Predict Bike Sharing Demand with AutoGluon Template

Project: Predict Bike Sharing Demand with AutoGluon

This notebook is a template with each step that you need to complete for the project.

Please fill in your code where there are explicit `?` markers in the notebook. You are welcome to add more cells and code as you see fit.

Once you have completed all the code implementations, please export your notebook as a HTML file so the reviews can view your code. Make sure you have all outputs correctly outputted.

`File-> Export Notebook As... -> Export Notebook as HTML`

There is a writeup to complete as well after all code implememtation is done. Please answer all questions and attach the necessary tables and charts. You can complete the writeup in either markdown or PDF.

Completing the code template and writeup template will cover all of the rubric points for this project.

The rubric contains "Stand Out Suggestions" for enhancing the project beyond the minimum requirements. The stand out suggestions are optional. If you decide to pursue the "stand out suggestions", you can include the code in this notebook and also discuss the results in the writeup file.

Step 1: Create an account with Kaggle

Create Kaggle Account and download API key

Below is example of steps to get the API username and key. Each student will have their own username and key.

1. Open account settings.  kaggle1.png  kaggle2.png
2. Scroll down to API and click Create New API Token.  kaggle3.png  kaggle4.png
3. Open up `kaggle.json` and use the username and key. kaggle5.png

Step 2: Download the Kaggle dataset using the kaggle python library

Open up Sagemaker Studio and use starter template

1. Notebook should be using a `ml.t3.medium` instance (2 vCPU + 4 GiB)
2. Notebook should be using kernal: `Python 3 (MXNet 1.8 Python 3.7 CPU Optimized)`

Install packages

```
%%capture

!pip install -U pip
!pip install -U setuptools wheel
!pip install -U "mxnet<2.0.0" bokeh==2.0.1
!pip install autogluon --no-cache-dir
# Without --no-cache-dir, smaller aws instances may have trouble installing
```

Setup Kaggle API Key

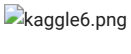
```
# create the .kaggle directory and an empty kaggle.json file
!mkdir -p /root/.kaggle
!touch /root/.kaggle/kaggle.json
!chmod 600 /root/.kaggle/kaggle.json


# Fill in your user name and key from creating the kaggle account and API token file
import json
kaggle_username = "snakebutcher"
kaggle_key = "8f5a8aafb9d19778486e1945297d99a7"

# Save API token the kaggle.json file
with open("/root/.kaggle/kaggle.json", "w") as f:
    f.write(json.dumps({"username": kaggle_username, "key": kaggle_key}))
```

Download and explore dataset

Go to the bike sharing demand competition and agree to the terms

 kaggle6.png

```
# Download the dataset, it will be in a .zip file so you'll need to unzip it as well.
!kaggle competitions download -c bike-sharing-demand
# If you already downloaded it you can use the -o command to overwrite the file
!unzip -o bike-sharing-demand.zip
```

```
Downloading bike-sharing-demand.zip to /content
  0% 0.00/189k [00:00<?, ?B/s]
100% 189k/189k [00:00<00:00, 18.9MB/s]
Archive:  bike-sharing-demand.zip
  inflating: sampleSubmission.csv
  inflating: test.csv
  inflating: train.csv
```

```
import pandas as pd
from autogluon.tabular import TabularPredictor
import time
```

```
# Create the train dataset in pandas by reading the csv
# Set the parsing of the datetime column so you can use some of the `dt` features in pandas later
train = pd.read_csv('train.csv', parse_dates=["datetime"])
train.head()
```

	datetime	season	holiday	workingday	weather	temp	atemp	humidity	windspeed	casual	registered	count
0	2011-01-01 00:00:00	1	0	0	1	9.84	14.395	81	0.0	3	13	16
1	2011-01-01 01:00:00	1	0	0	1	9.02	13.635	80	0.0	8	32	40
2	2011-01-01 02:00:00	1	0	0	1	9.02	13.635	80	0.0	5	27	32
3	2011-01-01 03:00:00	1	0	0	1	9.84	14.395	75	0.0	3	10	13
4	2011-01-01 04:00:00	1	0	0	1	9.84	14.395	75	0.0	0	1	1

```
# Simple output of the train dataset to view some of the min/max/varition of the dataset features.
train.describe()
```

