1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-68.875 total
time= 12.6s
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[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-67.759 total
time= 12.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-65.197 total
time= 12.3s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-68.934 total
       2.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-67.902 total
      2.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-65.382 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.695 total
      2.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-66.787 total
      2.4s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-66.683 total
time= 11.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-66.531 total
time= 11.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-67.779 total
time=
      5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-68.809 total
time=
      5.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-65.323 total
      5.7s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-66.744 total
time= 5.3s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-69.292 total
      0.4s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-68.123 total
time=
      0.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-65.559 total
time=
      0.7s
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[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-67.451 total
time=
      0.9s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-67.215 total
time=
       0.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-66.564 total
      6.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-68.963 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-65.642 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-68.140 total
time= 1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-67.086 total
time= 1.3s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-66.759 total
time=
      1.3s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-68.997 total
time=
      2.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-68.059 total
time= 1.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-65.701 total
time= 1.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-66.798 total
time= 1.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-66.875 total
time= 1.1s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-68.862 total
time= 12.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-68.952 total
time=
      1.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-67.758 total
time= 12.1s
```

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[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-65.202 total
time= 11.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-67.914 total
time=
      1.9s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-65.436 total
       2.1s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-66.698 total
time= 11.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-66.755 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-66.791 total
      2.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-66.531 total
time= 11.6s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-68.813 total
time=
      5.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-67.820 total
time=
      5.2s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-65.310 total
time=
      5.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-69.372 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-66.734 total
time= 5.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-65.625 total
time= 0.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-68.261 total
      0.6s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-67.969 total
time=
      0.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.555 total
time=
       6.3s
```

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[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-67.650 total
time=
      0.8s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-69.066 total
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-68.128 total
      1.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-65.679 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-67.481 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-66.965 total
      1.3s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-69.085 total
time= 1.8s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-68.095 total
time=
      1.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-65.661 total
time=
      1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-67.089 total
time=
      1.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-66.985 total
time= 1.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-67.770 total
time= 12.4s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-68.955 total
time= 1.9s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-68.882 total
time= 12.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-65.192 total
time= 12.2s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-68.025 total
time=
      1.8s
```

```
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-65.410 total
time=
       2.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-66.992 total
time=
       2.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-66.708 total
time= 12.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-66.810 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-66.522 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-67.935 total
      5.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-68.916 total
time= 5.7s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-65.393 total
time=
      6.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-69.201 total
time=
      0.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-68.061 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-66.748 total
time=
      5.9s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-65.535 total
time= 0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-66.559 total
time= 5.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.294 total
      0.7s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.479 total
time=
      0.8s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-69.019 total
time=
      1.4s
```

```
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-68.164 total
time=
      1.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-65.641 total
time=
      1.7s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-67.096 total
      1.2s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-66.839 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.995 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.116 total
      1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-65.671 total
time= 1.5s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.798 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.876 total
time=
      1.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-67.845 total
time= 12.1s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-68.919 total
time=
      2.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-68.943 total
time= 12.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-65.236 total
time= 12.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-67.952 total
      1.8s
time=
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-65.362 total
time=
       2.2s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.696 total
time=
       2.1s
```

```
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-66.545 total
time= 11.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-66.767 total
time= 11.5s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-66.794 total
       2.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-68.786 total
      5.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-67.822 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-65.322 total
      5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-69.201 total
time= 0.4s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-66.735 total
time=
      5.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-68.061 total
time=
      0.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-65.535 total
time= 0.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.479 total
time=
      0.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-66.541 total
time= 5.9s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.294 total
time= 0.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-69.019 total
      1.6s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-68.164 total
time=
      1.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-65.641 total
```

1.5s

```
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-67.096 total
time=
      1.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-66.839 total
time=
[CV 1/5] END max depth=5, max features=log2, min samples leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-68.995 total
      1.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-68.116 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-65.671 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-66.798 total
      1.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-66.876 total
      1.3s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-68.919 total
time=
      2.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-67.780 total
time= 11.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-68.855 total
time= 11.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-65.205 total
time= 11.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-67.952 total
      2.2s
time=
[CV 3/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-65.362 total
time=
      2.1s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.794 total
      2.0s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.696 total
time=
       2.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-66.685 total
```

time= 11.4s

```
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-66.525 total
time= 11.9s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-68.786 total
time=
       5.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-67.822 total
      5.3s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-65.322 total
      5.7s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-66.735 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-69.274 total
      0.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-68.125 total
time= 0.4s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-67.432 total
time=
      0.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-65.561 total
time=
      0.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-66.541 total
time=
      6.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-67.213 total
time=
      0.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-68.944 total
time= 1.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-68.185 total
time= 1.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-65.624 total
      1.6s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-67.066 total
time=
      1.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-66.757 total
time=
      1.6s
```

```
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-68.987 total
time=
      1.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-68.089 total
time=
       1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-65.677 total
      1.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-66.783 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-66.872 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-67.780 total
time= 12.4s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-68.939 total
      2.2s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-68.855 total
time= 12.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-65.205 total
time= 12.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-67.924 total
time=
      1.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-65.418 total
time= 1.9s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-66.685 total
time= 12.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-66.525 total
time= 12.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-66.793 total
      2.6s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-66.746 total
time=
       2.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-67.824 total
time=
       5.3s
```

```
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-68.801 total
time=
      5.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-65.298 total
time=
       5.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-69.333 total
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.708 total
      5.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-68.230 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-65.602 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-67.956 total
time= 0.4s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-67.628 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.543 total
time=
      6.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-68.153 total
time= 1.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-69.039 total
time= 1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-65.648 total
time= 1.7s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-67.466 total
time= 1.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-66.952 total
      1.4s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-68.109 total
time=
      1.8s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-69.064 total
time=
      1.9s
```

```
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-65.636 total
time=
      1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-67.073 total
       1.5s
time=
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-66.971 total
      1.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-68.952 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-65.180 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-68.871 total
time= 12.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-67.772 total
time= 12.4s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-68.031 total
time=
      2.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-65.391 total
time=
      1.9s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-66.988 total
time=
       2.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-66.798 total
time=
      2.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-66.680 total
time= 12.1s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-66.513 total
time= 12.4s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-68.914 total
      5.4s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-67.935 total
time=
      5.3s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-65.381 total
time=
       5.7s
```

```
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-66.735 total
time=
      5.8s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-69.298 total
time=
       0.3s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-68.166 total
      0.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-65.541 total
      0.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.423 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.213 total
      0.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-66.539 total
      6.6s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-68.934 total
time=
      1.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-68.199 total
time=
      1.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-67.033 total
time= 1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-65.596 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-66.771 total
time= 1.7s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.931 total
time= 1.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.091 total
      1.8s
time=
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-65.643 total
time=
      1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.751 total
```

1.6s

```
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.891 total
time=
      1.6s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-68.913 total
time=
       2.6s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-67.843 total
time= 12.1s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-68.941 total
time= 12.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-65.222 total
time= 12.1s
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-67.907 total
      2.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-65.370 total
      2.1s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.724 total
time=
      2.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.798 total
time=
      2.1s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-66.752 total
time= 12.3s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-66.533 total
time= 12.9s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-68.796 total
time= 5.2s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-67.823 total
time= 5.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-65.267 total
time=
      5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-69.298 total
time=
      0.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-66.671 total
```

6.0s

```
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-68.166 total
time=
      0.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-65.541 total
time=
      0.5s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-67.423 total
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.213 total
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-66.548 total
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-68.199 total
time= 1.1s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-68.934 total
time= 1.4s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-65.596 total
time=
      1.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-67.033 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-66.771 total
time=
      1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-68.931 total
time= 1.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=300, oob score=True;, score=-68.091 total
time= 1.7s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-65.643 total
time= 1.6s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-66.751 total
      1.4s
time=
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-66.891 total
time=
      1.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-68.913 total
```

2.6s

```
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-68.867 total
time= 12.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-67.779 total
time= 12.3s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-67.907 total
       2.1s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-65.157 total
time= 12.1s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-65.370 total
[CV 4/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.724 total
      2.2s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-66.798 total
      2.2s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-66.659 total
time= 13.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-66.513 total
time= 12.4s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-68.796 total
time=
      5.2s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-65.267 total
time=
      5.2s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-67.823 total
time= 5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-69.298 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-66.671 total
      5.5s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-68.166 total
time=
      0.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-65.541 total
```

0.4s

```
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-67.213 total
time=
      0.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-67.423 total
time=
       0.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-66.548 total
      6.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-68.199 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-68.934 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-65.596 total
      1.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-66.771 total
time= 1.6s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-67.033 total
time=
      1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-68.931 total
time=
      2.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-68.091 total
time=
      1.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-65.643 total
time= 1.8s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-66.751 total
time= 1.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-66.891 total
time= 1.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-68.913 total
time=
      2.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-67.907 total
time=
      1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-68.867 total
time= 13.2s
```

```
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-67.779 total
time= 12.1s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-65.157 total
time= 12.2s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-65.370 total
       2.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-66.724 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-66.798 total
[CV 4/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-66.659 total
time= 12.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-66.513 total
time= 12.4s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-68.796 total
time=
      5.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-67.823 total
time=
      5.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-65.267 total
time=
      5.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-69.260 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-66.671 total
time= 6.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-68.267 total
time= 0.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-65.662 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-67.973 total
time=
      0.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-67.639 total
```

0.5s

```
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.548 total
time=
      6.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-68.985 total
time=
       1.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-68.165 total
      1.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-65.674 total
      2.0s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-67.452 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-66.951 total
      1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-68.986 total
      1.7s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-68.114 total
time=
      1.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-65.629 total
time=
      1.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-67.036 total
time=
      1.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-66.974 total
time= 1.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-68.889 total
time= 2.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-68.867 total
time= 13.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-68.006 total
      1.9s
time=
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-65.157 total
time= 12.6s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-67.779 total
time= 13.0s
```

```
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-65.359 total
time=
       2.1s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-66.513 total
time= 11.9s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-66.659 total
time= 12.3s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-66.990 total
      3.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-66.792 total
[CV 2/5] END max depth=5, max features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-67.924 total
      5.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-65.357 total
      6.0s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-68.885 total
time=
      6.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-69.255 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-66.721 total
time= 6.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-68.139 total
time=
      0.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-65.669 total
time= 0.6s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.953 total
time= 0.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-67.651 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-66.542 total
time=
      6.6s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-68.065 total
time=
      1.7s
```

```
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-69.000 total
time=
      1.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-65.640 total
time=
      1.5s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-67.461 total
      1.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-66.945 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.971 total
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-68.070 total
      1.4s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-65.598 total
time= 1.5s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-67.033 total
time=
      1.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-66.946 total
time=
      1.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-68.853 total
time=
      2.3s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-68.920 total
time= 12.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-65.202 total
time= 12.6s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-67.844 total
time= 12.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-67.987 total
      2.4s
time=
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-65.345 total
time=
       2.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.991 total
time=
       2.3s
```

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[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-66.767 total
time=
       2.8s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-66.740 total
time= 12.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-66.526 total
time= 13.0s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-68.852 total
      5.4s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-67.921 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-65.319 total
      5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-69.255 total
time= 0.4s
[CV 4/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-66.745 total
time=
      5.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-68.139 total
time=
      0.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-65.669 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-67.953 total
time=
      0.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-67.651 total
time= 0.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-66.511 total
time= 6.4s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-69.000 total
time=
      1.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-68.065 total
time=
      1.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-65.640 total
time=
      1.7s
```

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[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-67.461 total
time=
      1.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-66.945 total
time=
       1.5s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-68.971 total
       2.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-68.070 total
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-65.598 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-67.033 total
      1.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-66.946 total
      1.5s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-68.853 total
time=
      2.0s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-68.910 total
time= 12.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-67.841 total
time= 12.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-67.987 total
time=
      2.2s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-65.158 total
time= 12.1s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-65.345 total
time=
      2.1s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.991 total
      2.4s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-66.758 total
time= 12.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-66.767 total
time=
       2.5s
```

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[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-66.507 total
time= 12.3s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-68.852 total
time=
       5.7s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-65.319 total
      5.8s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-67.921 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-69.255 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-66.745 total
      5.9s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-68.139 total
time= 0.5s
[CV 3/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-65.669 total
time= 0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-67.953 total
time=
      0.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-67.651 total
time=
      0.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-66.511 total
time=
      6.2s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-69.000 total
time= 1.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-68.065 total
time= 1.6s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-65.640 total
      1.5s
time=
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-67.461 total
time=
      1.7s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-66.945 total
time=
      1.5s
```

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[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-68.971 total
time=
       2.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-65.598 total
time=
       1.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-68.070 total
      1.8s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-67.033 total
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-66.946 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-68.853 total
      2.3s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-67.987 total
      1.9s
[CV 1/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-68.910 total
time= 13.0s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-67.841 total
time= 13.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-65.158 total
time= 12.8s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-65.345 total
time=
      2.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-66.991 total
time= 2.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-66.758 total
time= 12.4s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-66.767 total
time=
      3.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-66.507 total
time= 12.9s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-68.852 total
time=
      5.3s
```

```
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-67.921 total
time=
      5.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-65.319 total
time=
       5.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-69.255 total
      0.5s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-68.139 total
      0.5s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-65.669 total
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.745 total
      6.0s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-67.953 total
time= 0.5s
[CV 5/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-67.651 total
time=
      0.5s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-66.511 total
time=
      6.7s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-69.000 total
time= 1.7s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-68.065 total
time= 1.9s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-65.640 total
time= 1.7s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-67.461 total
time= 1.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-66.945 total
      1.6s
time=
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-68.971 total
time=
       2.1s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-65.598 total
time=
      1.7s
```

```
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-68.070 total
time=
       2.0s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-67.033 total
time=
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-66.946 total
      1.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-68.853 total
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-68.910 total
time= 13.1s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-67.841 total
time= 13.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-65.158 total
time= 12.4s
[CV 2/5] END max depth=5, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-67.987 total
time=
      2.0s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-65.345 total
time=
      2.0s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-66.991 total
time=
      2.5s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-66.758 total
time= 12.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-66.507 total
time= 12.6s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-66.767 total
time=
      2.8s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-68.852 total
      5.6s
time=
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-67.921 total
time=
      5.9s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-65.319 total
time=
       6.0s
```

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[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.392 total
time=
      0.4s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-66.745 total
time=
       6.3s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-31.968 total
      0.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.083 total
      0.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.505 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.267 total
      0.8s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-66.511 total
      6.6s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.257 total
time=
      2.1s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.836 total
time=
      2.2s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-30.892 total
time=
      2.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.002 total
time= 1.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-31.127 total
time= 1.6s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.149 total
time= 2.2s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.725 total
      1.8s
time=
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-30.866 total
time=
      1.9s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.017 total
time=
      1.9s
```

```
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.053 total
time=
      1.5s
[CV 1/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-68.910 total
time= 13.2s
[CV 2/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-67.841 total
time= 13.3s
[CV 3/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-65.158 total
time= 13.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.120 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.722 total
      3.1s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-31.013 total
      2.9s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.869 total
time=
      3.2s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.892 total
time=
      2.9s
[CV 4/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-66.758 total
time= 13.0s
[CV 5/5] END max_depth=5, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-66.507 total
time= 12.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-32.202 total
time= 8.0s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-31.667 total
time= 8.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.760 total
      8.3s
time=
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.502 total
time=
      0.7s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.960 total
time=
      8.7s
```

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[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.889 total
time=
      8.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-33.426 total
time=
       1.0s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-32.386 total
      1.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.234 total
      0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.154 total
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.195 total
      2.1s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-32.849 total
      2.1s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.923 total
time=
      2.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.026 total
time=
      1.4s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.846 total
time= 1.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.179 total
time=
      2.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-32.700 total
      2.2s
time=
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.616 total
time=
      2.2s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.964 total
      2.0s
time=
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.724 total
time=
       2.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.115 total
time= 17.9s
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[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-30.764 total
time= 17.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-31.605 total
time= 18.4s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-33.143 total
      3.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.600 total
      3.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.539 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.834 total
      3.3s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-31.707 total
time= 4.6s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-30.780 total
time= 19.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-30.849 total
time= 18.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-33.206 total
time=
      8.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-32.526 total
time=
      9.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-31.547 total
time= 9.1s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.753 total
time= 9.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-36.717 total
      0.8s
time=
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-35.764 total
time=
      1.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-35.285 total
time=
      1.1s
```

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[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.758 total
time=
      9.9s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-35.522 total
time=
       1.4s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-34.927 total
      1.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-36.543 total
      2.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-34.907 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-35.695 total
      2.3s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-34.891 total
      2.0s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-35.024 total
time=
      2.1s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-36.244 total
time=
      3.1s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-35.565 total
time=
      2.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-34.797 total
time=
      2.2s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-34.677 total
time= 2.0s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-34.942 total
time= 1.9s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-33.200 total
time= 18.4s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-36.236 total
time=
       2.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.539 total
time= 17.3s
```

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[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.690 total
time=
       2.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-34.646 total
time=
       2.8s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.577 total
time= 17.3s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-34.674 total
      3.4s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-34.957 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-31.730 total
time= 18.2s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-31.731 total
time= 17.8s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-36.186 total
time=
      8.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.685 total
time=
      9.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.680 total
time=
      9.2s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.713 total
time=
      9.4s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-44.975 total
time= 1.1s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.618 total
time= 1.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.139 total
time=
      1.7s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-42.441 total
time=
      1.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.557 total
time=
      1.1s
```

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[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.832 total
time= 11.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-44.289 total
time=
       2.2s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-43.369 total
      1.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.894 total
      2.1s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-42.366 total
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.262 total
      1.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-44.139 total
      2.2s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.600 total
time=
      1.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-43.043 total
time=
      2.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-42.156 total
time= 1.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.066 total
time= 1.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-36.174 total
time= 19.1s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-44.095 total
time= 3.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.572 total
time= 18.8s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-43.032 total
time=
       2.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.660 total
time= 19.2s
```

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[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.543 total
time=
       2.7s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-42.149 total
time=
       2.4s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.993 total
      3.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.701 total
time= 17.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.741 total
time= 17.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.945 total
      6.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-42.963 total
time= 6.7s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.444 total
time=
      6.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-35.924 total
time=
      0.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.007 total
time= 6.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-35.120 total
time=
      0.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-34.105 total
time= 0.8s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.839 total
time= 6.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.997 total
      1.1s
time=
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-34.231 total
time=
      0.9s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-35.602 total
time=
      1.8s
```

```
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-34.750 total
time=
      1.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-33.854 total
time=
       2.1s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.892 total
       2.2s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.764 total
      2.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-35.302 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-34.668 total
      2.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-33.616 total
      2.4s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.673 total
time=
      2.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.735 total
time=
      1.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.873 total
time= 15.3s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.159 total
time=
      2.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-42.976 total
time= 15.3s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.355 total
time= 13.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-34.555 total
      2.4s
time=
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.455 total
time=
       2.9s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.973 total
time= 14.2s
```