	season	holiday	workingday	weather	temp
count	10886.000000	10886.000000	10886.000000	10886.000000	10886.00000
mean	2.506614	0.028569	0.680875	1.418427	20.23086
std	1.116174	0.166599	0.466159	0.633839	7.79159
min	1.000000	0.000000	0.000000	1.000000	0.82000
25%	2.000000	0.000000	0.000000	1.000000	13.94000
50%	3.000000	0.000000	1.000000	1.000000	20.50000
75%	4.000000	0.000000	1.000000	2.000000	26.24000

```
# Create the test pandas dataframe in pandas by reading the csv, remember to parse the datetime!
test = pd.read_csv('test.csv', parse_dates=["datetime"])
test.head()
```

	datetime	season	holiday	workingday	weather	temp	atemp	humidity	windspeed
0	2011-01-20 00:00:00	1	0	1	1	10.66	11.365	56	26.0027
1	2011-01-20 01:00:00	1	0	1	1	10.66	13.635	56	0.0000
2	2011-01-20 02:00:00	1	0	1	1	10.66	13.635	56	0.0000
3	2011-01-20 03:00:00	1	0	1	1	10.66	12.880	56	11.0014
4	2011-01-20 04:00:00	1	0	1	1	10.66	12.880	56	11.0014

```
# Same thing as train and test dataset
submission = pd.read_csv('sampleSubmission.csv', parse_dates=["datetime"])
submission.head()
```

	datetime	count
0	2011-01-20 00:00:00	0
1	2011-01-20 01:00:00	0
2	2011-01-20 02:00:00	0
3	2011-01-20 03:00:00	0
4	2011-01-20 04:00:00	0

Step 3: Train a model using AutoGluon's Tabular Prediction

Requirements:

- We are predicting `count`, so it is the label we are setting.
- Ignore `casual` and `registered` columns as they are also not present in the test dataset.
- Use the `root_mean_squared_error` as the metric to use for evaluation.
- Set a time limit of 10 minutes (600 seconds).
- Use the preset `best_quality` to focus on creating the best model.

```
predictor = TabularPredictor(
    label="count",
    eval_metric="root_mean_squared_error",
    learner_kwargs={"ignored_columns": ["casual", "registered"]}
).fit(
    train_data=train,
    time_limit=600,
    presets="best_quality"
)
```

```
No path specified. Models will be saved in: "AutogluonModels/ag-20230614_120952/"
Presets specified: ['best_quality']
Stack configuration (auto_stack=True): num_stack_levels=1, num_bag_folds=8, num_bag_sets=20
Beginning AutoGluon training ... Time limit = 600s
AutoGluon will save models to "AutogluonModels/ag-20230614_120952/"
AutoGluon Version:  0.7.0
Python Version:     3.10.12
Operating System:   Linux
Platform Machine:   x86_64
Platform Version:   #1 SMP Sat Apr 29 09:15:28 UTC 2023
Train Data Rows:    10886
Train Data Columns: 11
Label Column: count
Preprocessing data ...
AutoGluon infers your prediction problem is: 'regression' (because dtype of label-column == int and many unique label-values observed).
        Label info (max, min, mean, stddev): (977, 1, 191.57413, 181.14445)
        If 'regression' is not the correct problem_type, please manually specify the problem_type parameter during predictor init (You may specify problem_type as
Using Feature Generators to preprocess the data ...
Dropping user-specified ignored columns: ['casual', 'registered']
Fitting AutoMLPipelineFeatureGenerator...
        Available Memory:                    12462.93 MB
        Train Data (Original)  Memory Usage: 0.78 MB (0.0% of available memory)
        Inferring data type of each feature based on column values. Set feature_metadata_in to manually specify special dtypes of the features.
        Stage 1 Generators:
                Fitting AsTypeFeatureGenerator...
                        Note: Converting 2 features to boolean dtype as they only contain 2 unique values.
        Stage 2 Generators:
                Fitting FillNaFeatureGenerator...
        Stage 3 Generators:
                Fitting IdentityFeatureGenerator...
                Fitting DatetimeFeatureGenerator...
        Stage 4 Generators:
                Fitting DropUniqueFeatureGenerator...
        Types of features in original data (raw dtype, special dtypes):
                ('datetime', []) : 1 | ['datetime']
                ('float', [])    : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])      : 5 | ['season', 'holiday', 'workingday', 'weather', 'humidity']
        Types of features in processed data (raw dtype, special dtypes):
                ('float', [])                : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])                  : 3 | ['season', 'weather', 'humidity']
                ('int', ['bool'])            : 2 | ['holiday', 'workingday']
                ('int', ['datetime_as_int']) : 5 | ['datetime', 'datetime.year', 'datetime.month', 'datetime.day', 'datetime.dayofweek']
        0.3s = Fit runtime
        9 features in original data used to generate 13 features in processed data.
        Train Data (Processed) Memory Usage: 0.98 MB (0.0% of available memory)
Data preprocessing and feature engineering runtime = 0.42s ...
AutoGluon will gauge predictive performance using evaluation metric: 'root_mean_squared_error'
        This metric's sign has been flipped to adhere to being higher_is_better. The metric score can be multiplied by -1 to get the metric value.
        To change this, specify the eval_metric parameter of Predictor()
AutoGluon will fit 2 stack levels (L1 to L2) ...
Fitting 11 L1 models ...
Fitting model: KNeighborsUnif_BAG_L1 ... Training model for up to 399.62s of the 599.56s of remaining time.
        -101.5462       = Validation score   (-root_mean_squared_error)
        0.06s    = Training   runtime
        0.08s    = Validation runtime
Fitting model: KNeighborsDist_BAG_L1 ... Training model for up to 389.83s of the 589.77s of remaining time.
        -84.1251        = Validation score   (-root_mean_squared_error)
```

Review AutoGluon's training run with ranking of models that did the best.

```
predictor.leaderboard(silent=True)
```

	model	score_val	pred_time_val	fit_time	pred_time_val_marginal	fit_time_marginal	stack_level	can_infer	fit_order
0	WeightedEnsemble_L3	-53.155928	23.094528	496.560885	0.000663	0.243464	3	True	13
1	RandomForestMSE_BAG_L2	-53.474405	17.798489	389.446133	0.612285	40.559677	2	True	11
2	LightGBM_BAG_L2	-55.188546	17.675386	380.196531	0.489182	31.310076	2	True	10
3	CatBoost_BAG_L2	-56.700732	17.360301	392.806175	0.174097	43.919719	2	True	12
4	LightGBMXT_BAG_L2	-60.188814	21.992399	424.447668	4.806195	75.561212	2	True	9
5	KNeighborsDist_BAG_L1	-84.125061	0.085134	0.077044	0.085134	0.077044	1	True	2
6	WeightedEnsemble_L2	-84.125061	0.086155	1.155456	0.001022	1.078413	2	True	8
7	KNeighborsUnif_BAG_L1	-101.546199	0.078435	0.061918	0.078435	0.061918	1	True	1
8	RandomForestMSE_BAG_L1	-116.548359	0.536063	22.819614	0.536063	22.819614	1	True	5
9	ExtraTreesMSE_BAG_L1	-124.600676	0.539298	7.851158	0.539298	7.851158	1	True	7
10	CatBoost_BAG_L1	-130.779916	0.123457	156.715295	0.123457	156.715295	1	True	6
11	LightGBM_BAG_L1	-131.054162	2.149148	42.567345	2.149148	42.567345	1	True	4
12	LightGBMXT_BAG_L1	-131.460909	13.674669	118.794082	13.674669	118.794082	1	True	3

Create predictions from test dataset

```
predictions = predictor.predict(test)
predictions.head()
```

```
0    22.787867
1    42.352966
2    46.123871
3    49.392597
4    52.044563
Name: count, dtype: float32
```

NOTE: Kaggle will reject the submission if we don't set everything to be > 0.

```
# Describe the `predictions` series to see if there are any negative values
predictions.describe()
```

```
count    6493.000000
mean      100.597511
std        90.149376
min         2.994517
25%        19.700634
50%        64.090927
75%       167.907104
max       369.014435
Name: count, dtype: float64
```

```
# How many negative values do we have?
predictions[predictions < 0]
```

```
Series([], Name: count, dtype: float32)
```

```
# Set them to zero
predictions[predictions < 0] = 0
```

Set predictions to submission dataframe, save, and submit

```
submission["count"] = predictions
submission.to_csv("submission.csv", index=False)
```

```
!kaggle competitions submit -c bike-sharing-demand -f submission.csv -m "first raw submission"
```

```
100% 188k/188k [00:03<00:00, 51.5kB/s]
Successfully submitted to Bike Sharing Demand
```