```
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.559 total
time=
      3.3s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-33.656 total
time=
       3.3s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-41.840 total
time= 14.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-35.142 total
      7.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-34.473 total
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.469 total
      8.3s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-33.442 total
time= 8.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-35.924 total
time=
      0.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-35.120 total
time=
      0.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.997 total
time=
      0.9s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.686 total
time=
      8.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-34.105 total
time= 1.0s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-34.231 total
time= 1.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-35.602 total
time=
      2.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-34.750 total
time=
       3.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.854 total
time=
       2.6s
```

```
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.892 total
time=
      1.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-33.764 total
time=
       1.7s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-35.302 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-34.668 total
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.616 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.673 total
      1.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-33.735 total
      1.7s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-35.159 total
time=
      2.5s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-33.327 total
time= 17.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-34.426 total
time= 17.9s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-35.146 total
time= 18.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-34.555 total
      2.5s
time=
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.455 total
time=
       2.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.656 total
       2.2s
time=
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.559 total
time=
       2.4s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-33.580 total
time= 15.8s
```

```
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-33.401 total
time= 16.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-34.473 total
time=
      7.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-35.142 total
      7.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.469 total
      7.1s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.442 total
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-37.446 total
      0.5s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-37.029 total
time= 0.6s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-35.709 total
time= 0.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-35.967 total
time=
      0.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.686 total
time=
      7.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-36.528 total
time= 0.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-37.431 total
time= 1.9s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-35.402 total
time= 1.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.778 total
time=
      1.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-35.632 total
time=
      1.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.079 total
```

1.7s

```
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-37.371 total
time=
       2.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-36.651 total
time=
        2.2s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.300 total
       2.1s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.349 total
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.896 total
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-37.250 total
      4.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-35.146 total
time= 18.0s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-36.448 total
time=
      3.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-34.426 total
time= 18.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-33.327 total
time= 17.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-35.351 total
time=
      3.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-35.450 total
time= 3.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.827 total
time= 4.2s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-33.580 total
time= 18.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-33.401 total
time= 18.6s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.251 total
```

8.5s

```
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.238 total
time=
      8.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-36.463 total
time=
       8.5s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-45.135 total
      0.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-43.960 total
      0.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.467 total
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.359 total
      0.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-42.972 total
time= 0.9s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.723 total
time=
      8.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-43.376 total
time=
      0.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-44.589 total
time=
      2.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-43.681 total
time=
      2.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-42.147 total
      2.4s
time=
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.555 total
time=
      2.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.696 total
time=
       2.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-44.225 total
time=
       3.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-43.380 total
```

2.5s

```
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.851 total
time=
       2.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.416 total
time=
       2.0s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.368 total
      1.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-44.146 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-43.326 total
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-37.186 total
time= 17.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-36.466 total
time= 16.3s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.260 total
time= 16.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.848 total
time=
      2.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-42.369 total
time=
      2.2s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.510 total
time= 15.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-42.261 total
time= 2.6s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.651 total
time= 15.5s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.824 total
time=
      5.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-44.260 total
time=
      5.8s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.225 total
time=
       5.9s
```

```
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-39.423 total
time=
      0.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-42.238 total
time=
       5.9s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-38.301 total
      0.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.939 total
      0.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-37.088 total
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.104 total
      6.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-37.658 total
      1.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-39.253 total
time=
      1.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-38.187 total
time=
      2.2s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.493 total
time=
      2.1s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-37.071 total
time=
      1.9s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-37.175 total
time= 1.6s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-39.058 total
time=
      2.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-38.140 total
      2.1s
time=
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-36.387 total
time=
      1.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-36.961 total
time=
      1.7s
```

```
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-37.140 total
time=
      1.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-43.309 total
time= 13.3s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-44.243 total
time= 13.6s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-38.850 total
      2.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.710 total
time= 13.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-38.040 total
      2.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-36.382 total
      2.3s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.266 total
time= 12.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-37.008 total
time=
      2.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-37.064 total
time=
       2.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.135 total
time= 12.8s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-38.829 total
time= 6.1s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-37.846 total
time= 6.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-36.407 total
time=
      6.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-36.940 total
time=
      6.6s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-39.423 total
time=
      0.5s
```

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[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-38.301 total
time=
      0.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-37.079 total
time=
       6.4s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-36.939 total
      0.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-37.088 total
      0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-37.658 total
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-39.253 total
      1.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-38.187 total
time= 1.8s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.493 total
time=
      1.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-37.071 total
time=
      1.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-37.175 total
time=
      1.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-39.058 total
time=
      2.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=300, oob score=True;, score=-38.140 total
time= 1.6s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.387 total
time= 1.9s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.961 total
      1.8s
time=
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-37.140 total
time=
      1.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-38.781 total
time= 14.1s
```

```
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-37.809 total
time= 14.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-36.411 total
time= 14.3s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-38.850 total
       2.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-38.040 total
      2.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.382 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-36.892 total
time= 12.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-37.008 total
      2.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-37.085 total
time= 12.9s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-37.064 total
time=
      2.9s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-38.829 total
time=
      6.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-37.846 total
time=
      6.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-36.407 total
time= 6.3s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-39.423 total
time= 0.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-36.940 total
      6.8s
time=
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-38.301 total
time=
      0.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-36.939 total
```

0.5s

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[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-37.088 total
time=
      0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-37.079 total
time=
       6.9s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-37.658 total
      1.0s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-39.253 total
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-38.187 total
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.493 total
      1.9s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-37.071 total
      1.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-37.175 total
time=
      1.6s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-39.058 total
time=
      2.1s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-38.140 total
time= 1.8s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.387 total
time=
      1.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.961 total
time= 1.6s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-37.140 total
time= 1.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-38.781 total
time= 14.6s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-38.850 total
time=
       2.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-38.040 total
```

2.0s

```
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-37.809 total
time= 14.5s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.411 total
time= 14.5s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-36.382 total
       2.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.892 total
time= 12.7s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-37.008 total
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-37.085 total
time= 13.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-37.064 total
      2.9s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-38.829 total
time=
      6.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.846 total
time=
      6.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-36.407 total
time=
      6.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-45.815 total
time= 0.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-44.218 total
time= 0.6s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.933 total
time= 0.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-36.940 total
      6.9s
time=
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.376 total
time=
      0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.967 total
```

0.7s

```
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.079 total
time=
      6.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-44.128 total
time=
       1.6s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-45.350 total
      1.8s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-42.778 total
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-43.278 total
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-43.023 total
      1.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-45.032 total
      2.2s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.521 total
time=
      1.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-43.948 total
time=
      1.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-42.889 total
time=
      1.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.940 total
time=
      1.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-45.030 total
time= 2.6s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-44.081 total
time=
      2.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-38.781 total
time= 14.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-37.809 total
time= 14.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.411 total
time= 14.4s
```

```
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.600 total
time=
       2.7s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.859 total
time=
       2.4s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.924 total
      3.0s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.892 total
time= 13.4s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-37.085 total
time= 13.2s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.073 total
      5.8s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-43.902 total
      5.9s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.551 total
time=
      6.3s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-48.335 total
time=
      0.4s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-47.061 total
time= 0.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.237 total
time=
      0.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-42.878 total
time= 6.8s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.720 total
time= 0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.916 total
time=
      0.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.743 total
time=
      7.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-48.040 total
```

1.6s

```
[CV 2/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-46.976 total
time=
      1.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-45.078 total
time=
      1.7s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.481 total
      1.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.495 total
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-47.928 total
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-46.313 total
      1.6s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-44.594 total
      1.5s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.233 total
time=
      1.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.287 total
time=
      1.5s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-47.812 total
time=
      2.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.365 total
time= 13.1s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-44.951 total
time= 13.2s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.919 total
time= 13.2s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-46.492 total
      2.0s
time=
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-44.621 total
time=
       2.6s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-45.349 total
time=
       2.7s
```

```
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.900 total
time= 13.0s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-42.768 total
time= 12.9s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-45.267 total
       2.9s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-47.676 total
      5.7s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-46.367 total
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-44.467 total
      6.2s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-48.335 total
time= 0.4s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-47.061 total
time=
      0.4s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.237 total
time=
      0.5s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-45.346 total
time=
      6.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.720 total
time=
      0.6s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-45.916 total
time= 0.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.143 total
time= 6.2s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-48.040 total
      1.9s
time=
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-46.976 total
time=
      1.7s
[CV 3/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.078 total
```

1.7s

```
[CV 5/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.495 total
time=
      1.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-45.481 total
time=
       1.7s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-47.928 total
       2.2s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-46.313 total
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-44.594 total
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.233 total
      1.3s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-45.287 total
      1.5s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-44.350 total
time= 12.7s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-46.292 total
time= 13.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-47.812 total
time=
       2.3s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-47.439 total
time= 13.3s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-46.492 total
time= 2.4s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-44.621 total
time=
      2.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.349 total
      2.4s
time=
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-45.204 total
time= 12.1s
[CV 5/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.267 total
time=
       2.4s
```

```
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-45.407 total
time= 12.4s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-46.367 total
time=
       5.9s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-47.676 total
      6.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-44.467 total
      6.2s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-48.335 total
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-47.061 total
time= 0.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-45.346 total
time= 6.5s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-45.237 total
time=
      0.8s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-45.143 total
time=
      6.5s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.720 total
time=
      0.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-45.916 total
time=
      0.7s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-48.040 total
time= 1.7s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-46.976 total
time= 2.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-45.078 total
time=
      1.8s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-45.481 total
time=
      1.3s
[CV 5/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-45.495 total
time=
      1.1s
```

```
[CV 1/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-47.928 total
time=
      1.9s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-46.313 total
time=
       1.5s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-44.594 total
      1.4s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-45.233 total
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-45.287 total
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-47.812 total
      2.0s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-46.292 total
time= 13.1s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-47.439 total
time= 13.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-44.350 total
time= 13.2s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-46.492 total
time=
       2.7s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-44.621 total
time=
      2.3s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-45.349 total
      2.3s
time=
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-45.267 total
time= 2.4s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-45.204 total
time= 11.9s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-45.407 total
time= 12.1s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-47.676 total
time=
      5.9s
```

```
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-46.367 total
time=
      5.9s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-44.467 total
time=
       5.5s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-45.346 total
      5.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-48.335 total
      0.6s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-47.061 total
[CV 5/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-45.143 total
      6.1s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.237 total
time= 0.8s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-45.720 total
time=
      0.9s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.916 total
time=
      0.5s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-48.040 total
time= 1.8s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-46.976 total
time=
      1.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-45.078 total
time= 1.7s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.481 total
time= 1.5s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.495 total
      1.6s
time=
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-47.928 total
time=
       2.1s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-46.313 total
time=
      1.5s
```

```
[CV 3/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-44.594 total
time=
      1.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.233 total
time=
      1.7s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.287 total
      1.3s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-44.350 total
time= 12.8s
[CV 2/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-46.292 total
time= 13.0s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-47.439 total
time= 13.4s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-47.812 total
      2.4s
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-46.492 total
time=
      2.0s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-44.621 total
time=
      2.4s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-45.267 total
time=
      2.4s
[CV 4/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-45.349 total
time=
      2.5s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-45.407 total
time= 12.5s
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.204 total
time= 12.5s
[CV 1/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-47.676 total
      5.7s
time=
[CV 2/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-46.367 total
time=
      5.8s
[CV 3/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-44.467 total
time=
       6.1s
```

```
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.477 total
time=
      0.6s
[CV 4/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-45.346 total
time=
       6.3s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.825 total
      0.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.996 total
[CV 5/5] END max depth=10, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.143 total
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.058 total
      1.0s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.233 total
      1.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.146 total
time=
      2.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.646 total
time=
      2.2s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.858 total
time=
      2.6s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.082 total
time=
      1.7s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-27.785 total
time= 1.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.131 total
time=
      2.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.600 total
      2.7s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.887 total
time=
       2.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.938 total
time=
      1.6s
```

```
[CV 2/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-46.292 total
time= 14.3s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-27.781 total
time=
      1.4s
[CV 1/5] END max depth=10, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-47.439 total
time= 14.7s
[CV 3/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.350 total
time= 14.7s
[CV 5/5] END max_depth=10, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-45.204 total
time= 13.7s
[CV 4/5] END max depth=10, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-45.407 total
time= 14.0s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-29.142 total
time= 4.4s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.512 total
time=
      4.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.739 total
time=
      4.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.843 total
time= 4.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.885 total
time= 5.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-29.155 total
time= 10.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.512 total
time= 10.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-27.828 total
time= 11.4s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.797 total
time= 11.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.625 total
time=
      0.8s
```

```
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.406 total
time=
      1.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-28.886 total
time=
       1.4s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-28.979 total
      1.4s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-28.843 total
      0.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.656 total
time= 13.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.264 total
      3.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-29.203 total
      3.9s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.688 total
time=
      4.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.613 total
time=
      3.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.583 total
time=
      2.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.142 total
time=
      4.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-29.092 total
time= 4.5s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.629 total
time= 4.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.553 total
      3.7s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.798 total
time= 26.5s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.476 total
time= 27.4s
```

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[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-29.146 total
time= 27.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-28.536 total
time=
       3.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-30.142 total
      7.3s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.122 total
      7.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.498 total
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.514 total
      7.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-28.457 total
time= 7.2s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-27.785 total
time= 30.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.618 total
time= 29.9s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-30.053 total
time= 14.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-29.135 total
time= 13.0s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.457 total
time= 11.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.483 total
time= 0.7s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.440 total
time= 11.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-32.212 total
time=
      0.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.427 total
```

0.8s

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[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.452 total
time= 12.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-31.599 total
time=
      1.1s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.661 total
      1.0s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.141 total
      2.2s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-31.430 total
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.141 total
      2.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-31.300 total
      2.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.351 total
time=
      2.0s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.114 total
time=
      2.9s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-32.098 total
time=
      2.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.319 total
time=
      2.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-31.304 total
time= 3.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.376 total
time= 2.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-30.017 total
time= 23.0s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-33.015 total
time=
       3.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-29.173 total
time= 22.1s
```

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[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.104 total
time=
       3.1s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-31.224 total
time=
       2.9s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.476 total
time= 21.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-31.182 total
      2.7s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.423 total
time= 19.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.431 total
      2.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.408 total
time= 18.7s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.996 total
time=
      8.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.969 total
time=
      8.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.198 total
time= 8.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.241 total
time=
      8.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-40.866 total
time= 0.6s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.721 total
time= 0.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.504 total
      0.9s
time=
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.369 total
time=
      9.4s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.929 total
time=
      1.0s
```

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[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.209 total
time=
      1.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-40.629 total
time=
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.421 total
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-38.422 total
      2.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-38.666 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.773 total
      2.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-40.572 total
time= 3.1s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-39.494 total
time=
      3.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-38.418 total
time=
      2.6s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-38.674 total
time=
      2.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.655 total
time=
      2.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-40.443 total
time= 3.3s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.467 total
time= 2.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.942 total
time= 20.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.991 total
time= 20.2s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.198 total
time= 18.9s
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[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.226 total
time=
      3.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.569 total
time=
       3.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.486 total
      3.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.215 total
time= 17.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.307 total
time= 17.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.487 total
time= 7.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-39.386 total
time= 7.4s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.168 total
time=
      7.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.857 total
time=
      0.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.430 total
time= 8.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.858 total
time=
      0.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-30.342 total
time= 0.8s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.606 total
time= 1.0s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.303 total
      1.0s
time=
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.360 total
time=
      8.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.728 total
time=
       2.1s
```

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[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-30.546 total
time=
       2.0s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-30.228 total
time=
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-30.264 total
       2.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-30.039 total
      2.3s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.687 total
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-30.449 total
      2.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-30.136 total
      2.1s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-30.082 total
time=
      1.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.991 total
time=
      2.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.587 total
time=
      3.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.487 total
time= 17.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-39.336 total
time= 17.2s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.131 total
time= 17.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.445 total
      3.3s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.961 total
time=
      3.1s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.430 total
time= 16.2s
```

```
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.311 total
time= 16.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-29.887 total
time=
       3.1s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-29.906 total
      3.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.573 total
      8.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-30.432 total
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-29.934 total
      9.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-31.857 total
time= 0.7s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-29.847 total
time=
      9.0s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.858 total
time=
      1.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-29.789 total
time=
      9.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.342 total
time=
      1.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-30.606 total
time= 0.9s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.303 total
time= 1.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.728 total
      2.2s
time=
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.546 total
time=
       2.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.228 total
time=
       2.6s
```

```
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.264 total
time=
       2.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-30.039 total
time=
        2.2s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-31.687 total
       2.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.449 total
       2.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.136 total
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.082 total
      2.7s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-29.991 total
      2.5s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-30.461 total
time= 19.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-29.826 total
time= 19.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-31.569 total
time= 20.3s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.587 total
time=
      4.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-30.445 total
time= 3.8s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.961 total
time=
      3.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.906 total
       3.9s
time=
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.887 total
time=
       3.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-29.790 total
```

time= 18.0s

```
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-29.797 total
time= 18.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-30.432 total
time=
       8.4s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.573 total
      9.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-29.847 total
      8.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-29.934 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.290 total
      0.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-32.553 total
time= 1.1s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.893 total
time=
      1.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-32.379 total
time=
      0.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-32.226 total
time= 1.0s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-29.789 total
time= 10.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-33.913 total
time= 3.3s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.390 total
time= 3.0s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.769 total
       3.1s
time=
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-32.048 total
time=
       2.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.770 total
```

2.2s

```
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.876 total
time=
       2.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.770 total
time=
[CV 2/5] END max depth=10, max features=log2, min samples leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-32.383 total
       2.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.905 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.814 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.569 total
time= 19.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-29.826 total
time= 19.5s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-30.461 total
time= 19.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-33.817 total
time=
      3.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-32.378 total
time=
      3.2s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.763 total
time=
      3.4s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.838 total
time= 3.1s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.846 total
time= 3.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-29.797 total
time= 18.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-29.790 total
time= 18.5s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.409 total
```

7.8s

```
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.727 total
time=
      8.4s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.766 total
time=
       8.2s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-41.092 total
      0.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.786 total
      8.3s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.846 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.782 total
      8.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-38.575 total
time= 0.9s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.201 total
time=
      1.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.325 total
time=
      0.9s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-40.943 total
time= 1.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.521 total
time=
      2.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-38.586 total
      2.2s
time=
[CV 4/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.884 total
time=
      2.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.941 total
time=
       2.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-40.815 total
time=
       3.0s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-39.641 total
```