View submission via the command line or in the web browser under the competition's page - `My Submissions`

```
time.sleep(5)
!kaggle competitions submissions -c bike-sharing-demand | tail -n +1 | head -n 3
```

```
fileName                    date                 description                         status    publicScore  privateScore
--------------------------  -------------------  ----------------------------------  --------  -----------  ------------
submission.csv              2023-06-14 12:21:18  first raw submission                complete  1.80798      1.80798
```

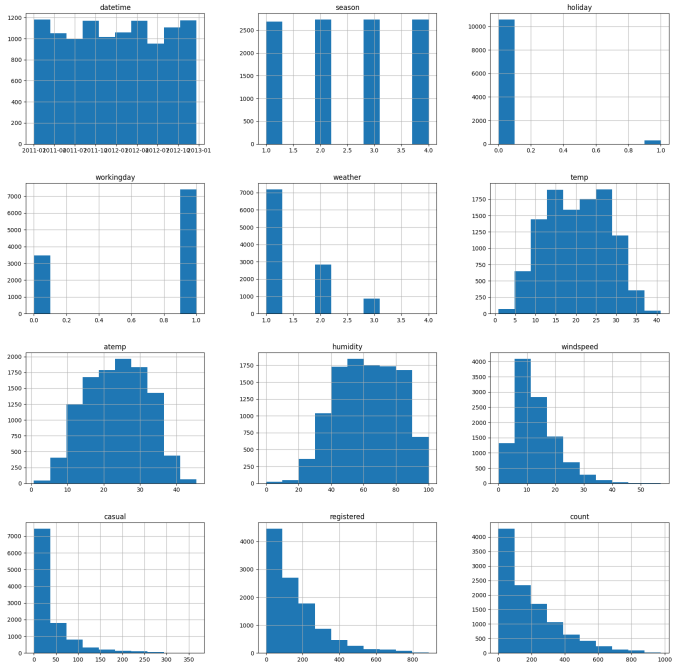
Initial score of `1.80798`

Step 4: Exploratory Data Analysis and Creating an additional feature

- Any additional feature will do, but a great suggestion would be to separate out the datetime into hour, day, or month parts.

```
# Create a histogram of all features to show the distribution of each one relative to the data. This is part of the exploratory data analysis
train.hist(figsize=(20,20))
```

```
array([[<Axes: title={'center': 'datetime'}>,
        <Axes: title={'center': 'season'}>,
        <Axes: title={'center': 'holiday'}>],
       [<Axes: title={'center': 'workingday'}>,
        <Axes: title={'center': 'weather'}>,
        <Axes: title={'center': 'temp'}>],
       [<Axes: title={'center': 'atemp'}>,
        <Axes: title={'center': 'humidity'}>,
        <Axes: title={'center': 'windspeed'}>],
       [<Axes: title={'center': 'casual'}>,
        <Axes: title={'center': 'registered'}>,
        <Axes: title={'center': 'count'}>]], dtype=object)
```




```
# Add a new feature to the dataset (dayofweek, represented as a category)
train['dayofweek'] = train['datetime'].dt.dayofweek
train = train.astype({"dayofweek": "category"})

test['dayofweek'] = test['datetime'].dt.dayofweek
test = test.astype({"dayofweek": "category"})
```

Make category types for these so models know they are not just numbers

- AutoGluon originally sees these as ints, but in reality they are int representations of a category.
- Setting the dtype to category will classify these as categories in AutoGluon.

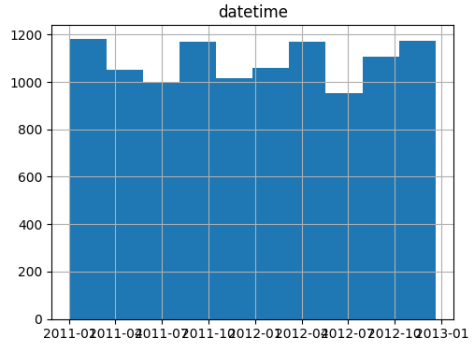
```
# Turn 'season' and 'weather' into category type
train = train.astype({"season": "category", "weather": "category"})
test = test.astype({"season": "category", "weather": "category"})
```

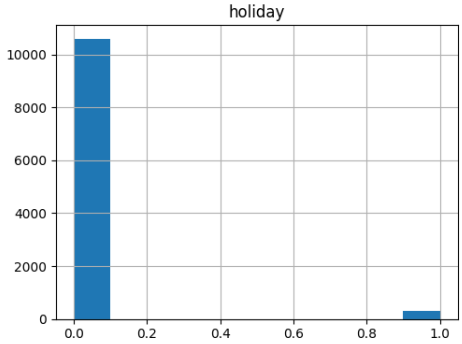
```
# View the new feature
train.head()
```