2.4s

```
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.513 total
time=
       2.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.828 total
time=
[CV 5/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.866 total
      1.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-40.744 total
      3.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.685 total
time= 19.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.591 total
      2.6s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-32.445 total
time= 18.6s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.709 total
time= 18.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-38.420 total
time=
      3.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.803 total
time= 17.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.626 total
time=
      3.3s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-31.777 total
time= 17.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.638 total
time= 3.3s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.715 total
time=
      7.6s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.597 total
time=
      7.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.323 total
time=
      7.7s
```

```
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-35.474 total
time=
      0.6s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-38.623 total
time=
       8.2s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-34.003 total
      0.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.921 total
      0.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.251 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.454 total
      1.2s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-38.539 total
      9.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-35.067 total
time=
      2.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.799 total
time=
      2.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.939 total
time=
      2.1s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.118 total
time=
      2.3s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-33.276 total
time= 1.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-34.983 total
time= 2.6s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.718 total
      2.3s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.010 total
time=
      1.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.972 total
time=
      1.6s
```

```
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.213 total
time=
      1.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-39.533 total
time= 17.2s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-40.663 total
time= 17.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.264 total
time= 17.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-34.931 total
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.629 total
      4.0s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-32.822 total
time= 4.2s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.900 total
time=
      3.3s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.142 total
time=
      3.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.639 total
time= 17.7s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.529 total
time= 17.9s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-33.641 total
time= 7.7s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-34.872 total
time= 8.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.799 total
time=
      7.9s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-35.474 total
time=
      0.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.838 total
time=
      8.0s
```

```
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-34.003 total
time=
      0.7s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-32.921 total
time=
       1.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-33.004 total
      8.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.251 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.454 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-35.067 total
      1.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-33.799 total
      2.2s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.939 total
time=
      2.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.118 total
time=
      2.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.276 total
time=
      2.1s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-34.983 total
time=
      2.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=300, oob score=True;, score=-33.718 total
      2.6s
time=
[CV 3/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.010 total
time=
      2.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.213 total
time=
      1.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.972 total
time=
       2.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-34.890 total
time= 17.9s
```

```
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-34.931 total
time=
       3.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-32.745 total
time= 18.1s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-33.629 total
      3.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.822 total
      3.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-33.666 total
time= 18.6s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.900 total
      2.7s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-32.897 total
time= 16.5s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.142 total
time=
      3.7s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-32.964 total
time= 17.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-34.872 total
time=
      9.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-33.641 total
time=
      9.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.799 total
time= 9.5s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-32.838 total
time= 9.6s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-35.474 total
time=
      0.6s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-33.004 total
time=
      9.9s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.003 total
```

0.7s

```
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-32.921 total
time=
      0.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-33.454 total
time=
      0.7s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-33.251 total
      0.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-35.067 total
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.939 total
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.799 total
      2.1s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-33.118 total
time= 1.8s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.276 total
time=
      1.9s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-34.983 total
time=
      2.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-33.718 total
time=
      2.1s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.010 total
time=
      2.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-32.972 total
time= 2.1s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.213 total
time= 1.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-34.890 total
time= 18.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-34.931 total
time=
       3.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.745 total
```

time= 18.0s

```
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-33.666 total
time= 18.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-33.629 total
time=
       3.4s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.822 total
      3.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.900 total
       3.6s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-33.142 total
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.897 total
time= 17.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.964 total
time= 17.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.641 total
time=
      7.2s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.872 total
time=
      7.4s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.799 total
time=
      7.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.838 total
time=
      7.3s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-41.778 total
time= 0.6s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-40.111 total
time= 0.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.916 total
time=
      0.9s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.448 total
time=
      0.7s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.004 total
```

7.6s

```
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.629 total
time=
      0.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-39.840 total
time=
       2.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.313 total
       2.2s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-38.652 total
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-39.212 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.301 total
      2.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-41.146 total
      3.7s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-39.984 total
time=
      2.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-38.694 total
time=
      3.1s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-39.250 total
time=
      2.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-39.166 total
time=
      2.6s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-41.084 total
time= 3.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.890 total
time= 18.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.903 total
time=
      2.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.691 total
time=
       2.6s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.666 total
```

time= 17.1s

```
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.745 total
time= 17.3s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-39.164 total
time=
       2.6s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.897 total
time= 16.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-39.019 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.964 total
time= 16.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.040 total
time= 7.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-39.942 total
time= 7.4s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.625 total
time=
      8.1s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.055 total
time=
      8.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-43.503 total
time= 0.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.874 total
time=
      8.3s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-42.049 total
time= 0.7s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.398 total
time= 0.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-40.720 total
time=
      0.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.585 total
time=
      0.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-43.185 total
```

1.8s

```
[CV 2/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.477 total
time=
       2.0s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-40.434 total
time=
       2.0s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.042 total
      1.6s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.221 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-43.134 total
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.501 total
      1.9s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-40.482 total
      2.1s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.964 total
time=
      1.8s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.105 total
time=
      1.7s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.021 total
time= 16.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.880 total
time= 16.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-38.594 total
time= 16.7s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-42.962 total
time= 3.5s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-41.528 total
      3.4s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.317 total
time=
       3.3s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.894 total
time=
       3.1s
```

```
[CV 4/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.983 total
time=
      3.2s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-39.055 total
time= 17.1s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=5,
min samples split=20, n estimators=2000, oob score=True;, score=-38.844 total
time= 17.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-42.922 total
      8.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-41.569 total
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.204 total
time= 7.8s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-43.503 total
time= 0.5s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-42.049 total
time=
      0.5s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.785 total
time=
      8.0s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.832 total
time=
      8.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-40.720 total
time=
      0.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-41.398 total
time= 0.6s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.585 total
time= 0.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-43.185 total
      1.7s
time=
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-40.434 total
time=
      1.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.477 total
```

1.9s

```
[CV 4/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.042 total
time=
       3.0s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-41.221 total
time=
       2.9s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-43.134 total
      4.1s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.501 total
       3.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.482 total
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.964 total
      3.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-41.105 total
      1.8s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-42.962 total
time=
      3.0s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-42.968 total
time= 19.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-41.528 total
time=
      2.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-41.560 total
time= 18.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.090 total
time= 16.7s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.317 total
time=
      2.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-40.894 total
time= 17.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.894 total
time=
      3.4s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.983 total
```

3.8s

```
[CV 5/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-40.703 total
time= 17.3s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-41.569 total
time=
       8.1s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-42.922 total
      8.4s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-40.204 total
      8.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-43.503 total
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.832 total
      8.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-42.049 total
time= 0.6s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-40.720 total
time= 0.7s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.398 total
time=
      1.0s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.585 total
time=
      1.1s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.785 total
time=
      9.5s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-43.185 total
      2.5s
time=
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.434 total
time= 2.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-41.477 total
time=
      2.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-41.042 total
time=
       2.3s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-41.221 total
time=
       2.3s
```

```
[CV 1/5] END max depth=10, max features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-43.134 total
time=
       2.9s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.501 total
time=
        2.3s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-40.482 total
       2.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-40.964 total
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.105 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-42.962 total
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-42.968 total
time= 18.8s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.090 total
time= 18.4s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-41.528 total
time=
      3.1s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-41.560 total
time= 18.7s
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.317 total
time=
      2.7s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.983 total
time= 3.5s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.894 total
time= 3.8s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.894 total
time= 17.6s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-40.703 total
time= 17.4s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-42.922 total
time=
      7.6s
```

```
[CV 3/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.204 total
time=
      7.5s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-41.569 total
time=
      7.8s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-43.503 total
      0.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.832 total
      7.9s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-42.049 total
[CV 3/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-40.720 total
      0.5s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.398 total
time= 0.7s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.585 total
time= 0.6s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-43.185 total
time=
      1.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-41.477 total
time=
      1.9s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.785 total
time=
      8.6s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-40.434 total
      2.3s
time=
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.221 total
time= 2.0s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.042 total
      2.2s
time=
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-43.134 total
time=
       2.7s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.501 total
time=
       2.7s
```

```
[CV 3/5] END max depth=10, max features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.482 total
time=
       2.6s
[CV 4/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.964 total
time=
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.105 total
      1.9s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-42.962 total
      3.0s
[CV 1/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-42.968 total
time= 16.8s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.317 total
      2.2s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-41.560 total
time= 16.8s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.528 total
time=
      2.5s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.090 total
time= 16.9s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.983 total
time=
      3.0s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.894 total
time= 16.1s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-40.703 total
time= 16.2s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.894 total
time= 3.8s
[CV 2/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.569 total
time=
      7.3s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.204 total
time=
      7.3s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.832 total
time=
      7.2s
```

```
[CV 1/5] END max depth=10, max features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.922 total
time=
      7.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.878 total
time=
      0.9s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.717 total
      0.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.604 total
      0.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.370 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.142 total
      0.9s
[CV 5/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-40.785 total
      8.2s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.524 total
time=
      2.4s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.408 total
time=
      2.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.359 total
time=
      2.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.819 total
time=
      2.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-27.786 total
      2.4s
time=
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.337 total
time= 3.3s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.271 total
      2.5s
time=
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.205 total
time=
       2.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.682 total
time=
       2.1s
```

```
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.543 total
time=
       2.4s
[CV 1/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-42.968 total
time= 17.0s
[CV 2/5] END max depth=10, max features=log2, min samples leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-41.560 total
time= 17.1s
[CV 3/5] END max_depth=10, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.090 total
time= 16.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.384 total
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.220 total
      3.9s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-27.136 total
      3.6s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.599 total
time=
      3.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.568 total
time=
      3.9s
[CV 4/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.894 total
time= 16.8s
[CV 5/5] END max depth=10, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.703 total
time= 16.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-28.352 total
time= 9.0s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.163 total
time=
       9.6s
/Users/albertolandi/anaconda3/envs/IR2/lib/python3.10/site-
packages/joblib/externals/loky/process executor.py:752: UserWarning: A worker
stopped while some jobs were given to the executor. This can be caused by a too
short worker timeout or by a memory leak.
 warnings.warn(
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-27.130 total
time=
       9.3s
```

```
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-27.464 total
time=
      9.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.447 total
time= 10.0s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.146 total
time= 14.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.088 total
time= 14.1s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-28.317 total
time= 14.2s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.454 total
      0.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-29.622 total
time= 0.4s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.369 total
time=
      0.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.181 total
time=
      0.6s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.451 total
time=
      1.3s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.177 total
time= 0.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-29.820 total
time= 1.3s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.948 total
time= 1.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.030 total
      1.8s
time=
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.953 total
time=
      1.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.199 total
time=
       2.8s
```

```
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.714 total
time=
       3.2s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-28.760 total
time=
       3.0s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-30.135 total
      3.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.574 total
      3.1s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.874 total
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.892 total
      1.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-28.797 total
      3.3s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-27.407 total
time= 15.2s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.765 total
time=
      2.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.367 total
time= 16.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.647 total
time=
      4.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-30.081 total
time= 8.6s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-29.611 total
time= 8.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.524 total
time=
      8.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-35.474 total
time=
      0.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.847 total
time=
      8.8s
```

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[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.929 total
time=
      1.0s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.792 total
time=
      8.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.409 total
      1.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.191 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.498 total
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.879 total
      2.0s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.672 total
      2.2s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.005 total
time=
      2.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.168 total
time=
      1.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.154 total
time=
      2.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-34.555 total
time=
      2.9s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.634 total
      2.3s
time=
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.801 total
time= 2.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.085 total
      1.9s
time=
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.195 total
time=
       2.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.445 total
time=
       2.8s
```

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[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.651 total
time=
       2.2s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-30.033 total
time= 18.1s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-29.612 total
time= 17.9s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.687 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.543 total
time= 17.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.037 total
      2.7s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.880 total
time= 16.9s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.067 total
time=
      3.2s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.814 total
time= 17.5s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.360 total
time=
      6.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.666 total
time=
      6.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-32.654 total
      6.2s
time=
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.899 total
time= 6.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.261 total
time=
      0.4s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.029 total
time=
      6.1s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.218 total
time=
      0.7s
```

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[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.060 total
time=
      0.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-41.618 total
time=
      0.8s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-43.581 total
      1.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-42.772 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.282 total
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.636 total
      1.4s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.363 total
      1.2s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-43.416 total
time=
      2.1s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-42.368 total
time=
      1.9s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-41.143 total
time=
      2.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.672 total
time=
      0.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-41.482 total
time= 1.9s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.392 total
time= 14.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.170 total
      1.6s
time=
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-43.389 total
time=
       2.8s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.364 total
time=
       2.8s
```

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[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.998 total
time=
       2.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-33.660 total
time= 13.9s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.484 total
       2.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.631 total
time= 14.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.929 total
time= 14.5s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.391 total
      2.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-32.955 total
time= 15.0s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.285 total
time=
      6.3s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.376 total
time=
      6.4s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.967 total
time=
      6.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.441 total
time=
      6.4s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-33.558 total
time= 0.4s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.357 total
time= 6.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.112 total
      0.5s
time=
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.835 total
time=
      0.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      0.7s
```

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[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.151 total
time=
      0.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-33.377 total
time=
       2.0s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.649 total
      1.8s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.678 total
      2.0s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.982 total
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.824 total
      1.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-33.143 total
      2.5s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.542 total
time=
      2.3s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.430 total
time=
      2.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.743 total
time=
      2.3s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.861 total
time= 1.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-43.207 total
time= 15.1s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.365 total
time= 14.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.200 total
      3.0s
time=
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.454 total
time=
       2.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.303 total
time=
       2.5s
```

```
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.753 total
time=
       2.4s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-40.790 total
time= 13.5s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-31.801 total
       2.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.437 total
time= 13.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.323 total
time= 13.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.258 total
      7.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-32.430 total
time= 7.3s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-31.334 total
time=
      7.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.756 total
time=
      7.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.635 total
time=
      7.9s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.112 total
time=
      0.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-33.558 total
time= 0.9s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-31.835 total
time= 0.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.151 total
      1.0s
time=
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      0.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.377 total
time=
       2.0s
```

```
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.678 total
time=
       2.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-31.649 total
time=
       2.3s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.824 total
      1.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.982 total
      1.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.143 total
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.542 total
      1.9s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-31.430 total
      1.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.743 total
time=
      1.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.861 total
time=
      1.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-33.202 total
time= 16.8s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.441 total
time= 16.6s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-33.200 total
time= 2.9s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-31.248 total
time= 16.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.454 total
      2.7s
time=
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.303 total
time=
       2.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.753 total
time=
       3.3s
```

```
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-31.560 total
time= 15.3s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-31.801 total
time=
       3.3s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-31.689 total
time= 15.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.258 total
      6.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-32.430 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.334 total
time= 7.1s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-36.071 total
time= 0.4s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.635 total
time=
      7.0s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-35.561 total
time=
      0.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-34.595 total
time=
      0.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.594 total
time=
      0.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-34.529 total
time= 1.2s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.756 total
time= 7.4s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.018 total
      1.9s
time=
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-35.149 total
time=
      1.9s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.163 total
```

2.2s

```
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.196 total
time=
      1.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-34.227 total
time=
       2.0s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-35.828 total
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.008 total
      2.2s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-33.978 total
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.959 total
      1.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-34.248 total
      1.5s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.773 total
time=
      2.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-35.091 total
time=
      1.9s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-32.441 total
time= 16.0s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-33.202 total
time= 16.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-34.040 total
time= 2.2s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.248 total
time= 15.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.560 total
time= 14.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-34.137 total
time=
      2.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.689 total
```

time= 14.7s

```
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.193 total
time=
      3.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-35.817 total
      7.2s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-35.038 total
      7.7s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.050 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.911 total
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.297 total
      0.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-44.631 total
time= 0.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.516 total
time=
      0.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-41.999 total
time=
      0.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.178 total
time=
      8.5s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.619 total
time=
      0.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-44.240 total
time= 1.7s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.861 total
time= 1.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.813 total
      2.0s
time=
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-42.296 total
time=
       2.1s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.068 total
time=
      1.7s
```

```
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-43.907 total
time=
       2.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.651 total
time=
       2.0s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.574 total
      1.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.127 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-41.754 total
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-43.865 total
      2.6s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-42.621 total
      2.2s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.977 total
time= 16.5s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.750 total
time= 16.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.890 total
time= 16.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.475 total
time=
      2.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.895 total
      2.6s
time=
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.791 total
time= 2.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.089 total
time= 15.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.196 total
time= 15.3s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.780 total
time=
      5.8s
```

```
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.936 total
time=
      6.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-41.371 total
time=
       6.1s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-38.332 total
      0.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.795 total
      6.2s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.304 total
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-37.339 total
      0.7s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-36.549 total
time= 0.6s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.822 total
time=
      0.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.732 total
time=
      7.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-38.138 total
time=
      1.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.892 total
time=
      2.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-35.833 total
      2.0s
time=
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.240 total
time= 2.0s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.282 total
      2.0s
time=
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-37.952 total
time=
       2.6s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-36.752 total
time=
       2.3s
```

```
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-35.878 total
time=
       2.1s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.102 total
time=
       2.0s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.158 total
       2.0s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-37.808 total
      2.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.809 total
time= 14.9s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-36.765 total
      2.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-42.809 total
time= 14.3s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.253 total
time= 14.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.720 total
time=
      2.2s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      2.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      2.7s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-41.876 total
time= 14.8s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.710 total
time= 15.0s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-36.674 total
      6.3s
time=
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-37.773 total
time=
      7.0s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-35.897 total
time=
       6.7s
```

```
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-35.588 total
time=
      6.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-38.332 total
time=
      0.5s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-37.339 total
      0.5s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.304 total
      0.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.549 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.822 total
      0.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-36.091 total
time= 7.6s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-38.138 total
time=
      1.6s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.892 total
time=
      1.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-35.833 total
time= 1.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.240 total
time=
      2.0s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-36.282 total
time= 1.8s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-37.952 total
time= 2.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.752 total
time=
      2.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-35.878 total
time=
      1.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.102 total
```

1.8s

```
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.158 total
time=
      1.6s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-37.808 total
time=
       2.9s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-36.765 total
       2.4s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-36.726 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-35.565 total
time= 14.8s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-35.720 total
      2.5s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      2.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      3.0s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 14.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-37.773 total
time= 6.3s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-36.674 total
time= 6.2s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-35.588 total
      6.3s
time=
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-35.897 total
time=
      6.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-37.339 total
```

0.5s

```
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-38.332 total
time=
      0.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.549 total
time=
      0.5s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.304 total
      0.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.822 total
      0.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-38.138 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-36.091 total
time= 7.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.892 total
      1.7s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-35.833 total
time=
      2.1s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.240 total
time=
      1.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.282 total
time=
      2.2s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-37.952 total
time=
      2.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.752 total
time= 2.4s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-35.878 total
time=
      2.2s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-36.102 total
time=
      1.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.158 total
time=
      1.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-37.808 total
```

2.7s

```
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-36.765 total
time=
       2.2s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.2s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-36.726 total
time= 14.3s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-35.720 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-35.565 total
time= 14.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.958 total
      2.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.041 total
time= 14.6s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-35.934 total
time= 14.8s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-36.159 total
time=
      3.4s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.773 total
time=
      6.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.588 total
time=
      6.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-36.674 total
      6.6s
time=
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.897 total
time= 6.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-45.669 total
time=
      0.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.680 total
time=
      0.4s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.207 total
```

```
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.401 total
time=
      0.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.635 total
time=
      0.5s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.125 total
      1.4s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-36.091 total
      7.7s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-43.397 total
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.451 total
      1.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-42.880 total
      1.6s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.837 total
time=
      1.8s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-43.342 total
time=
      2.2s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-44.715 total
time=
      2.3s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.181 total
time=
      1.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-42.744 total
time= 1.7s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.606 total
time= 1.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-44.701 total
      2.9s
time=
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-43.492 total
time=
       2.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.219 total
time=
       2.1s
```

```
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.726 total
time= 14.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.565 total
time= 14.3s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-37.727 total
time= 14.8s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.573 total
      2.4s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.555 total
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 14.5s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.7s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-44.761 total
time=
      6.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.110 total
time=
      6.0s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.546 total
time= 6.0s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.378 total
time=
      6.1s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-46.926 total
time= 0.6s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-48.097 total
time= 0.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.776 total
time=
      0.5s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-44.783 total
time=
      0.5s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.853 total
```

0.7s

```
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.454 total
time=
      6.7s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-47.823 total
time=
       1.5s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-46.729 total
      1.7s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-44.719 total
      1.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.469 total
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.320 total
      1.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-47.627 total
      2.6s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-46.219 total
time=
      2.4s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-44.365 total
time=
      1.9s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.270 total
time=
      1.7s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.193 total
time= 1.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-47.519 total
time= 2.4s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-46.313 total
time= 2.2s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-44.471 total
      2.1s
time=
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.566 total
time= 14.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.004 total
time= 13.1s
```

```
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.484 total
time= 13.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-45.257 total
time=
       2.3s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.576 total
time= 13.3s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-45.252 total
       2.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.444 total
time= 13.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-46.221 total
      5.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-44.380 total
      5.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.246 total
time=
      5.6s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-47.390 total
time=
      5.8s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-46.926 total
time= 0.5s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-48.097 total
time=
      0.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-45.776 total
time= 0.4s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-44.783 total
time= 0.5s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.853 total
      0.6s
time=
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-47.823 total
time=
      1.5s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.035 total
```

7.0s

```
[CV 2/5] END max depth=20, max features=sqrt, min samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-46.729 total
time=
      1.7s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-44.719 total
time=
      1.7s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.469 total
      1.7s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.320 total
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-47.627 total
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-46.219 total
      2.1s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-44.365 total
      1.9s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.270 total
time=
      1.5s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.193 total
time=
      1.6s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-47.519 total
time=
      2.4s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-46.313 total
time=
      2.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-44.471 total
time= 2.0s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-47.281 total
time= 13.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 13.5s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-44.243 total
time= 13.3s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.257 total
time=
       2.6s
```

```
[CV 4/5] END max depth=20, max features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 12.4s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-45.252 total
time=
       2.9s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-45.039 total
time= 13.0s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-44.380 total
      5.6s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-46.221 total
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-47.390 total
      5.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-45.246 total
      5.7s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-46.926 total
time= 0.4s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-48.097 total
time=
      0.6s
[CV 4/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.776 total
time= 0.5s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-44.783 total
time=
      0.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.853 total
time= 0.7s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-47.823 total
time= 1.3s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-45.035 total
time=
      6.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-46.729 total
time=
      1.6s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-44.719 total
```

1.8s

```
[CV 4/5] END max depth=20, max features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-45.469 total
time=
      1.9s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-45.320 total
time=
       1.7s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-47.627 total
       2.1s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-46.219 total
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-44.365 total
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-45.270 total
      1.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-45.193 total
      1.7s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-47.519 total
time=
      2.5s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-47.281 total
time= 13.6s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-46.313 total
time=
      2.0s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 13.3s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-44.243 total
time= 13.2s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-44.471 total
time=
      2.2s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-45.257 total
      2.8s
time=
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-45.252 total
time=
       2.6s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 13.2s
```

```
[CV 4/5] END max depth=20, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 13.6s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-47.390 total
time=
       6.1s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-44.380 total
      6.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-46.221 total
      6.4s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-45.246 total
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-48.097 total
      0.5s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-46.926 total
time= 0.4s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.783 total
time=
      0.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.776 total
time=
      0.7s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.853 total
time= 0.6s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-47.823 total
time=
      1.2s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-45.035 total
time= 7.1s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-46.729 total
time= 1.6s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.469 total
      1.6s
time=
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-44.719 total
time=
      1.8s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.320 total
```

1.4s

```
[CV 2/5] END max depth=20, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-46.219 total
time=
      1.8s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-47.627 total
time=
       2.0s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-44.365 total
      1.7s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.270 total
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.193 total
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-47.519 total
      2.5s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-47.281 total
time= 13.7s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 13.2s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-46.313 total
time=
      2.1s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-44.471 total
time=
      2.0s
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 13.3s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-45.257 total
time= 2.9s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-45.252 total
time= 3.0s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 13.3s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 14.2s
[CV 1/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-47.390 total
time=
       6.3s
```

```
[CV 4/5] END max depth=20, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.246 total
time=
       6.5s
[CV 3/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-44.380 total
time=
       6.5s
[CV 2/5] END max depth=20, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-46.221 total
      6.8s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.514 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.153 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-25.895 total
      0.9s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-26.721 total
      0.9s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-26.093 total
time=
      1.3s
[CV 5/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.035 total
time=
      8.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.159 total
time=
      3.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.747 total
time=
      2.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-25.744 total
      2.7s
time=
[CV 4/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.360 total
time=
       2.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-25.829 total
       2.2s
time=
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.108 total
time=
       3.4s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-26.705 total
time=
       2.8s
```

```
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.705 total
time=
       2.4s
[CV 2/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-46.166 total
time= 15.4s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-26.305 total
      1.9s
[CV 1/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-47.281 total
time= 15.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.813 total
[CV 3/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 14.9s
[CV 4/5] END max_depth=20, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-45.213 total
time= 16.2s
[CV 5/5] END max depth=20, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 15.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.039 total
time=
      5.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-26.593 total
time= 4.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-26.294 total
time=
      4.8s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-25.589 total
time= 5.1s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-25.864 total
time= 5.1s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-26.958 total
time= 12.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-26.563 total
time= 11.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-26.201 total
time= 11.9s
```

```
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-25.652 total
time= 12.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-28.602 total
time=
      0.6s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-25.796 total
time= 12.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.986 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-26.870 total
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.382 total
      0.9s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-27.497 total
      1.0s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.308 total
time=
      2.7s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.620 total
time=
      2.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.151 total
time=
      2.3s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.099 total
time= 1.9s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-28.272 total
time= 2.6s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-26.706 total
time= 1.7s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-27.576 total
      2.5s
time=
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-26.677 total
time=
       3.1s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-26.552 total
time= 24.3s
```

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[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-26.951 total
time= 24.8s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-26.984 total
time=
       3.3s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-26.946 total
      3.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-25.631 total
time= 25.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.208 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-27.609 total
      4.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-26.727 total
time= 4.1s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.987 total
time=
      4.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.967 total
time=
      3.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-26.142 total
time= 22.9s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-25.776 total
time= 22.6s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.195 total
time= 7.1s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-27.574 total
time= 7.4s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.701 total
      8.0s
time=
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-26.956 total
time=
      9.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.478 total
time=
      1.7s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-30.611 total
time=
      1.3s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-30.856 total
time=
       0.9s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-30.741 total
      0.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-32.854 total
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-32.400 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.267 total
      1.8s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.612 total
      1.6s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.923 total
time= 12.6s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.537 total
time=
      1.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.897 total
time=
      1.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.266 total
time= 20.6s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-32.198 total
time= 2.2s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-27.571 total
time= 20.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.163 total
      1.9s
time=
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-30.513 total
time=
       2.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.570 total
time=
      1.7s
```

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[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.663 total
time=
      1.9s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.680 total
time= 21.0s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-31.104 total
      3.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.971 total
time= 21.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.119 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-30.464 total
      3.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.519 total
      3.4s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-30.415 total
time=
      3.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.846 total
time= 21.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.057 total
time= 8.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.045 total
time=
      8.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-30.346 total
time= 8.7s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.417 total
time= 8.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.342 total
time=
      9.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-40.935 total
time=
      0.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.467 total
time=
      0.5s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.291 total
time=
      0.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-38.861 total
time=
       0.5s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.007 total
      0.5s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-40.478 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-39.280 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.240 total
      1.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-38.779 total
time= 1.6s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.680 total
time=
      1.5s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-40.379 total
time=
      2.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-38.281 total
time=
      2.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.717 total
time=
      2.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-32.057 total
time= 19.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.469 total
time= 2.4s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.048 total
time= 19.5s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-40.317 total
time=
      4.3s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.315 total
time=
       3.7s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.074 total
time=
       3.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-39.359 total
time=
       2.0s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.482 total
      3.1s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.367 total
time= 17.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.346 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.282 total
      3.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-30.301 total
time= 18.6s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.294 total
time=
      8.1s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.173 total
time=
      8.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.292 total
time=
      8.9s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.034 total
time=
      9.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-31.173 total
time= 0.9s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.084 total
time= 0.9s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.385 total
      1.0s
time=
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.176 total
time=
      1.1s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      1.4s
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[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.181 total
time= 10.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-30.936 total
time=
       3.0s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.803 total
      3.0s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.057 total
      3.1s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.177 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.141 total
      2.5s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-30.675 total
      3.6s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.742 total
time=
      3.0s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.932 total
time=
      2.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.021 total
time=
      2.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.153 total
time=
      2.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-40.279 total
time= 20.4s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.173 total
time= 20.6s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.574 total
      3.8s
time=
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-37.961 total
time= 19.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.662 total
time=
       3.4s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.843 total
time=
       3.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-28.923 total
time=
       3.2s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-29.006 total
      3.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.144 total
time= 19.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.281 total
time= 19.9s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.573 total
      8.7s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-29.567 total
time= 9.1s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.761 total
time=
      9.1s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-31.173 total
time=
      0.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-28.946 total
time=
      9.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.901 total
time=
      9.9s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-30.084 total
time= 1.0s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.176 total
time= 0.8s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.385 total
      1.2s
time=
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      1.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.936 total
time=
       2.7s
```

```
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.803 total
time=
       2.5s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-29.057 total
time=
       2.6s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.177 total
       2.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.141 total
      2.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.675 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.742 total
      2.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-28.932 total
      2.4s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.021 total
time=
      2.1s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.153 total
time=
      2.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-30.574 total
time=
      3.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.795 total
time= 20.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-30.607 total
time= 20.8s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.662 total
time= 3.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-29.508 total
time= 20.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.843 total
time=
       2.9s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.933 total
```

time= 18.1s

```
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.923 total
time=
       3.4s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=500, oob score=True;, score=-29.006 total
time=
       3.5s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.942 total
time= 18.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-29.567 total
      8.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-30.573 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.761 total
      8.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-33.353 total
time= 0.5s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-32.354 total
time=
      0.5s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-31.489 total
time=
      0.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-28.901 total
time= 8.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.574 total
time=
      0.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-28.946 total
time= 9.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.902 total
time= 0.9s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.092 total
      2.5s
time=
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-32.095 total
time=
       2.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.295 total
```

```
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.314 total
time=
       2.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-31.531 total
time=
       2.5s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.012 total
      3.3s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.959 total
      3.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.177 total
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.281 total
      2.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.457 total
      2.6s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.032 total
time=
      3.8s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.866 total
time=
      3.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-30.607 total
time= 21.1s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-29.508 total
time= 20.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.104 total
time= 3.2s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.223 total
time= 3.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.320 total
time=
      3.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-28.942 total
time= 19.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.933 total
time= 19.7s
```

```
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.795 total
time= 19.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-31.834 total
time=
      7.8s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.914 total
      8.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.090 total
      8.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-41.075 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.549 total
      0.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-38.430 total
time= 0.8s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.110 total
time=
      9.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.072 total
time=
      1.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.214 total
time=
      9.5s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.147 total
time= 1.1s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-40.727 total
      2.2s
time=
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.264 total
time= 2.0s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.329 total
      2.1s
time=
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-38.837 total
time=
       2.3s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.786 total
```

2.1s

```
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-40.699 total
time=
       2.9s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-39.447 total
time=
        2.2s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.274 total
       2.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.843 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.629 total
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.580 total
      3.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-39.380 total
      2.6s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.808 total
time= 19.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.892 total
time= 19.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.051 total
time= 18.8s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.225 total
time=
      3.0s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-38.593 total
time= 3.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.457 total
time= 3.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.170 total
time= 17.9s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.101 total
time= 18.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.413 total
time=
      7.6s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.194 total
time=
      7.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-40.577 total
time=
      7.8s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-34.938 total
      0.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.526 total
      0.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.509 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.756 total
      0.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-32.998 total
time= 0.8s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.075 total
time=
      0.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.372 total
time=
      8.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-34.583 total
time=
      2.4s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.258 total
time=
      2.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-32.477 total
      2.5s
time=
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.729 total
time=
       2.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.763 total
       2.2s
time=
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-34.581 total
time=
       3.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.284 total
time=
       2.5s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.389 total
time=
       2.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.663 total
time=
       2.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.806 total
      1.8s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-34.517 total
      3.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.528 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.404 total
time= 17.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-38.090 total
time= 17.6s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.239 total
time=
      2.8s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.381 total
time=
      2.9s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.582 total
time=
      3.3s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.510 total
time= 16.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-32.744 total
time= 3.7s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.337 total
time= 17.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-34.448 total
      8.1s
time=
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-32.376 total
time=
      8.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.236 total
time=
      8.2s
```

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[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-34.938 total
time=
      0.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-33.526 total
time=
      0.6s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.472 total
      8.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.756 total
      0.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.998 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.075 total
      1.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-32.620 total
time= 8.5s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-34.583 total
time=
      1.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.477 total
time=
      1.8s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.258 total
time=
      2.0s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.729 total
time=
      3.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-32.763 total
      2.6s
time=
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-34.581 total
time= 3.4s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.284 total
time=
      2.5s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.389 total
time=
       2.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.663 total
```

2.9s

```
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.806 total
time=
       2.8s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-34.517 total
time=
       4.3s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-34.432 total
time= 19.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.239 total
      3.1s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-33.207 total
time= 19.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.303 total
time= 19.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-32.381 total
      3.1s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.582 total
time=
      3.3s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.744 total
time=
      3.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-32.510 total
time= 18.6s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.564 total
time= 18.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-33.236 total
time= 7.9s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-34.448 total
time= 8.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-32.376 total
      8.2s
time=
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-34.938 total
time=
      0.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-32.472 total
```

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[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.526 total
time=
      0.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-32.756 total
time=
      0.5s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-32.998 total
      0.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-33.075 total
      0.7s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-34.583 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.258 total
      2.1s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.620 total
      9.7s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.729 total
time=
      2.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.477 total
time=
      2.4s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.763 total
time=
      2.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-34.581 total
time=
      2.8s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-33.284 total
time= 2.9s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.389 total
time=
      2.8s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.663 total
time=
      2.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-32.806 total
time=
       2.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.517 total
```

3.5s

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[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-34.432 total
time= 18.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-33.207 total
time= 18.2s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.303 total
time= 18.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-33.239 total
      3.1s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.381 total
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.582 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.744 total
time= 3.0s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.510 total
time= 18.3s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.564 total
time= 18.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.236 total
time=
      7.9s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.448 total
time= 8.1s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-32.376 total
time= 8.2s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.472 total
time= 8.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.591 total
time=
      0.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.922 total
time=
      0.5s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.856 total
```

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[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.129 total
time=
      0.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.239 total
time=
       0.5s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-32.620 total
      9.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-41.199 total
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-39.707 total
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.631 total
      2.0s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-38.912 total
      2.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.018 total
time=
      2.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-41.052 total
time=
      3.4s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-39.881 total
time=
      2.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.663 total
time=
      2.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-38.990 total
time= 2.0s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.905 total
time=
      2.1s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.018 total
time=
      3.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-39.782 total
time=
       2.8s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.432 total
time= 19.1s
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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.562 total
time=
       2.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.303 total
time= 18.1s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-33.207 total
time= 18.3s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.971 total
       3.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.795 total
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.510 total
time= 17.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.564 total
time= 17.8s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.938 total
time=
      7.3s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.786 total
time=
      7.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.934 total
time=
      7.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.464 total
time=
      7.5s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-43.405 total
time= 0.5s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.976 total
time= 0.5s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-40.641 total
time=
      0.7s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.8s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.499 total
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[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.758 total
time=
      8.4s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-43.066 total
time=
       2.0s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.524 total
       2.2s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.416 total
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.900 total
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.153 total
      2.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-41.553 total
      2.7s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-43.075 total
time=
      3.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.396 total
time=
      2.9s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.061 total
time= 1.9s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.861 total
time= 1.9s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-42.881 total
time= 3.4s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-41.560 total
time= 2.8s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.274 total
      2.9s
time=
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.767 total
time= 17.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.912 total
time= 17.8s
```

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[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.455 total
time= 16.8s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-40.902 total
time=
       2.7s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-40.816 total
      3.4s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.902 total
time= 17.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.737 total
time= 17.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-42.875 total
time= 7.0s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.154 total
      6.9s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.741 total
time=
      7.2s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-41.536 total
time=
      7.3s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.976 total
time=
      0.5s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-43.405 total
time=
      0.6s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-40.641 total
time= 0.6s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.255 total
time= 0.6s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.499 total
      0.6s
time=
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.738 total
time=
      8.1s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-43.066 total
```

1.8s

```
[CV 2/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.524 total
time=
      1.9s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-40.416 total
time=
       2.0s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-40.900 total
      1.9s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.153 total
      2.0s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-43.075 total
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.553 total
      3.0s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-40.396 total
      2.5s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.861 total
time=
      1.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.061 total
time=
      2.0s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-42.881 total
time=
      3.6s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-41.560 total
time=
      2.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-40.274 total
time= 2.5s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 16.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 16.7s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.048 total
time= 15.9s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.902 total
time=
       2.7s
```

```
[CV 5/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.816 total
time=
       3.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.845 total
time= 16.5s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 16.8s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-41.536 total
      7.1s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-40.154 total
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-42.875 total
      7.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-40.741 total
time= 7.2s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-43.405 total
time= 0.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.976 total
time=
      0.5s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-40.641 total
time= 0.6s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.499 total
time= 0.7s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-43.066 total
time= 1.7s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.738 total
      8.4s
time=
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-41.524 total
time=
       2.2s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.900 total
time=
       2.1s
```

```
[CV 3/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.416 total
time=
       2.2s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-41.153 total
time=
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-43.075 total
       2.9s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.553 total
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-40.396 total
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-40.861 total
      1.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.061 total
      2.0s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-42.881 total
time=
      3.3s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-41.560 total
time=
      2.6s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.274 total
time=
      2.5s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 16.9s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-41.503 total
time= 16.7s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 16.5s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.902 total
      2.7s
time=
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.816 total
time=
       3.2s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.845 total
```

time= 16.1s

```
[CV 5/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 17.0s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-42.875 total
time=
      7.2s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-41.536 total
      7.1s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.154 total
      7.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.741 total
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.405 total
time= 0.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.976 total
time= 0.8s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-40.641 total
time= 0.6s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.255 total
time=
      0.6s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.499 total
time=
      0.6s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.738 total
time=
      8.3s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-43.066 total
time= 1.9s
[CV 2/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.524 total
time= 1.9s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-40.416 total
      2.1s
time=
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-40.900 total
time=
       2.0s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.153 total
```