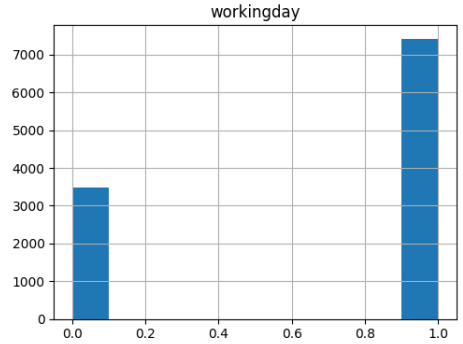
	datetime	season	holiday	workingday	weather	temp	atemp	humidity	windspeed	casual	registered	count	dayofweek
0	2011-01-01 00:00:00	1	0	0	1	9.84	14.395	81	0.0	3	13	16	5
1	2011-01-01 01:00:00	1	0	0	1	9.02	13.635	80	0.0	8	32	40	5
2	2011-01-01 02:00:00	1	0	0	1	9.02	13.635	80	0.0	5	27	32	5
3	2011-01-01 03:00:00	1	0	0	1	9.84	14.395	75	0.0	3	10	13	5
4	2011-01-01 04:00:00	1	0	0	1	9.84	14.395	75	0.0	0	1	1	5

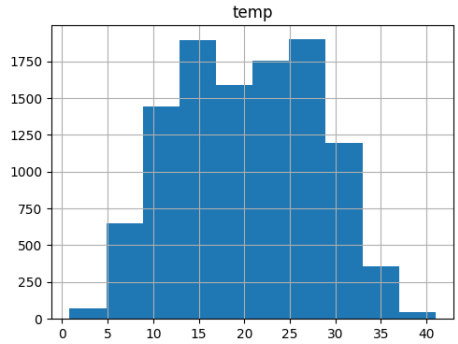
```
# View histogram of all features again now with the day of week feature
train.hist(figsize=(20, 20))
```

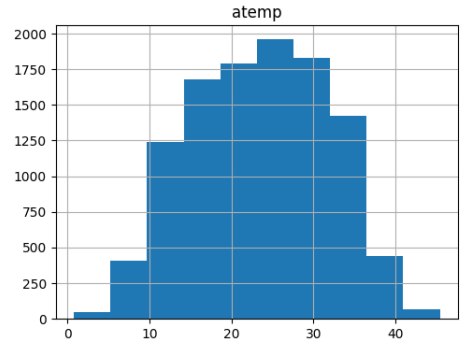
```
array([[<Axes: title={'center': 'datetime'}>,
        <Axes: title={'center': 'holiday'}>,
        <Axes: title={'center': 'workingday'}>],
       [<Axes: title={'center': 'temp'}>,
        <Axes: title={'center': 'atemp'}>,
        <Axes: title={'center': 'humidity'}>],
       [<Axes: title={'center': 'windspeed'}>,
        <Axes: title={'center': 'casual'}>,
        <Axes: title={'center': 'registered'}>],
       [<Axes: title={'center': 'count'}>, <Axes: >, <Axes: >]],
      dtype=object)
```