2.2s

```
[CV 1/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-43.075 total
time=
       3.3s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.553 total
time=
        2.6s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.396 total
       2.8s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.861 total
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.061 total
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.881 total
      3.5s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-41.560 total
      2.8s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 17.6s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 17.4s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 16.6s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.274 total
time=
      3.0s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.902 total
      2.9s
time=
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.816 total
time= 3.2s
[CV 4/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.845 total
time= 16.9s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 17.1s
[CV 1/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.875 total
time=
      7.2s
```

```
[CV 2/5] END max depth=20, max features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.536 total
time=
      7.3s
[CV 3/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-40.154 total
time=
      7.4s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-40.741 total
      7.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.794 total
      0.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.857 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.554 total
      0.9s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.307 total
time= 0.7s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.081 total
time=
      0.8s
[CV 5/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.738 total
time=
      7.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.503 total
time=
      2.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.534 total
time=
      2.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-27.355 total
      2.5s
time=
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.826 total
time=
      2.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.743 total
      3.1s
time=
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.310 total
time=
      4.1s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.435 total
time=
       2.4s
```

```
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.202 total
time=
       2.2s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-27.696 total
time=
       2.4s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-27.473 total
       2.0s
[CV 2/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 17.2s
[CV 1/5] END max_depth=20, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 17.8s
[CV 3/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 17.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-28.336 total
      3.6s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.326 total
time=
      3.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.149 total
time=
      3.8s
[CV 5/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 16.8s
[CV 4/5] END max depth=20, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.845 total
time= 17.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-27.618 total
time= 3.8s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.568 total
time= 4.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.308 total
      8.9s
time=
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-28.196 total
time=
      9.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-27.147 total
time=
       9.7s
```

```
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.453 total
time=
      1.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.515 total
time= 10.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-30.175 total
      1.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.415 total
time= 10.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.174 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.585 total
      1.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-29.373 total
      1.2s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.472 total
time=
      2.6s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.836 total
time=
      2.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.954 total
time=
      2.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.020 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-28.955 total
      2.2s
time=
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.208 total
time= 3.0s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.725 total
time=
      2.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.767 total
time=
       2.4s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.886 total
time=
       2.3s
```

```
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.291 total
time= 20.4s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-28.765 total
time=
       2.6s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.190 total
time= 21.5s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-30.129 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.077 total
time= 21.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.665 total
      3.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-28.567 total
      2.6s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.869 total
time=
      2.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.806 total
time=
      2.7s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.440 total
time= 20.1s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-27.366 total
time= 19.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-30.086 total
time= 6.3s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-29.624 total
time= 6.4s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.849 total
      6.2s
time=
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.796 total
time=
      6.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.929 total
time=
      0.7s
```

```
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.191 total
time=
      0.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.409 total
time=
      0.6s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.498 total
      0.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.516 total
      7.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-34.879 total
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.672 total
      1.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.005 total
      2.2s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.168 total
time=
      1.7s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.154 total
time=
      1.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-35.474 total
time= 0.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-34.555 total
time=
      2.2s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.634 total
      2.2s
time=
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.801 total
time= 2.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-30.037 total
time= 16.9s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.085 total
time=
       2.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.195 total
time=
      1.7s
```

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[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.443 total
time=
      3.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.539 total
time= 16.8s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.651 total
       2.8s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.687 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.877 total
time= 16.7s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.037 total
      2.3s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.817 total
time= 17.0s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.067 total
time=
      3.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-29.619 total
time= 17.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.359 total
time=
      7.4s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.654 total
time=
      7.5s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-33.666 total
time= 7.7s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.899 total
time= 7.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.261 total
      0.5s
time=
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.027 total
time=
      8.1s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.218 total
time=
      0.6s
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[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.672 total
time=
      0.7s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-42.060 total
time=
      0.9s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-41.618 total
      0.6s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-42.772 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-43.581 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.282 total
      1.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.636 total
      1.6s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.363 total
time=
      1.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-43.416 total
time=
      1.8s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-42.368 total
time= 1.8s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.143 total
time= 1.9s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-41.170 total
time= 1.4s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.392 total
time= 16.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.660 total
time= 15.8s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.631 total
time= 15.4s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-43.389 total
time=
       2.7s
```

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[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.482 total
time=
      1.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-42.364 total
time=
       2.6s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-40.998 total
       2.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.484 total
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.391 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.929 total
time= 14.7s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-32.954 total
time= 14.4s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.285 total
time=
      6.9s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.376 total
time=
      6.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.967 total
time=
      6.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.558 total
time=
      0.5s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-33.112 total
time= 0.5s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.441 total
time= 7.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.835 total
      0.7s
time=
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.357 total
time=
      7.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.151 total
time=
      0.8s
```

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[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      1.1s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-33.377 total
time=
       2.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.678 total
       2.4s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.649 total
      3.1s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.982 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.824 total
      2.5s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-33.143 total
      2.5s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.430 total
time=
      1.9s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.545 total
time=
      2.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.743 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.861 total
time=
      2.1s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-43.207 total
time= 17.2s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.790 total
time= 17.0s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.365 total
time= 17.3s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.200 total
time=
       3.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.456 total
time=
       3.2s
```

```
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.303 total
time=
      3.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-31.753 total
time=
       3.1s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-31.801 total
      3.3s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.437 total
time= 16.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.323 total
time= 16.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.258 total
      7.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-32.430 total
time= 7.8s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-31.334 total
time=
      7.6s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.558 total
time=
      0.7s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.635 total
time= 8.0s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.112 total
time= 1.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-31.835 total
time= 1.0s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-31.756 total
time= 8.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.151 total
time=
      1.1s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      1.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.377 total
time=
       2.6s
```

```
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.678 total
time=
       2.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-31.649 total
time=
       2.4s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.824 total
      1.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.982 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.143 total
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.545 total
      1.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-31.430 total
      2.0s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.743 total
time=
      1.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.861 total
time=
      1.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-32.441 total
time= 16.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-33.202 total
time= 17.4s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-31.248 total
time= 17.0s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.200 total
time= 3.1s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.456 total
      2.8s
time=
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.303 total
time=
       3.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.753 total
time=
       2.9s
```

```
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.801 total
time=
      3.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-31.560 total
time= 17.1s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-31.689 total
time= 16.6s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.258 total
      7.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-32.430 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.334 total
      7.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-36.071 total
time= 0.4s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.635 total
time=
      8.0s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-35.561 total
time=
      0.8s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-34.595 total
time= 1.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.529 total
time=
      0.9s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-31.756 total
time= 8.8s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.594 total
time= 1.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.018 total
      2.0s
time=
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-35.149 total
time=
       2.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.163 total
```

1.9s

```
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.196 total
time=
       2.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-34.227 total
time=
       1.8s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-35.828 total
       2.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.008 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-33.978 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.959 total
      2.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-34.248 total
      1.8s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.773 total
time=
      2.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-33.202 total
time= 17.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-31.248 total
time= 16.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.441 total
time= 16.6s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-35.091 total
time= 2.3s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.040 total
time= 2.4s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.193 total
time=
      3.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-34.137 total
time=
      3.3s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.560 total
```

time= 16.1s

```
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.689 total
time= 16.6s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-35.817 total
time=
      7.0s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-35.038 total
      7.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.911 total
      7.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-44.631 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.050 total
time= 7.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-43.297 total
time= 0.7s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.999 total
time=
      0.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-42.516 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-42.619 total
time=
      0.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.178 total
time=
      7.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-44.240 total
time= 1.8s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.861 total
time= 1.8s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.813 total
      2.0s
time=
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-42.296 total
time=
       2.1s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.068 total
```

2.1s

```
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-43.907 total
time=
       2.5s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.651 total
time=
       2.5s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.574 total
       2.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.127 total
      2.4s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-41.754 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-43.865 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-35.750 total
time= 16.8s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.621 total
time=
      2.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.475 total
time=
      2.0s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.977 total
time= 16.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.890 total
time= 15.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.895 total
time= 2.4s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.089 total
time= 15.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.791 total
      3.0s
time=
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.196 total
time= 15.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.936 total
time=
      6.2s
```

```
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.371 total
time=
      6.1s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-42.780 total
time=
       6.7s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-41.795 total
      6.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-37.339 total
      0.4s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-38.332 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.549 total
      0.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-36.304 total
time= 0.7s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.732 total
time=
      7.4s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.822 total
time=
      0.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-38.138 total
time= 1.6s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.892 total
time=
      2.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-35.833 total
      2.4s
time=
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.240 total
time=
      2.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.282 total
      1.7s
time=
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-37.952 total
time=
       2.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-36.752 total
time=
       2.0s
```

```
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-35.878 total
time=
      1.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.102 total
time=
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.158 total
      1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-37.808 total
      2.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.809 total
time= 14.6s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.809 total
time= 14.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-41.253 total
time= 14.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-36.765 total
time=
      2.4s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.720 total
time=
      2.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      3.1s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      3.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-41.876 total
time= 14.9s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.710 total
time= 14.9s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-36.674 total
      6.4s
time=
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-37.773 total
time=
      6.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-35.588 total
time=
       6.4s
```

```
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-35.897 total
time=
      6.6s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-38.332 total
time=
      0.5s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-37.339 total
      0.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.304 total
      0.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.549 total
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.822 total
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-36.091 total
time= 7.6s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-38.138 total
time=
      1.8s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.892 total
time=
      1.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-35.833 total
time=
      2.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.240 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-36.282 total
      2.2s
time=
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-37.952 total
time=
      2.2s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.752 total
      2.0s
time=
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-35.878 total
time=
      1.9s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.102 total
```

1.9s

```
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.158 total
time=
      1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-37.808 total
time=
       2.9s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.765 total
      2.1s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-36.726 total
time= 15.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-35.720 total
      2.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-35.565 total
time= 15.0s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      2.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      3.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.9s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 15.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-37.773 total
time= 6.8s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-36.674 total
time= 6.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-35.897 total
      6.9s
time=
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-35.588 total
time=
      7.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-38.332 total
```

0.6s

```
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-37.339 total
time=
      0.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.549 total
time=
      0.5s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.304 total
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.822 total
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-36.091 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-38.138 total
      1.5s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.892 total
time= 1.6s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-35.833 total
time=
      2.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.240 total
time=
      2.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.282 total
time=
      2.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-37.952 total
time=
      2.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.752 total
      2.1s
time=
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-35.878 total
time= 1.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-36.102 total
      1.7s
time=
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.158 total
time=
      1.7s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-37.808 total
```

3.3s

```
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-36.765 total
time=
       2.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-35.720 total
time=
       2.1s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.2s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.726 total
time= 15.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-35.565 total
time= 15.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.958 total
      2.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.4s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      3.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.041 total
time= 14.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.588 total
time=
      6.4s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.773 total
time=
      6.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-36.674 total
      6.7s
time=
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.897 total
time= 7.1s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-45.669 total
      0.5s
time=
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.680 total
time=
      0.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.207 total
```

0.5s

```
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.401 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.635 total
time=
      0.7s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-36.091 total
      7.6s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-45.125 total
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-43.397 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.451 total
      1.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-42.880 total
      1.9s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.837 total
time=
      1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-44.715 total
time=
      2.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-43.342 total
time=
      2.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.181 total
time=
      2.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-42.744 total
time= 1.7s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.606 total
time= 1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-44.701 total
      2.9s
time=
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-43.492 total
time=
       2.1s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.219 total
```

2.0s

```
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-37.727 total
time= 14.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.565 total
time= 14.8s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-36.726 total
time= 15.0s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.573 total
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.555 total
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 14.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.7s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.378 total
time=
      6.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-44.761 total
time=
      6.3s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.546 total
time=
      6.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.110 total
time=
      6.4s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-48.097 total
time= 0.5s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-46.926 total
time= 0.4s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-44.783 total
      0.6s
time=
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.776 total
time=
      0.6s
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.853 total
```

0.6s

```
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.454 total
time=
      6.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-47.823 total
time=
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-46.729 total
      1.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-44.719 total
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.469 total
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.320 total
      1.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-47.627 total
      2.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-46.219 total
time=
      2.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-44.365 total
time=
      1.5s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.270 total
time=
      1.6s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.193 total
time= 1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-47.519 total
time= 3.2s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-46.313 total
time= 2.3s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-44.471 total
      2.1s
time=
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.566 total
time= 14.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.004 total
time= 13.7s
```

```
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.484 total
time= 13.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-45.257 total
time=
       2.9s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-45.252 total
      3.1s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.576 total
time= 14.0s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.444 total
time= 13.9s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-46.221 total
      5.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-44.380 total
      5.8s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-47.390 total
time=
      5.9s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-45.246 total
time=
      5.9s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-48.097 total
time= 0.6s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-46.926 total
time=
      0.5s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-44.783 total
time= 0.6s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.776 total
time= 0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.853 total
      0.6s
time=
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-47.823 total
time=
      1.3s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-46.729 total
time=
      1.6s
```

```
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.035 total
time=
      7.2s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-44.719 total
time=
      1.9s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.469 total
      1.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.320 total
      1.7s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-47.627 total
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-46.219 total
      1.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-44.365 total
      1.9s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.270 total
time=
      1.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.193 total
time=
      1.8s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-47.519 total
time=
      2.3s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-46.313 total
time=
      2.0s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-47.281 total
time= 13.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 12.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 12.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-44.471 total
time=
       2.5s
[CV 4/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.257 total
```

2.3s

```
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.252 total
time=
       2.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-45.039 total
time= 13.1s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 14.2s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-47.390 total
      5.7s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-46.221 total
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-44.380 total
      5.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-48.097 total
time= 0.4s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-46.926 total
time= 0.5s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-45.246 total
time=
      6.1s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-44.783 total
time= 0.5s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-45.776 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.853 total
time= 0.7s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-45.035 total
time= 6.8s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-47.823 total
      1.9s
time=
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-46.729 total
time=
      1.9s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-44.719 total
time=
      1.9s
```

```
[CV 4/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-45.469 total
time=
      1.8s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-45.320 total
time=
       1.7s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-47.627 total
       2.4s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-46.219 total
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-44.365 total
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-45.270 total
      1.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-45.193 total
      1.7s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-47.519 total
time=
      2.5s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-46.313 total
time=
      1.8s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-47.281 total
time= 13.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 13.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-44.243 total
time= 13.0s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-44.471 total
time= 2.4s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-45.257 total
      2.9s
time=
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-45.213 total
time= 13.3s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-45.252 total
time=
       3.0s
```

```
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 13.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-46.221 total
time=
       5.9s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-47.390 total
      6.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-44.380 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-48.097 total
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-46.926 total
      0.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-44.783 total
time= 0.4s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-45.246 total
time=
      6.7s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.853 total
time=
      0.4s
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.776 total
time=
      0.5s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-45.035 total
time=
      7.3s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-46.729 total
time= 1.7s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-47.823 total
time= 2.0s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-44.719 total
time=
      1.7s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-45.320 total
time=
      1.4s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-45.469 total
```

1.7s

```
[CV 1/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-47.627 total
time=
      1.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-46.219 total
time=
       1.6s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-44.365 total
      1.6s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.193 total
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.270 total
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-47.519 total
      2.7s
[CV 2/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-46.166 total
time= 13.2s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-47.281 total
time= 13.6s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 13.2s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-44.471 total
time=
      2.5s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-46.313 total
time=
      2.5s
[CV 5/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-45.252 total
      2.5s
time=
[CV 4/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-45.257 total
time=
      2.8s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 13.3s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 13.5s
[CV 1/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-47.390 total
time=
      5.7s
```

```
[CV 2/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-46.221 total
time=
      6.2s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-45.246 total
time=
       6.3s
[CV 3/5] END max depth=30, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-44.380 total
      6.5s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.537 total
      0.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.178 total
[CV 5/5] END max depth=30, max features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.035 total
time= 7.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-25.983 total
      1.4s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-26.624 total
time=
      1.5s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-26.093 total
time=
      1.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.164 total
time=
      2.8s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.797 total
time=
      2.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-25.796 total
      2.5s
time=
[CV 4/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.379 total
time= 1.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-25.836 total
      1.9s
time=
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.114 total
time=
       2.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-26.723 total
time=
       2.2s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.762 total
time=
      1.9s
[CV 1/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-47.281 total
time= 14.7s
[CV 2/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 14.7s
[CV 3/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 14.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-26.291 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.801 total
      2.6s
[CV 4/5] END max_depth=30, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-45.213 total
time= 15.2s
[CV 5/5] END max depth=30, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 15.6s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.052 total
time=
      5.3s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-26.606 total
time=
      5.1s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-26.274 total
time=
      4.9s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-25.635 total
time= 5.1s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-25.856 total
time= 5.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-26.969 total
time= 12.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-26.585 total
time= 11.9s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-25.659 total
time= 11.8s
```

```
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-25.793 total
time= 12.8s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-26.187 total
time= 13.1s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-28.602 total
      1.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.986 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-26.870 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.387 total
      1.1s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-27.496 total
      1.1s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.312 total
time=
      2.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.620 total
time=
      2.8s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-26.706 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.093 total
time= 1.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-28.273 total
time= 2.7s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-27.585 total
time=
      2.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.148 total
      1.9s
time=
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-26.952 total
time= 25.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-26.558 total
time= 25.6s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-26.677 total
time=
      3.0s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-26.984 total
time=
       3.0s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-26.941 total
       2.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-25.648 total
time= 26.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.211 total
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-27.614 total
      3.2s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-26.727 total
      2.9s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-26.153 total
time= 22.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.987 total
time=
      3.1s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.964 total
time=
      3.1s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-25.788 total
time= 21.8s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.198 total
time= 6.5s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.921 total
time= 7.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-27.574 total
time=
      8.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-32.854 total
time=
      0.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.478 total
time=
      0.5s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-30.611 total
time=
      0.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-30.866 total
time=
      0.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.697 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-30.741 total
      0.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-26.954 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.400 total
      1.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-31.267 total
time= 1.7s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-30.612 total
time=
      1.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.901 total
time=
      1.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.537 total
time=
      2.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.265 total
time= 17.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-32.198 total
time= 3.3s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.163 total
time= 3.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.513 total
time=
      3.0s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-30.666 total
time=
       3.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.570 total
time=
       3.0s
```

```
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.119 total
time=
      5.2s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.678 total
time= 20.5s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-31.104 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.464 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.521 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-26.844 total
time= 20.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.415 total
      3.5s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-27.570 total
time= 20.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.057 total
time=
      8.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.045 total
time= 8.1s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-26.971 total
time= 21.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-30.346 total
time= 8.0s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-40.935 total
time= 0.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.418 total
      7.6s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-39.467 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.342 total
time=
      7.6s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.291 total
time=
      0.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-38.861 total
time=
       0.8s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.007 total
      0.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-40.478 total
      2.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-39.280 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.240 total
      2.2s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-38.779 total
      2.2s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.680 total
time=
      2.4s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-40.379 total
time=
      3.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-39.359 total
time=
      3.5s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.281 total
time=
      3.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-38.717 total
time= 3.6s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.469 total
time= 3.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.317 total
time=
      4.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-39.315 total
time=
      4.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.074 total
```

3.2s

```
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.048 total
time= 19.3s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.482 total
time=
       2.2s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.301 total
time= 18.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.282 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.368 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.346 total
time= 19.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-32.057 total
time= 20.5s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.294 total
time=
      7.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.034 total
time=
      7.6s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.173 total
time=
      7.8s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.173 total
time=
      0.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=1000, oob score=True;, score=-38.292 total
time= 8.2s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.084 total
time= 0.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.181 total
      8.6s
time=
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.176 total
time=
      1.0s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.385 total
time=
      1.0s
```

```
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      0.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-30.936 total
time=
       2.5s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.803 total
       2.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.057 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.177 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.141 total
      2.4s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-30.675 total
      3.5s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.742 total
time=
      2.8s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.932 total
time=
      2.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.021 total
time=
       2.3s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.153 total
time=
      2.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-40.279 total
time= 19.1s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.173 total
time= 18.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.574 total
      3.5s
time=
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-37.961 total
time= 18.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.662 total
time=
       3.3s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.843 total
time=
      3.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-38.281 total
time= 17.1s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.923 total
      3.5s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.006 total
       3.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.144 total
time= 17.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.573 total
      8.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-29.567 total
      9.0s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.761 total
time=
      9.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-31.173 total
time=
      0.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-28.901 total
time=
      9.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.084 total
time=
      0.8s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=100, oob score=True;, score=-29.176 total
time= 1.0s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.946 total
time= 9.4s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.385 total
      0.9s
time=
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      1.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.803 total
time=
       2.6s
```

```
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.936 total
time=
       3.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=200, oob score=True;, score=-29.057 total
time=
       2.8s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.177 total
       2.7s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.141 total
       2.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.675 total
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.742 total
      2.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=300, oob score=True;, score=-28.932 total
      2.7s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.021 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.153 total
time=
      2.4s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-30.607 total
time= 21.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-30.574 total
time= 3.8s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-29.508 total
time= 21.0s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.662 total
time= 3.3s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.795 total
time= 20.5s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.843 total
time=
      3.2s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.923 total
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[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.006 total
time=
      3.8s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-28.933 total
time= 19.7s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.942 total
time= 19.4s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-30.573 total
      8.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-29.567 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.761 total
      9.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-33.353 total
time= 0.7s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.901 total
time=
      9.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-32.354 total
time=
      0.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-31.489 total
time= 0.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.574 total
time=
      0.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-31.902 total
time= 1.0s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.946 total
time= 10.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.092 total
      2.6s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-32.095 total
time=
       2.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.295 total
```

```
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.314 total
time=
       2.4s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-31.531 total
time=
        2.4s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.012 total
      3.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.959 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.177 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.281 total
      2.0s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.457 total
      2.6s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.032 total
time=
      3.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-30.607 total
time= 20.3s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-29.508 total
time= 20.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.866 total
time=
      3.2s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-28.795 total
time= 20.4s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.104 total
time= 3.0s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.223 total
time=
      3.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.320 total
time=
       3.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.933 total
```

time= 19.3s

```
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.942 total
time= 19.5s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-32.914 total
time=
       9.0s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.090 total
      9.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.834 total
      9.3s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.110 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.075 total
      0.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.549 total
time= 0.7s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.430 total
time=
      0.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.072 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.147 total
time=
      0.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.214 total
time=
      9.8s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-40.727 total
time= 2.4s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.329 total
time= 2.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.264 total
time=
       2.3s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-38.837 total
time=
       2.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.786 total
```

2.4s

```
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-40.699 total
time=
       3.3s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-39.447 total
time=
        2.6s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.274 total
       2.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.843 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.629 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.580 total
      3.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-39.380 total
      3.2s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.892 total
time= 20.3s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.808 total
time= 20.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.051 total
time= 19.4s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.225 total
time=
      2.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-38.593 total
time= 3.0s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.457 total
time= 3.4s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.101 total
time= 18.5s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.170 total
time= 18.8s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.577 total
```

```
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.413 total
time=
      7.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-38.509 total
time=
      7.4s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.194 total
      7.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.526 total
      0.5s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-34.938 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.998 total
      0.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-32.756 total
time= 0.8s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.075 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.372 total
time=
      8.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-34.583 total
time=
      2.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.258 total
time=
      2.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-32.477 total
      2.2s
time=
[CV 4/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.729 total
time=
      2.4s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.763 total
       2.2s
time=
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-34.581 total
time=
       3.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.284 total
time=
       3.1s
```

```
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.389 total
time=
       2.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.663 total
time=
       2.5s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.806 total
       2.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-34.517 total
      3.7s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.528 total
time= 18.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.239 total
      2.8s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-39.404 total
time= 17.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.090 total
time= 17.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.381 total
time=
      2.8s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.582 total
time=
      3.4s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.744 total
time=
      3.4s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-38.510 total
time= 17.5s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.337 total
time= 17.4s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-34.448 total
      8.2s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-33.236 total
time=
      8.4s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.376 total
time=
       8.3s
```

```
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.472 total
time=
      8.6s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-34.938 total
time=
       0.7s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=5,
min samples split=5, n estimators=100, oob score=True;, score=-33.526 total
      0.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.756 total
      0.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.998 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.075 total
      0.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-32.620 total
      8.7s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-34.583 total
time=
      2.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.258 total
time=
      2.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.477 total
time=
      2.2s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.729 total
time=
      2.3s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=200, oob score=True;, score=-32.763 total
      2.2s
time=
[CV 1/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-34.581 total
time= 3.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.284 total
      2.7s
time=
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.389 total
time=
       2.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.663 total
```

2.0s

```
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.806 total
time=
       2.0s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-34.517 total
time=
[CV 2/5] END max depth=30, max features=log2, min samples leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-33.239 total
       2.8s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-33.207 total
time= 18.8s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-34.432 total
time= 19.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.303 total
time= 18.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-32.381 total
      3.0s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.582 total
time=
      3.5s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.744 total
time=
      3.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-32.510 total
time= 17.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.564 total
time= 17.9s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.376 total
time= 7.9s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-34.448 total
time= 8.4s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-33.236 total
      8.4s
time=
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.472 total
time=
      8.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.938 total
```

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[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.526 total
time=
      0.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-32.998 total
time=
       0.6s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-32.756 total
      0.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-33.075 total
      0.8s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.620 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.583 total
      2.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-33.258 total
      2.3s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.477 total
time=
      2.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.729 total
time=
      2.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.763 total
time=
      2.3s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-33.284 total
time=
      3.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-34.581 total
time= 3.2s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.389 total
time=
      2.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.806 total
      2.2s
time=
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-32.663 total
time=
       2.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.517 total
```

```
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-34.432 total
time= 18.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-33.207 total
time= 18.6s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.239 total
       2.8s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.381 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.303 total
time= 18.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.582 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.744 total
time= 3.8s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.510 total
time= 18.4s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.564 total
time= 18.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.448 total
time=
      7.9s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.236 total
time= 8.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-32.376 total
time= 8.0s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.472 total
time= 8.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.591 total
      0.8s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.922 total
time=
      0.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.856 total
```

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[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.129 total
time=
      0.7s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.239 total
time=
       0.7s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.620 total
      8.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-41.199 total
      2.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-39.707 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.631 total
      1.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-38.912 total
      2.3s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.018 total
time=
      2.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-41.052 total
time=
      3.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-39.881 total
time=
      3.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.663 total
time=
      2.8s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-38.990 total
      2.1s
time=
[CV 5/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.905 total
time= 2.0s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.018 total
       3.7s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-39.782 total
time=
       2.9s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.562 total
```

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[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.207 total
time= 18.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-34.432 total
time= 18.6s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.303 total
time= 18.2s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.971 total
       3.2s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.795 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.510 total
time= 18.3s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.564 total
time= 18.3s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.938 total
time=
      7.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.786 total
      7.3s[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.464 total
time=
      7.2s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.934 total
time=
      7.5s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-43.405 total
time= 0.6s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.976 total
time= 0.6s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-40.641 total
      0.6s
time=
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.8s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.499 total
```

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[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.758 total
time=
      7.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-43.066 total
time=
       1.7s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.524 total
       2.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.416 total
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.900 total
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.153 total
      2.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-43.075 total
      3.5s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.553 total
time=
      3.2s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.396 total
time=
      3.0s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.861 total
time=
       2.3s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.061 total
time=
      1.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-42.881 total
time= 3.2s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-41.560 total
time=
      2.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.274 total
      2.6s
time=
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.912 total
time= 17.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.767 total
time= 16.7s
```

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[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.455 total
time= 16.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-40.902 total
       2.9s
time=
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-40.816 total
       2.9s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.902 total
time= 16.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.737 total
time= 17.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-41.536 total
      6.9s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-42.875 total
time= 7.3s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.154 total
time= 7.1s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-43.405 total
time=
      0.5s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.741 total
time=
      7.4s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-40.641 total
time=
      0.5s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=100, oob score=True;, score=-41.976 total
time= 0.8s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.255 total
time= 0.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.499 total
      0.6s
time=
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=2, n estimators=1000, oob score=True;, score=-40.738 total
time=
      8.2s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-43.066 total
```

2.1s

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[CV 2/5] END max depth=30, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.524 total
time=
       2.0s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=200, oob score=True;, score=-40.416 total
time=
       2.0s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-40.900 total
       2.1s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.153 total
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-43.075 total
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.553 total
      2.5s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=300, oob score=True;, score=-40.396 total
      2.4s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.861 total
time=
      1.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.061 total
time=
      1.9s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-42.881 total
time=
      3.3s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 17.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=500, oob score=True;, score=-41.560 total
time= 2.6s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.274 total
time= 2.6s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 16.8s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.048 total
time= 16.6s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.902 total
time=
       2.9s
```

```
[CV 5/5] END max depth=30, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.816 total
time=
      3.0s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.845 total
time= 16.1s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 16.2s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-42.875 total
      7.2s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-40.154 total
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.741 total
time= 7.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-41.536 total
time= 7.5s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-43.405 total
time= 0.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.976 total
time=
      0.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-40.641 total
time= 0.6s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.6s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-41.499 total
time= 0.7s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-43.066 total
time= 1.5s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.738 total
      8.3s
time=
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-41.524 total
time=
       2.3s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.416 total
```

2.1s

```
[CV 4/5] END max depth=30, max features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.900 total
time=
       2.1s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-41.153 total
time=
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-43.075 total
       2.6s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.553 total
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-40.396 total
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-40.861 total
      1.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-41.061 total
      1.9s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-42.881 total
time=
      3.1s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-41.560 total
time=
      2.6s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.274 total
time=
      2.6s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 17.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-41.503 total
time= 16.9s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 16.5s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.902 total
      3.1s
time=
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-40.816 total
time=
      3.4s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.845 total
time= 16.3s
```

```
[CV 5/5] END max depth=30, max features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 16.6s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-42.875 total
time=
      7.0s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-40.741 total
      7.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-41.536 total
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.154 total
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.405 total
time= 0.6s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.976 total
time= 0.7s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.5s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-40.641 total
time=
      0.7s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.499 total
time= 0.5s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-43.066 total
time= 1.8s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-41.524 total
time= 1.9s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.738 total
time= 8.7s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-40.416 total
      2.0s
time=
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-40.900 total
time=
       2.4s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.153 total
```

2.3s

```
[CV 1/5] END max depth=30, max features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-43.075 total
time=
      3.0s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.553 total
time=
       2.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.396 total
       2.4s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.861 total
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.061 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.881 total
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-42.920 total
time= 16.6s
[CV 2/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.560 total
time=
      2.7s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 16.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 16.3s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.274 total
time=
      2.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.902 total
time= 3.4s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.816 total
time= 3.7s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.845 total
time= 16.9s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.649 total
time= 16.9s
[CV 1/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.875 total
time=
      7.9s
```

```
[CV 2/5] END max depth=30, max features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.536 total
time=
      8.1s
[CV 3/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-40.154 total
time=
       8.1s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.794 total
      0.6s
[CV 4/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.741 total
      8.9s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.857 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.554 total
      0.7s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-28.307 total
time= 0.8s
[CV 5/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.738 total
time=
      8.2s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-28.081 total
time=
      1.0s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.534 total
time=
       2.4s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-28.503 total
time=
      2.8s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-27.355 total
      2.6s
time=
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.826 total
time=
      2.4s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.743 total
       2.3s
time=
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.310 total
time=
       3.3s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.202 total
```

2.2s

```
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.435 total
time=
       2.4s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-27.696 total
       2.2s
time=
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-27.473 total
       2.2s
[CV 2/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 17.3s
[CV 1/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.920 total
time= 17.5s
[CV 3/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 17.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-28.336 total
      3.8s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.326 total
time=
      3.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.149 total
time=
      3.9s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.568 total
time=
      3.9s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.618 total
time=
      4.0s
[CV 5/5] END max_depth=30, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-40.649 total
time= 16.6s
[CV 4/5] END max depth=30, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.845 total
time= 16.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.308 total
      9.6s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-28.196 total
time=
      9.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-27.147 total
time=
       9.8s
```

```
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.453 total
time=
      0.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-30.175 total
time=
      0.9s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.515 total
time= 10.5s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.174 total
      0.9s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.585 total
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.373 total
      1.2s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-27.415 total
time= 11.9s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.472 total
time=
      3.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.836 total
time=
      2.7s
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.954 total
time=
      2.8s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.020 total
time=
      2.1s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-28.955 total
      2.0s
time=
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.208 total
time= 2.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.725 total
      2.3s
time=
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.767 total
time=
       2.3s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.886 total
time=
       2.3s
```

```
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.765 total
time=
       2.5s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.077 total
time= 21.9s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-28.190 total
time= 22.4s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-28.291 total
time= 22.5s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-30.129 total
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.665 total
      4.3s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-28.567 total
      3.6s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.869 total
time=
      3.0s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.806 total
time=
      2.9s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-27.440 total
time= 21.1s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-27.366 total
time= 22.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-30.086 total
time= 8.1s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-29.624 total
time= 7.4s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.516 total
      7.4s
time=
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.796 total
time=
      7.1s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.849 total
```

7.2s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-35.474 total
time=
      0.4s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.929 total
time=
      0.7s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.191 total
      0.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.409 total
      0.7s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-33.498 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.005 total
      2.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.672 total
      2.1s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.168 total
time=
      1.9s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-33.154 total
time=
      1.9s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-34.555 total
time=
      2.7s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.634 total
time=
      2.8s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-34.879 total
      2.2s
time=
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.801 total
time=
      2.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.085 total
      2.4s
time=
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-33.195 total
time=
      1.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-30.037 total
time= 18.3s
```

```
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-34.443 total
time=
       2.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-33.651 total
time=
       2.4s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.539 total
time= 16.1s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.687 total
      2.6s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-33.037 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.877 total
time= 16.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-28.817 total
time= 16.4s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.067 total
time=
      2.7s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-29.619 total
time= 16.9s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.359 total
time=
      7.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.654 total
time=
      7.6s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=1000, oob score=True;, score=-33.666 total
time= 7.8s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.261 total
time= 0.4s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.218 total
      0.7s
time=
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.899 total
time=
      8.3s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.027 total
time=
       8.4s
```

```
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-41.672 total
time=
      0.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-41.618 total
time=
      0.8s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-42.060 total
      1.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-43.581 total
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.282 total
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.772 total
      2.0s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-41.636 total
time= 1.7s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.363 total
time=
      1.3s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-43.416 total
time=
      2.1s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-42.368 total
time= 1.7s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-41.143 total
time=
      1.7s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-41.482 total
time= 1.8s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-41.170 total
time= 1.8s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-43.389 total
      3.0s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.660 total
time= 16.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.392 total
time= 17.0s
```

```
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.631 total
time= 17.2s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-42.364 total
time=
       3.0s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-40.998 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.484 total
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-41.391 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.929 total
time= 15.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-32.954 total
time= 15.8s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.285 total
time=
      6.4s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.376 total
time=
      6.5s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.441 total
time=
      6.2s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.967 total
time=
      6.7s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-33.112 total
time= 0.6s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.558 total
time= 0.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-31.835 total
      0.7s
time=
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.151 total
time=
      0.8s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.357 total
time=
       6.8s
```

```
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      0.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-33.377 total
time=
       2.2s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-32.678 total
       2.1s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.649 total
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.824 total
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-31.982 total
      2.0s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-33.143 total
      2.6s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.545 total
time=
      2.3s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.430 total
time=
      2.2s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.743 total
time=
       2.0s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-31.861 total
time= 1.6s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-43.207 total
time= 14.9s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.365 total
time= 14.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.200 total
      2.7s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.456 total
time=
       2.7s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.303 total
```

2.6s

```
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.790 total
time= 14.4s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-31.753 total
time=
       2.4s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-41.437 total
time= 14.6s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-31.801 total
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.323 total
time= 14.4s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.258 total
      7.7s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-32.430 total
time= 7.6s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-31.635 total
time=
      7.8s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.334 total
time=
      8.0s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.558 total
time= 0.6s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.112 total
time=
      0.5s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-31.756 total
time= 8.6s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.151 total
time= 0.8s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-31.835 total
      0.9s
time=
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.271 total
time=
      1.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.678 total
```

2.6s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.377 total time= 2.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.649 total time= 2.6s
```

- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.824 total time= 1.5s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-31.982 total time= 1.6s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.143 total time= 2.2s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.430 total time= 1.9s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.545 total time= 2.0s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.743 total time= 1.9s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-31.861 total time= 2.0s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-33.202 total time= 17.0s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.441 total time= 17.3s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.200 total time= 3.4s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-31.248 total time= 17.3s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.456 total time= 3.3s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.303 total time= 3.1s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.753 total time= 3.3s

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[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-31.801 total
time=
      3.1s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-31.560 total
time= 16.8s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-31.689 total
time= 17.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-32.430 total
      7.1s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-33.258 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-31.334 total
      7.3s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-31.635 total
time= 7.3s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-35.561 total
time= 0.6s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-36.071 total
time=
      0.8s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-34.529 total
time=
      0.7s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.595 total
time=
      0.9s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-31.756 total
time= 7.8s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.594 total
time= 1.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.018 total
      3.5s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-35.149 total
time=
       3.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.163 total
```

3.2s

```
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-34.196 total
time=
       2.3s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-34.227 total
time=
       2.3s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.828 total
      3.2s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-35.008 total
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-33.978 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-33.959 total
      2.0s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-34.248 total
      1.8s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.773 total
time=
      2.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-35.091 total
time=
      2.3s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-33.202 total
time= 19.0s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-32.441 total
time= 18.0s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-34.040 total
time= 2.4s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-31.248 total
time= 17.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.137 total
      2.8s
time=
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-31.560 total
time= 17.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-34.193 total
```

3.1s

```
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-31.689 total
time= 17.6s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-35.817 total
time=
      7.0s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-33.911 total
      7.1s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.050 total
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.038 total
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.631 total
      0.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-43.297 total
time= 0.6s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.999 total
time= 0.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-42.516 total
time=
      0.5s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-42.619 total
time=
      0.4s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.178 total
time=
      8.2s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-44.240 total
time= 2.1s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.861 total
time=
      2.2s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.813 total
      1.9s
time=
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-42.296 total
time=
       2.0s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.068 total
```