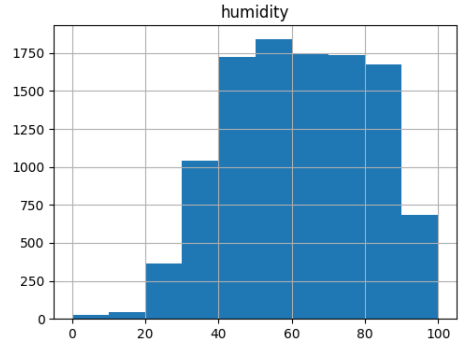


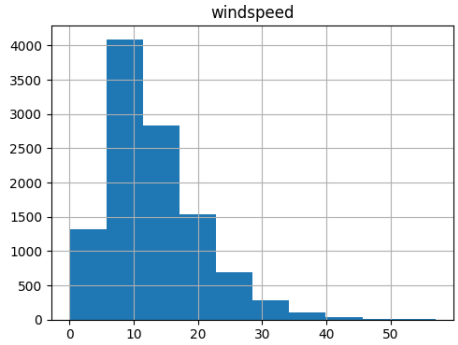


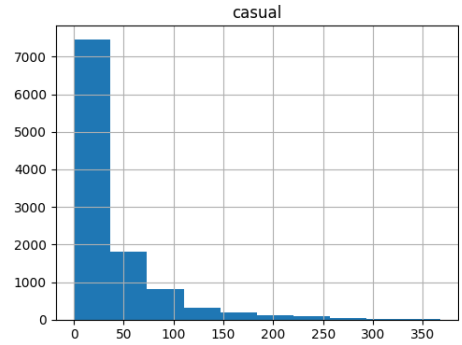


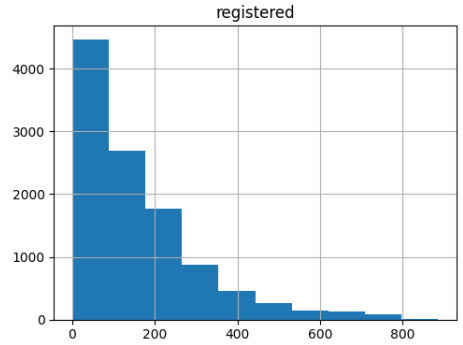


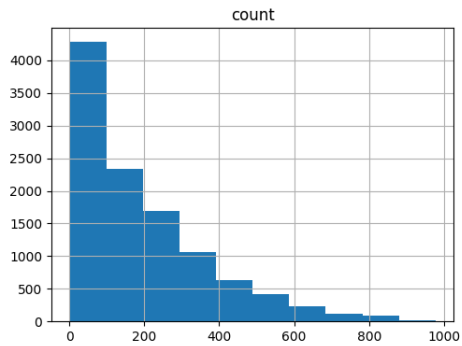












Step 5: Rerun the model with the same settings as before, just with more features

```
predictor_new_features = TabularPredictor(
    label="count",
    eval_metric="root_mean_squared_error",
    learner_kwargs={"ignored_columns": ["casual", "registered"]}
).fit(
    train_data=train,
    time_limit=600,
    presets="best_quality"
)
```

```
No path specified. Models will be saved in: "AutogluonModels/ag-20230614_122415/"
Presets specified: ['best_quality']
Stack configuration (auto_stack=True): num_stack_levels=1, num_bag_folds=8, num_bag_sets=20
Beginning AutoGluon training ... Time limit = 600s
AutoGluon will save models to "AutogluonModels/ag-20230614_122415/"
AutoGluon Version:  0.7.0
Python Version:     3.10.12
Operating System:   Linux
```

```
	Platform Machine:   x86_64
	Platform Version:   #1 SMP Sat Apr 29 09:15:28 UTC 2023
	Train Data Rows:    10886
	Train Data Columns: 12
	Label Column: count
	Preprocessing data ...
	AutoGluon infers your prediction problem is: 'regression' (because dtype of label-column == int and many unique label-values observed).
		Label info (max, min, mean, stddev): (977, 1, 191.57413, 181.14445)
		If 'regression' is not the correct problem_type, please manually specify the problem_type parameter during predictor init (You may specify problem_type as
	Using Feature Generators to preprocess the data ...
	Dropping user-specified ignored columns: ['casual', 'registered']
	Fitting AutoMLPipelineFeatureGenerator...
		Available Memory:                    11237.84 MB
		Train Data (Original)  Memory Usage: 0.64 MB (0.0% of available memory)
		Inferring data type of each feature based on column values. Set feature_metadata_in to manually specify special dtypes of the features.
		Stage 1 Generators:
			Fitting AsTypeFeatureGenerator...
				Note: Converting 2 features to boolean dtype as they only contain 2 unique values.
		Stage 2 Generators:
			Fitting FillNaFeatureGenerator...
		Stage 3 Generators:
			Fitting IdentityFeatureGenerator...
			Fitting CategoryFeatureGenerator...
				Fitting CategoryMemoryMinimizeFeatureGenerator...
			Fitting DatetimeFeatureGenerator...
		Stage 4 Generators:
			Fitting DropUniqueFeatureGenerator...
		Types of features in original data (raw dtype, special dtypes):
			('category', []) : 3 | ['season', 'weather', 'dayofweek']
			('datetime', []) : 1 | ['datetime']
			('float', [])    : 3 | ['temp', 'atemp', 'windspeed']
			('int', [])      : 3 | ['holiday', 'workingday', 'humidity']
		Types of features in processed data (raw dtype, special dtypes):
			('category', [])             : 3 | ['season', 'weather', 'dayofweek']
			('float', [])                : 3 | ['temp', 'atemp', 'windspeed']
			('int', [])                  : 1 | ['humidity']
			('int', ['bool'])            : 2 | ['holiday', 'workingday']
			('int', ['datetime_as_int']) : 5 | ['datetime', 'datetime.year', 'datetime.month', 'datetime.day', 'datetime.dayofweek']
		0.2s = Fit runtime
		10 features in original data used to generate 14 features in processed data.
		Train Data (Processed) Memory Usage: 0.84 MB (0.0% of available memory)
	Data preprocessing and feature engineering runtime = 0.23s ...
	AutoGluon will gauge predictive performance using evaluation metric: 'root_mean_squared_error'
		This metric's sign has been flipped to adhere to being higher_is_better. The metric score can be multiplied by -1 to get the metric value.
		To change this, specify the eval_metric parameter of Predictor()
	AutoGluon will fit 2 stack levels (L1 to L2) ...
	Fitting 11 L1 models ...
	Fitting model: KNeighborsUnif_BAG_L1 ... Training model for up to 399.73s of the 599.74s of remaining time.
		-101.5462        = Validation score   (-root_mean_squared_error)
```

```
predictor_new_features.leaderboard(silent=True)
```

	model	score_val	pred_time_val	fit_time	pred_time_val_marginal	fit_time_marginal	stack_level	can_infer	fit_order
0	WeightedEnsemble_L3	-53.024033	22.869867	573.297477	0.000641	0.204859	3	True	13
1	RandomForestMSE_BAG_L2	-53.311608	16.962404	451.186240	0.620526	48.855812	2	True	12
2	LightGBM_BAG_L2	-55.065665	16.912822	446.885679	0.570945	44.555252	2	True	11
3	LightGBMXT_BAG_L2	-61.411635	21.677755	479.681555	5.335877	77.351127	2	True	10
4	KNeighborsDist_BAG_L1	-84.125061	0.071213	0.054664	0.071213	0.054664	1	True	2
5	WeightedEnsemble_L2	-84.125061	0.074166	0.855059	0.002952	0.800394	2	True	9
6	KNeighborsUnif_BAG_L1	-101.546199	0.083087	0.059564	0.083087	0.059564	1	True	1
7	RandomForestMSE_BAG_L1	-116.684536	0.757569	14.913776	0.757569	14.913776	1	True	5
8	ExtraTreesMSE_BAG_L1	-124.440876	0.587915	6.091911	0.587915	6.091911	1	True	7
9	LightGBM_BAG_L1	-130.339419	2.898045	41.739228	2.898045	41.739228	1	True	4
10	LightGBMXT_BAG_L1	-131.159177	11.013031	95.867599	11.013031	95.867599	1	True	3
11	CatBoost_BAG_L1	-133.117893	0.274751	199.198390	0.274751	199.198390	1	True	6
12	NeuralNetFastAI_BAG_L1	-144.450684	0.656267	44.405297	0.656267	44.405297	1	True	8

```
# Remember to set all negative values to zero
prediction_new_features = predictor_new_features.predict(test)
prediction_new_features[prediction_new_features < 0] = 0
```

```
# Same submitting predictions

submission_new_features = pd.read_csv("sampleSubmission.csv", parse_dates=["datetime"])
submission_new_features["count"] = prediction_new_features
submission_new_features.to_csv("submission_new_features.csv", index=False)
```

```
!kaggle competitions submit -c bike-sharing-demand -f submission_new_features.csv -m "new features"
```

```
	100% 188k/188k [00:04<00:00, 47.0kB/s]
	Successfully submitted to Bike Sharing Demand
```

```
time.sleep(5)
!kaggle competitions submissions -c bike-sharing-demand | tail -n +1 | head -n 4
```

```
	fileName                    date                 description                         status    publicScore  privateScore
	--------------------------  -------------------  ----------------------------------  --------  -----------  ------------
```

```
submission_new_features.csv  2023-06-14 12:35:54  new features                  complete  1.78974      1.78974
submission.csv               2023-06-14 12:21:18  first raw submission          complete  1.80798      1.80798
```