1.8s

```
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-43.907 total
time=
       2.3s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.651 total
time=
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-41.574 total
      1.9s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-42.127 total
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-41.754 total
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-43.865 total
      3.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-42.621 total
      2.3s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.977 total
time= 16.2s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-35.750 total
time= 16.4s
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.890 total
time= 16.1s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.475 total
time=
      2.5s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-41.895 total
      2.6s
time=
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.791 total
time= 3.0s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.089 total
time= 15.4s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.196 total
time= 15.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.780 total
```

6.1s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.936 total
time=
      6.4s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-41.371 total
time=
       6.7s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-41.795 total
      6.4s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-37.339 total
      0.5s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-38.332 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.304 total
      0.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-36.549 total
time= 0.6s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-36.822 total
time=
      0.5s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.732 total
time=
      6.9s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-38.138 total
time= 1.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.892 total
time=
      2.0s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-35.833 total
time= 1.9s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.240 total
time= 1.9s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-36.282 total
      1.9s
time=
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-37.952 total
time=
       2.8s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-36.752 total
```

2.4s

```
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-35.878 total
time=
       2.2s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.102 total
       1.8s
time=
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-36.158 total
      1.7s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-37.808 total
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.809 total
time= 14.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-36.765 total
      2.1s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-42.809 total
time= 14.6s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.253 total
time= 13.7s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.720 total
time=
      2.3s
[CV 4/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      2.9s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.876 total
time= 14.2s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-36.159 total
time= 3.2s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.710 total
time= 14.4s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-37.773 total
      7.0s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-36.674 total
time=
      6.8s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-35.588 total
```

7.2s

```
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-35.897 total time= 7.2s
```

[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-38.332 total time= 0.6s

[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-37.339 total time= 0.6s

[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.304 total time= 0.7s

[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.549 total time= 0.6s

[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-36.822 total time= 0.7s

[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-38.138 total time= 1.7s

[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-36.091 total time= 8.2s

[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.892 total time= 1.9s

[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.240 total time= 1.9s

[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-35.833 total time= 2.2s

[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-36.282 total time= 1.8s

[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-37.952 total time= 1.9s

[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.752 total time= 1.8s

[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-35.878 total time= 2.0s

[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.102 total time= 1.9s

```
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-36.158 total
time=
      1.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-37.808 total
time=
       2.8s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.7s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-35.565 total
time= 15.4s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-36.726 total
time= 15.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.765 total
      2.3s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-35.720 total
      2.6s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-35.958 total
time=
      3.0s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-36.159 total
time=
      3.1s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-36.041 total
time= 14.9s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-35.934 total
time= 15.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-37.773 total
time= 6.6s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-36.674 total
time= 6.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-35.588 total
      6.8s
time=
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-38.332 total
time=
      0.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
```

min_samples_split=5, n_estimators=1000, oob_score=True;, score=-35.897 total

time=

7.0s

```
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.304 total
time=
      0.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-37.339 total
time=
      0.7s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.549 total
      0.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-36.822 total
      0.6s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-36.091 total
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-38.138 total
      1.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.892 total
      2.0s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-36.240 total
time=
      1.9s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-35.833 total
time=
      2.1s
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-36.282 total
time=
      2.2s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-37.952 total
time=
      2.3s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.752 total
      2.1s
time=
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-35.878 total
time= 1.9s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-36.102 total
      1.8s
time=
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-36.158 total
time=
      1.8s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-37.808 total
```

2.9s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-37.727 total
time= 15.4s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-36.726 total
time= 15.2s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-36.765 total
       2.2s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-35.565 total
time= 15.3s
[CV 3/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-35.720 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-35.958 total
      2.7s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-35.934 total
time= 14.7s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 14.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-36.159 total
time=
      3.1s
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-37.773 total
time=
      7.0s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-35.588 total
time=
      6.9s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-35.897 total
time= 6.9s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-36.674 total
time= 7.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-43.680 total
      0.5s
time=
[CV 1/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-45.669 total
time=
      0.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-42.207 total
```

0.5s

```
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.401 total
time=
      0.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-43.635 total
       0.6s
time=
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-36.091 total
      7.7s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-45.125 total
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-43.397 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.451 total
      1.8s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-42.880 total
      2.1s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-42.837 total
time=
      1.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-44.715 total
time=
      2.3s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-43.342 total
time=
      2.0s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.181 total
time=
      1.8s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-42.744 total
time= 1.6s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-42.606 total
time= 1.8s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-44.701 total
      3.0s
time=
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-43.492 total
time=
       2.3s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.726 total
time= 15.3s
```

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-37.727 total
time= 15.5s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.565 total
time= 15.3s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.219 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.573 total
[CV 5/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-42.555 total
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-36.041 total
time= 14.7s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-35.934 total
time= 15.1s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-44.761 total
time=
      6.0s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.110 total
time=
      6.0s
[CV 2/5] END max_depth=None, max features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-43.378 total
time=
      6.3s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.546 total
time=
      6.2s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-48.097 total
time= 0.5s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-46.926 total
time= 0.4s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-44.783 total
      0.5s
time=
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.776 total
time=
      0.6s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-45.853 total
```

0.7s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-47.823 total
time=
      1.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=200, oob score=True;, score=-46.729 total
time=
       1.7s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=5,
min samples split=20, n estimators=1000, oob score=True;, score=-42.454 total
      8.1s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-44.719 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.469 total
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-45.320 total
      1.9s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=300, oob score=True;, score=-47.627 total
      2.6s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-46.219 total
time=
      2.1s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-44.365 total
time=
      2.1s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.270 total
time=
      1.6s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-45.193 total
time=
      1.7s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=500, oob score=True;, score=-47.519 total
time= 2.6s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-46.313 total
time= 2.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.566 total
time= 14.7s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-44.471 total
time=
      1.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-43.484 total
```

time= 13.9s

```
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.004 total time= 13.8s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-45.257 total time= 2.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.576 total time= 14.3s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
```

- min_samples_split=2, n_estimators=500, oob_score=True;, score=-45.252 total time= 3.1s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.444 total time= 14.5s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-47.390 total time= 6.1s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-44.380 total time= 6.1s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-46.221 total time= 6.5s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.246 total time= 6.5s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-48.097 total time= 0.5s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-46.926 total time= 0.4s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-44.783 total time= 0.6s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.776 total time= 0.6s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-45.853 total time= 0.9s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-47.823 total time= 1.8s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-45.035 total time= 7.9s

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[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-46.729 total time= 2.3s
```

- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.469 total time= 1.8s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-44.719 total time= 2.1s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-45.320 total time= -0.4s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-47.627 total time= -0.0s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-46.219 total time= 0.1s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-44.365 total time= 1.8s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.270 total time= 1.6s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-45.193 total time= 1.6s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-47.519 total time= 2.5s
- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-47.281 total time= 12.5s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-46.166 total time= 12.4s
- [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-46.313 total time= 2.5s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-44.243 total time= 12.5s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-44.471 total time= 2.4s
- [CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.257 total time= 2.9s

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[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-45.252 total
time=
      3.0s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-45.213 total
time= 12.5s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-45.039 total
time= 13.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-47.390 total
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-46.221 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-44.380 total
      6.0s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-45.246 total
time= 6.0s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-48.097 total
time=
      0.6s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-46.926 total
time=
      0.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-44.783 total
time= 0.6s
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.776 total
time=
      0.6s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=100, oob score=True;, score=-45.853 total
time= 0.5s
```

- [CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-47.823 total
- time= 1.3s

 [CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,

 min_samples_sqlit=10, n_ostimators=200, och_score=True: gcore=-46,729 total
- min_samples_split=10, n_estimators=200, oob_score=True;, score=-46.729 total time= 1.7s
- [CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-45.035 total time= 8.1s
- [CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-44.719 total time= 2.0s

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[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-45.469 total
time=
       2.2s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=200, oob score=True;, score=-45.320 total
time=
        2.2s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-47.627 total
       2.3s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-46.219 total
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-44.365 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-45.270 total
      1.5s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=300, oob score=True;, score=-45.193 total
      1.6s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-47.519 total
time=
      2.3s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=500, oob score=True;, score=-46.313 total
time=
      2.1s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-47.281 total
time= 14.3s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 14.1s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-44.243 total
time= 13.3s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-44.471 total
time= 2.2s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-45.257 total
      2.9s
time=
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-45.213 total
time= 13.6s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
```

min samples split=10, n estimators=500, oob score=True;, score=-45.252 total

time=

3.1s

```
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-45.039 total
time= 14.2s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-46.221 total
time=
      8.1s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-44.380 total
      8.3s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-47.390 total
      8.4s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-48.097 total
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-45.246 total
      9.0s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-46.926 total
time= 0.6s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-44.783 total
time=
      0.5s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.776 total
time=
      0.5s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-45.853 total
time=
      0.5s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-47.823 total
time= 1.7s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-45.035 total
time= 10.0s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-46.729 total
time= 1.9s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-44.719 total
      2.1s
time=
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-45.469 total
time=
      1.8s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
```

min samples split=20, n estimators=200, oob score=True;, score=-45.320 total

time=

2.0s

```
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-47.627 total
time=
      1.9s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-46.219 total
time=
       1.8s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-44.365 total
      1.8s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.270 total
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-45.193 total
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-47.519 total
      2.7s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-47.281 total
time= 16.6s
[CV 2/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 16.6s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 16.1s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-46.313 total
time=
       2.5s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-44.471 total
time=
      2.4s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-45.252 total
      2.4s
time=
[CV 4/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-45.257 total
time=
      2.6s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.213 total
time= 14.5s
[CV 5/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 14.8s
[CV 1/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
```

min_samples_split=20, n_estimators=1000, oob_score=True;, score=-47.390 total

time=

6.2s

```
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-46.221 total
time=
      6.4s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-45.246 total
time=
       6.0s
[CV 3/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=1000, oob score=True;, score=-44.380 total
      6.1s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.178 total
      0.7s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-27.537 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-25.983 total
      0.8s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=100, oob score=True;, score=-26.624 total
time= 0.8s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-45.035 total
time=
      7.2s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-26.093 total
time=
      1.2s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-27.164 total
time=
      2.9s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.797 total
time=
      3.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=200, oob score=True;, score=-25.796 total
time= 3.1s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-26.379 total
time=
      2.1s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-25.836 total
      1.9s
time=
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-27.114 total
time=
       3.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-26.723 total
```

2.7s

```
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.762 total
time=
       2.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=300, oob score=True;, score=-26.291 total
time=
       2.0s
[CV 1/5] END max depth=None, max features=sqrt, min samples leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-47.281 total
time= 15.5s
[CV 2/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-46.166 total
time= 14.8s
[CV 3/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-44.243 total
time= 14.5s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-25.801 total
      2.1s
[CV 4/5] END max_depth=None, max_features=sqrt, min_samples_leaf=10,
min samples split=20, n estimators=2000, oob score=True;, score=-45.213 total
time= 15.8s
[CV 5/5] END max depth=None, max features=sqrt, min samples leaf=10,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-45.039 total
time= 15.6s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-27.052 total
time=
      5.4s
[CV 2/5] END max_depth=None, max features=log2, min samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-26.606 total
time=
      5.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-25.635 total
time=
      5.2s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=500, oob score=True;, score=-26.274 total
time= 5.3s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-25.856 total
time= 5.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-26.969 total
time= 12.4s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-25.659 total
time= 11.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-26.585 total
```

time= 12.1s

```
[CV 4/5] END max depth=None, max features=log2, min samples leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-26.187 total
time= 12.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-28.602 total
time=
[CV 5/5] END max depth=None, max features=log2, min samples leaf=1,
min samples split=2, n estimators=1000, oob score=True;, score=-25.793 total
time= 12.8s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.986 total
[CV 3/5] END max_depth=None, max features=log2, min samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-26.870 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-27.387 total
      1.4s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=100, oob score=True;, score=-27.496 total
      1.2s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.620 total
time=
      2.7s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-28.312 total
time=
      2.9s
[CV 3/5] END max_depth=None, max features=log2, min samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-26.706 total
time=
      2.3s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-27.148 total
time=
      2.2s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=200, oob score=True;, score=-27.093 total
time= 1.6s
[CV 1/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.273 total
time=
      2.7s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-26.677 total
      2.5s
time=
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-26.984 total
time=
       2.5s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-26.558 total
time= 25.5s
```

```
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-26.952 total
time= 26.4s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-25.648 total
time= 25.8s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=1,
min samples split=5, n estimators=300, oob score=True;, score=-26.941 total
       2.7s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-27.585 total
      3.0s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.211 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.727 total
      4.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=500, oob score=True;, score=-27.614 total
time= 4.2s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.987 total
time=
      3.7s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-26.964 total
time=
      3.3s
[CV 4/5] END max_depth=None, max features=log2, min samples_leaf=1,
min samples split=2, n estimators=2000, oob score=True;, score=-26.153 total
time= 23.4s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-25.788 total
time= 23.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-28.198 total
time= 9.2s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-27.574 total
time= 9.6s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.954 total
      9.9s
time=
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=1000, oob score=True;, score=-26.697 total
time= 10.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-26.921 total
```

time= 10.1s

```
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-32.854 total
time=
      1.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.478 total
time=
      0.8s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-30.611 total
      1.2s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-30.866 total
      0.8s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min samples split=10, n estimators=100, oob score=True;, score=-30.741 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.400 total
      2.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-31.267 total
      2.7s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-30.612 total
time=
      2.6s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.901 total
time=
      2.5s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min samples split=10, n estimators=200, oob score=True;, score=-30.537 total
time=
      2.7s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.198 total
time=
      4.2s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-31.163 total
time= 3.5s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.513 total
time= 3.5s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-30.666 total
      2.8s
time=
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=300, oob score=True;, score=-30.570 total
time=
       2.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.265 total
time= 24.0s
```

```
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-32.119 total
time=
      4.5s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-31.104 total
time=
       4.1s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.464 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.678 total
time= 22.4s
[CV 2/5] END max_depth=None, max features=log2, min samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-27.570 total
time= 22.8s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-30.521 total
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=500, oob score=True;, score=-30.415 total
time= 3.1s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-26.971 total
time= 21.8s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=5, n estimators=2000, oob score=True;, score=-26.844 total
time= 22.2s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.057 total
time= 8.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.045 total
time=
      8.6s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.346 total
time= 8.9s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.418 total
time= 9.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-40.935 total
      1.0s
time=
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-39.467 total
time=
      1.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.291 total
time=
       0.9s
```

```
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-38.861 total
time=
      1.0s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-30.342 total
time= 10.9s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=1,
min samples split=20, n estimators=100, oob score=True;, score=-39.007 total
       2.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-40.478 total
      3.9s
[CV 2/5] END max_depth=None, max features=log2, min samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-39.280 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.240 total
      2.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=200, oob score=True;, score=-38.779 total
      2.2s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.680 total
time=
      2.4s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-40.379 total
time=
      3.6s
[CV 2/5] END max_depth=None, max features=log2, min samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-39.359 total
time= 4.3s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.281 total
time=
      4.0s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=300, oob score=True;, score=-38.717 total
time= 4.2s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.469 total
time= 2.7s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.057 total
time= 24.4s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-40.317 total
time=
      4.4s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.048 total
time= 23.3s
```

```
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-39.315 total
time=
       3.7s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.074 total
time=
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-30.301 total
time= 23.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.482 total
       3.0s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min samples split=20, n estimators=500, oob score=True;, score=-38.282 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-30.368 total
time= 23.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=10, n estimators=2000, oob score=True;, score=-30.346 total
time= 23.6s
[CV 1/5] END max depth=None, max features=log2, min samples leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.294 total
time=
      8.3s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.173 total
time=
      8.4s
[CV 3/5] END max_depth=None, max features=log2, min samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.034 total
time=
      8.2s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.292 total
time=
      8.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=100, oob score=True;, score=-31.173 total
time= 0.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.181 total
time= 8.1s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-30.084 total
      0.9s
time=
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.176 total
time=
      0.9s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.385 total
time=
       0.8s
```

```
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      0.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=200, oob score=True;, score=-30.936 total
time=
       2.6s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.803 total
       2.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.057 total
      2.0s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.141 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-29.177 total
      2.2s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=300, oob score=True;, score=-30.675 total
time= 3.5s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.742 total
time=
      3.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-28.932 total
time=
      3.2s
[CV 4/5] END max_depth=None, max features=log2, min samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.021 total
time=
      2.5s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-29.153 total
time=
      2.2s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-40.279 total
time= 19.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-30.574 total
time= 3.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.173 total
time= 18.2s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.662 total
time=
       3.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-37.961 total
```

time= 17.8s

```
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-28.843 total
time=
      4.4s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=1,
min samples split=20, n estimators=2000, oob score=True;, score=-38.281 total
time= 17.2s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=3,
min samples split=2, n estimators=500, oob score=True;, score=-28.923 total
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-29.006 total
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=1,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.144 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-30.573 total
      9.5s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-28.761 total
      9.6s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-29.567 total
time=
      9.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-31.173 total
time=
      0.6s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-30.084 total
time=
      0.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-28.901 total
time=
      9.5s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=1000, oob score=True;, score=-28.946 total
time= 9.0s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.176 total
time= 1.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.385 total
time=
      1.1s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=100, oob_score=True;, score=-29.393 total
time=
      1.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=200, oob_score=True;, score=-30.936 total
```

2.5s

```
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.803 total time= 2.3s
```

- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.057 total time= 2.4s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.177 total time= 2.3s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=200, oob_score=True;, score=-29.141 total time= 2.3s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-30.675 total time= 3.3s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.742 total time= 2.8s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-28.932 total time= 3.0s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.021 total time= 2.2s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=300, oob_score=True;, score=-29.153 total time= 2.1s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.795 total time= 19.8s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-29.508 total time= 20.1s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-30.574 total time= 3.8s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-30.607 total time= 20.8s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.662 total time= 3.5s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.843 total time= 3.2s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3, min_samples_split=5, n_estimators=500, oob_score=True;, score=-29.006 total time= 3.7s

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[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-28.923 total
time=
      3.8s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=2, n estimators=2000, oob score=True;, score=-28.933 total
time= 18.7s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-28.942 total
time= 18.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-30.573 total
      8.6s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-29.567 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.761 total
      9.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=1000, oob score=True;, score=-28.901 total
      9.1s
[CV 1/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.353 total
time= 0.7s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-32.354 total
time=
      0.5s
[CV 3/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min samples split=10, n estimators=100, oob score=True;, score=-31.489 total
time= 0.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.574 total
time= 1.0s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=100, oob_score=True;, score=-31.902 total
time= 1.0s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-28.946 total
time= 9.8s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-33.092 total
      2.1s
time=
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-32.095 total
time=
      1.9s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-31.295 total
```

2.4s

```
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-31.314 total
time=
       2.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=200, oob score=True;, score=-31.531 total
time=
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-33.012 total
      3.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.959 total
[CV 3/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.177 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-31.281 total
      2.2s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=300, oob score=True;, score=-31.457 total
      2.6s
[CV 1/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-33.032 total
time=
      4.5s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-30.607 total
time= 20.3s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-29.508 total
time= 20.4s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.795 total
time= 20.2s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.866 total
time= 4.1s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.104 total
time= 3.9s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-31.223 total
      3.6s
time=
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=500, oob score=True;, score=-31.320 total
time=
       3.9s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-28.933 total
```

time= 20.7s

```
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=5, n estimators=2000, oob score=True;, score=-28.942 total
time= 20.7s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.914 total
time=
       8.8s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=1000, oob score=True;, score=-31.834 total
      9.1s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.090 total
      9.1s
[CV 4/5] END max_depth=None, max features=log2, min samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.110 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.075 total
time= 0.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.549 total
time= 0.7s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.430 total
time= 0.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=100, oob score=True;, score=-39.072 total
time=
      0.8s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-31.214 total
time=
      9.4s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-39.147 total
time= 1.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-40.727 total
time= 2.3s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.264 total
time=
      2.3s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.329 total
      2.4s
time=
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=200, oob score=True;, score=-38.837 total
time=
       2.4s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.786 total
```

2.7s

```
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-40.699 total
time=
      4.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-39.447 total
time=
       3.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.274 total
       2.9s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.843 total
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min samples split=20, n estimators=300, oob score=True;, score=-38.629 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.580 total
      3.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=10, n estimators=2000, oob score=True;, score=-32.892 total
time= 20.9s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.380 total
time=
      3.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.808 total
time= 20.2s
[CV 3/5] END max_depth=None, max features=log2, min samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-38.225 total
time=
      3.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.051 total
time= 20.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=500, oob score=True;, score=-38.593 total
      2.7s
time=
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-38.457 total
time= 3.3s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.101 total
time= 19.8s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-31.170 total
time= 20.2s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.577 total
```

7.7s

```
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.194 total
time=
      7.8s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-39.413 total
time=
       8.0s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=1000, oob score=True;, score=-38.509 total
      8.1s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-34.938 total
      0.8s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.526 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-32.756 total
      0.8s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=100, oob score=True;, score=-32.998 total
time= 0.8s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.372 total
time=
      8.9s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-33.075 total
time=
      0.8s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-34.583 total
time=
       2.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-33.258 total
time=
      2.4s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=200, oob score=True;, score=-32.477 total
      2.5s
time=
[CV 4/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.729 total
time=
      2.4s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=200, oob_score=True;, score=-32.763 total
       2.5s
time=
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-34.581 total
time=
       3.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-33.284 total
```

2.9s

```
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=300, oob_score=True;, score=-32.389 total
time=
       2.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.663 total
        2.2s
time=
[CV 5/5] END max depth=None, max features=log2, min samples leaf=5,
min samples split=2, n estimators=300, oob score=True;, score=-32.806 total
       2.2s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-34.517 total
      3.4s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.528 total
time= 19.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-33.239 total
      3.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min samples split=20, n estimators=2000, oob score=True;, score=-39.404 total
time= 18.5s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.090 total
time= 17.9s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.381 total
time=
      2.8s
[CV 4/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=500, oob_score=True;, score=-32.582 total
time=
      3.6s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.510 total
time= 18.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=500, oob score=True;, score=-32.744 total
time= 3.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=3,
min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.337 total
time= 18.3s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-33.236 total
      8.4s
time=
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=1000, oob score=True;, score=-34.448 total
time=
      8.5s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.472 total
```

8.9s

```
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.376 total time= 9.2s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-34.938 total time= 0.8s
```

- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.526 total time= 0.7s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.756 total time= 1.0s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-32.998 total time= 1.0s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=100, oob_score=True;, score=-33.075 total time= 1.1s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-32.620 total time= 9.7s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-34.583 total time= 2.8s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-33.258 total time= 2.5s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.477 total time= 2.5s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.729 total time= 2.6s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=200, oob_score=True;, score=-32.763 total time= 2.5s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-34.581 total time= 3.2s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-33.284 total time= 2.5s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.389 total time= 2.1s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.663 total time= 2.1s

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[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=300, oob_score=True;, score=-32.806 total
time=
       2.5s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=500, oob score=True;, score=-34.517 total
time=
       3.6s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-33.207 total
time= 19.9s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=2, n estimators=2000, oob score=True;, score=-34.432 total
time= 20.0s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-33.239 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.303 total
```

[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.381 total time= 3.3s

time= 19.6s

- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.582 total time= 3.6s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=500, oob_score=True;, score=-32.744 total time= 3.5s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.564 total time= 19.0s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-32.510 total time= 19.3s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-34.448 total time= 8.4s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-33.236 total time= 8.9s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-32.376 total time= 8.8s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=10, n_estimators=100, oob_score=True;, score=-34.938 total time= 0.7s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=10, n_estimators=100, oob_score=True;, score=-33.526 total time= 0.6s

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[CV 4/5] END max depth=None, max features=log2, min samples leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.472 total
time=
      8.8s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-32.756 total
time=
      0.7s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-32.998 total
      0.7s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=100, oob score=True;, score=-33.075 total
      0.9s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min samples split=5, n estimators=1000, oob score=True;, score=-32.620 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-34.583 total
      2.3s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-33.258 total
      2.4s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=200, oob_score=True;, score=-32.477 total
time=
      2.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.729 total
time=
      2.2s
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min samples split=10, n estimators=200, oob score=True;, score=-32.763 total
time=
      2.4s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-34.581 total
time=
      3.3s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-33.284 total
time= 3.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.389 total
time=
      2.4s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=300, oob_score=True;, score=-32.663 total
      2.2s
time=
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=300, oob score=True;, score=-32.806 total
time=
       2.3s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-34.517 total
```

3.6s

```
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-33.239 total
time=
       2.7s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-34.432 total
time= 19.9s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=5, n_estimators=2000, oob_score=True;, score=-33.207 total
time= 19.5s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.303 total
time= 19.2s
[CV 3/5] END max_depth=None, max features=log2, min samples_leaf=5,
min samples split=10, n estimators=500, oob score=True;, score=-32.381 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.582 total
      3.6s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.510 total
time= 18.3s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=10, n_estimators=500, oob_score=True;, score=-32.744 total
time=
      3.9s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=5, n estimators=2000, oob score=True;, score=-32.564 total
time= 18.6s
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-34.448 total
time=
      8.2s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-33.236 total
time=
      8.6s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.376 total
time= 8.6s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.591 total
time= 0.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-32.472 total
      9.0s
time=
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.922 total
time=
      0.7s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-38.856 total
```

0.7s

```
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.129 total
time=
      0.7s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=100, oob score=True;, score=-39.239 total
time=
       0.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=1000, oob score=True;, score=-32.620 total
      9.0s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-39.707 total
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-41.199 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-38.631 total
      2.0s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=200, oob score=True;, score=-38.912 total
      2.4s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-39.018 total
time=
      2.4s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-41.052 total
time=
      3.2s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-39.881 total
time=
      2.8s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.663 total
time=
      2.7s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=300, oob score=True;, score=-38.990 total
      2.1s
time=
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=300, oob_score=True;, score=-38.905 total
time= 2.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-41.018 total
      3.5s
time=
[CV 1/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-34.432 total
time= 19.1s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-39.782 total
time=
       3.0s
```

```
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-33.207 total
time= 19.2s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.303 total
time= 18.7s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.562 total
      3.0s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.971 total
[CV 5/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min samples split=20, n estimators=500, oob score=True;, score=-38.795 total
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-32.510 total
time= 18.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min samples split=10, n estimators=2000, oob score=True;, score=-32.564 total
time= 18.4s
[CV 1/5] END max depth=None, max features=log2, min samples leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.938 total
time=
      8.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.464 total
time=
      7.5s
[CV 2/5] END max_depth=None, max features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-39.786 total
time=
      8.1s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.934 total
time= 8.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=100, oob score=True;, score=-43.405 total
time= 0.6s
[CV 2/5] END max depth=None, max features=log2, min samples leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.976 total
time= 0.5s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-40.641 total
      0.5s
time=
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5,
min_samples_split=20, n_estimators=1000, oob_score=True;, score=-38.758 total
```

8.4s

```
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=100, oob_score=True;, score=-41.499 total time= 0.8s

[CV 1/5] END max_depth=None max_features=log2 min_samples_leaf=10
```

- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=200, oob_score=True;, score=-43.066 total time= 2.1s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.524 total time= 2.1s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.416 total time= 2.2s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=200, oob_score=True;, score=-40.900 total time= 2.3s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=200, oob_score=True;, score=-41.153 total time= 1.9s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=300, oob_score=True;, score=-43.075 total time= 3.3s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.553 total time= 2.8s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.396 total time= 2.9s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=300, oob_score=True;, score=-40.861 total time= 2.2s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=300, oob_score=True;, score=-41.061 total time= 2.4s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-42.881 total time= 3.6s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-41.560 total time= 3.3s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.912 total time= 18.7s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-39.767 total time= 18.0s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.455 total time= 17.7s

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[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.274 total time= 3.1s
```

- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.902 total time= 2.7s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=500, oob_score=True;, score=-40.816 total time= 3.2s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.737 total time= 17.8s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=5, min_samples_split=20, n_estimators=2000, oob_score=True;, score=-38.902 total time= 18.0s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-42.875 total time= 7.8s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-41.536 total time= 7.6s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.154 total time= 7.8s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.741 total time= 7.9s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-43.405 total time= 0.6s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.976 total time= 0.5s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-40.641 total time= 0.6s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=1000, oob_score=True;, score=-40.738 total time= 7.9s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.255 total time= 0.6s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=100, oob_score=True;, score=-41.499 total time= 0.6s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-43.066 total time= 2.0s

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[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.524 total time= 2.2s
```

- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-40.416 total time= 2.2s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-40.900 total time= 2.2s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=200, oob_score=True;, score=-41.153 total time= 2.3s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-43.075 total time= 3.4s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.553 total time= 2.8s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.396 total time= 2.6s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-40.861 total time= 2.0s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=300, oob_score=True;, score=-41.061 total time= 2.1s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-42.881 total time= 3.2s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-41.560 total time= 2.9s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-42.920 total time= 17.8s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-41.503 total time= 16.9s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=2, n_estimators=2000, oob_score=True;, score=-40.048 total time= 17.2s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.274 total time= 2.8s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.902 total time= 2.9s

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[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=500, oob_score=True;, score=-40.816 total
time=
      3.5s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.845 total
time= 16.7s
[CV 5/5] END max depth=None, max features=log2, min samples leaf=10,
min samples split=2, n estimators=2000, oob score=True;, score=-40.649 total
time= 17.1s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-42.875 total
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=1000, oob score=True;, score=-41.536 total
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.154 total
      7.8s
```

- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.741 total time= 7.8s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=100, oob_score=True;, score=-43.405 total time= 0.6s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=100, oob_score=True;, score=-41.976 total time= 0.5s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=100, oob_score=True;, score=-40.641 total time= 0.8s
- [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=100, oob_score=True;, score=-41.255 total time= 0.8s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=100, oob_score=True;, score=-41.499 total time= 1.0s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=1000, oob_score=True;, score=-40.738 total time= 8.7s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-43.066 total time= 2.6s
- [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.416 total time= 1.9s
- [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-41.524 total time= 2.2s

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[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-40.900 total time= 2.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=200, oob_score=True;, score=-41.153 total time= 2.4s
```

[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=300, oob_score=True;, score=-43.075 total time= 3.1s

[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=300, oob_score=True;, score=-41.553 total time= 2.5s

[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=300, oob_score=True;, score=-40.396 total time= 2.2s

[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=300, oob_score=True;, score=-40.861 total time= 2.0s

[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=300, oob_score=True;, score=-41.061 total time= 1.9s

[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=500, oob_score=True;, score=-42.881 total time= 3.0s

[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=500, oob_score=True;, score=-41.560 total time= 2.7s

[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=2000, oob_score=True;, score=-42.920 total time= 17.7s

[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=2000, oob_score=True;, score=-41.503 total time= 17.6s

[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.048 total time= 17.2s

[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.274 total time= 2.6s

[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.902 total time= 3.6s

[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=500, oob_score=True;, score=-40.816 total time= 3.5s

[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=5, n_estimators=2000, oob_score=True;, score=-40.845 total time= 17.0s

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[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=5, n estimators=2000, oob score=True;, score=-40.649 total
time= 17.0s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-42.875 total
      7.5s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-41.536 total
      7.6s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.154 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-43.405 total
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.976 total
      0.5s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=1000, oob score=True;, score=-40.741 total
time= 8.2s
[CV 4/5] END max depth=None, max features=log2, min samples leaf=10,
min_samples_split=20, n_estimators=100, oob_score=True;, score=-41.255 total
time=
      0.5s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-40.641 total
time=
      0.6s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=100, oob score=True;, score=-41.499 total
time=
      0.8s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=1000, oob_score=True;, score=-40.738 total
time=
      8.4s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-43.066 total
      2.3s
time=
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.524 total
time= 2.0s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=200, oob_score=True;, score=-40.416 total
      2.0s
time=
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=200, oob score=True;, score=-40.900 total
time=
       2.3s
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
```

min_samples_split=20, n_estimators=200, oob_score=True;, score=-41.153 total

time=

2.2s

```
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-43.075 total
time=
       2.8s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.553 total
time=
        2.4s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.396 total
       2.2s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-40.861 total
[CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=300, oob score=True;, score=-41.061 total
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=20, n_estimators=500, oob_score=True;, score=-42.881 total
      3.6s
[CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=10, n estimators=2000, oob score=True;, score=-42.920 total
time= 17.8s
[CV 3/5] END max depth=None, max features=log2, min samples leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.048 total
time= 17.4s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min_samples_split=10, n_estimators=2000, oob_score=True;, score=-41.503 total
time= 17.6s
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-41.560 total
time=
      3.1s
[CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.274 total
time=
      3.3s
[CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
min samples split=20, n estimators=500, oob score=True;, score=-40.902 total
time= 3.0s
```

- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=20, n_estimators=500, oob_score=True;, score=-40.816 total
- time= 3.2s

 [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,

 min_samples_split=10, n_ostimators=2000, oob_score=True: __score=-40.845 total
- min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.845 total time= 17.4s
- [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=10, n_estimators=2000, oob_score=True;, score=-40.649 total time= 17.7s
- [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10, min_samples_split=20, n_estimators=1000, oob_score=True;, score=-42.875 total time= 8.0s

```
[CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=1000, oob_score=True;, score=-41.536 total
     time=
            8.5s
     [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.154 total
     time=
             8.6s
     [CV 4/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.741 total
     [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=1000, oob_score=True;, score=-40.738 total
     [CV 1/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=2000, oob_score=True;, score=-42.920 total
     [CV 2/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=2000, oob_score=True;, score=-41.503 total
     time= 13.9s
     [CV 3/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min samples split=20, n estimators=2000, oob score=True;, score=-40.048 total
     time= 13.4s
     [CV 4/5] END max depth=None, max features=log2, min samples leaf=10,
     min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.845 total
     time= 10.1s
     [CV 5/5] END max_depth=None, max_features=log2, min_samples_leaf=10,
     min_samples_split=20, n_estimators=2000, oob_score=True;, score=-40.649 total
     time=
            9.7s
     GridSearchCV finished in 3128.94 seconds.
     Best parameters found by GridSearchCV:
     {'max_depth': 20, 'max_features': 'log2', 'min_samples_leaf': 1,
     'min_samples_split': 2, 'n_estimators': 2000, 'oob_score': True}
     Best cross-validation score (Negative MAE): -26.2104
     Corresponds to MAE: 26.2104
     Best model training complete.
     Best Model OOB score: 0.9331
     1.5 Evaluate
[13]: def evaluate_model(model, X_test, Y_test):
          """Evaluates the model using MAE and MSE."""
          Y_pred = model.predict(X_test)
          mae = mean_absolute_error(Y_test, Y_pred)
```

mse = mean_squared_error(Y_test, Y_pred)

```
rmse = np.sqrt(mse) # Root Mean Squared Error
          print("\n--- Model Evaluation ---")
          print(f"Mean Absolute Error (MAE): {mae:.4f}")
          print(f"Mean Squared Error (MSE): {mse:.4f}")
          print(f"Root Mean Squared Error (RMSE): {rmse:.4f}")
          # Optional: Print metrics per output feature
          print("\nMAE per output feature:")
          output_features = [
              'dist_red_final', 'angle_red_final', 'dist_green_final',
              'angle_green_final', 'dist_blue_final', 'angle_blue_final'
          for i, name in enumerate(output_features):
               mae_feature = mean_absolute_error(Y_test[:, i], Y_pred[:, i])
               print(f" {name}: {mae_feature:.4f}")
          return mae, mse
[14]: # 6. Evaluate the Best Model found by GridSearch (using scaled test data)
      if world_model is not None:
          evaluate_model(world_model, X_test_scaled, Y_test)
     --- Model Evaluation ---
     Mean Absolute Error (MAE): 25.4767
     Mean Squared Error (MSE): 1797.9828
     Root Mean Squared Error (RMSE): 42.4026
     MAE per output feature:
       dist_red_final: 40.4402
       angle_red_final: 11.3950
       dist_green_final: 38.9685
       angle green final: 10.3111
       dist_blue_final: 40.6054
       angle_blue_final: 11.1402
[68]: # 6. Evaluate the Best Model found by GridSearch (using scaled test data)
      if world_model is not None:
          evaluate_model(world_model, X_test_scaled, Y_test)
     --- Model Evaluation ---
     Mean Absolute Error (MAE): 24.3979
     Mean Squared Error (MSE): 1798.4146
     Root Mean Squared Error (RMSE): 42.4077
     MAE per output feature:
```

```
dist_red_final: 40.7431
angle_red_final: 8.4946
dist_green_final: 36.7146
angle_green_final: 18.2790
dist_blue_final: 38.3186
angle_blue_final: 3.8372
```

1.6 Save model

```
[16]: # 7. Save Model and Scaler
save_model_and_scaler(world_model, scaler)
```

Model saved to ../src/models/world_model_v4.joblib Scaler saved to ../src/models/scaler_v4.joblib

```
[17]: # Example prediction (how you'd use it later)
print("\n--- Example Prediction ---")

# Take the first sample from the original test set
sample_X = X_test[0].reshape(1, -1)
sample_Y_actual = Y_test[0]

# Scale the sample using the *saved* scaler
sample_X_scaled = scaler.transform(sample_X)

# Predict using the trained model
sample_Y_pred = world_model.predict(sample_X_scaled)

print(f"Input State + Action: {sample_X[0]}")
print(f"Actual Final State: {sample_Y_actual}")
```

print(f"Predicted Final State:{sample_Y_pred[0]}")

--- Example Prediction --Input State + Action: [680.51968108 89.80900352 315.51674792 90.13283211 632.90729297
4.12401969 22. -15.]
Actual Final State: [681.67413708 90.6233093 316.80506478 91.88406189 623.33122452
4.29052584]
Predicted Final State: [692.31549638 85.34264298 326.58159839 85.79407389 644.93176788
8.11602645]