New Score of `1.78974`

Step 6: Hyperparameter optimization

- There are many options for hyperparameter optimization.
- Options are to change the AutoGluon higher level parameters or the individual model hyperparameters.
- The hyperparameters of the models themselves that are in AutoGluon. Those need the `hyperparameter` and `hyperparameter_tune_kwargs` arguments.

```
import autogluon.core as ag

nn_options = {  # specifies non-default hyperparameter values for neural network models
    'num_epochs': 10,  # number of training epochs (controls training time of NN models)
    'learning_rate': ag.space.Real(1e-4, 1e-2, default=5e-4, log=True),  # learning rate used in training (real-valued hyperparameter searched on log-scale)
    'activation': ag.space.Categorical('relu', 'softrelu', 'tanh'),  # activation function used in NN (categorical hyperparameter, default = first entry)
    'layers': ag.space.Categorical([100], [1000], [200, 100], [300, 200, 100]),  # each choice for categorical hyperparameter 'layers' corresponds to list of sizes for eac
    'dropout_prob': ag.space.Real(0.0, 0.5, default=0.1),  # dropout probability (real-valued hyperparameter)
}

gbm_options = {  # specifies non-default hyperparameter values for lightGBM gradient boosted trees
    'num_boost_round': 100,  # number of boosting rounds (controls training time of GBM models)
    'num_leaves': ag.space.Int(lower=26, upper=66, default=36),  # number of leaves in trees (integer hyperparameter)
}

hyperparameters = {  # hyperparameters of each model type
                    'GBM': gbm_options,
                    'NN': nn_options,  # NOTE: comment this line out if you get errors on Mac OSX
                   }  # When these keys are missing from hyperparameters dict, no models of that type are trained

time_limit = 2*60  # train various models for ~2 min
num_trials = 5  # try at most 5 different hyperparameter configurations for each type of model
search_strategy = 'auto'  # to tune hyperparameters using Bayesian optimization routine with a local scheduler

hyperparameter_tune_kwargs = {  # HPO is not performed unless hyperparameter_tune_kwargs is specified
    'num_trials': num_trials,
    'scheduler' : 'local',
    'searcher': search_strategy,
}


predictor_new_hpo = TabularPredictor(
    label="count",
    eval_metric="root_mean_squared_error",
    learner_kwargs={"ignored_columns": ["casual", "registered"]}
).fit(
    train_data=train,
    time_limit=600,
    presets="best_quality",
    hyperparameters=hyperparameters,
    hyperparameter_tune_kwargs=hyperparameter_tune_kwargs,
)
```

```
No path specified. Models will be saved in: "AutogluonModels/ag-20230614_123643/"
Presets specified: ['best_quality']
Warning: hyperparameter tuning is currently experimental and may cause the process to hang.
Stack configuration (auto_stack=True): num_stack_levels=1, num_bag_folds=8, num_bag_sets=20
Beginning AutoGluon training ... Time limit = 600s
AutoGluon will save models to "AutogluonModels/ag-20230614_123643/"
AutoGluon Version:  0.7.0
Python Version:     3.10.12
Operating System:   Linux
Platform Machine:   x86_64
Platform Version:   #1 SMP Sat Apr 29 09:15:28 UTC 2023
Train Data Rows:    10886
Train Data Columns: 12
Label Column: count
Preprocessing data ...
AutoGluon infers your prediction problem is: 'regression' (because dtype of label-column == int and many unique label-values observed).
        Label info (max, min, mean, stddev): (977, 1, 191.57413, 181.14445)
        If 'regression' is not the correct problem_type, please manually specify the problem_type parameter during predictor init (You may specify problem_type as on
Using Feature Generators to preprocess the data ...
Dropping user-specified ignored columns: ['casual', 'registered']
Fitting AutoMLPipelineFeatureGenerator...
        Available Memory:                    11109.05 MB
        Train Data (Original)  Memory Usage: 0.64 MB (0.0% of available memory)
        Inferring data type of each feature based on column values. Set feature_metadata_in to manually specify special dtypes of the features.
        Stage 1 Generators:
                Fitting AsTypeFeatureGenerator...
                        Note: Converting 2 features to boolean dtype as they only contain 2 unique values.
        Stage 2 Generators:
                Fitting FillNaFeatureGenerator...
        Stage 3 Generators:
                Fitting IdentityFeatureGenerator...
                Fitting CategoryFeatureGenerator...
                        Fitting CategoryMemoryMinimizeFeatureGenerator...
                Fitting DatetimeFeatureGenerator...
        Stage 4 Generators:
                Fitting DropUniqueFeatureGenerator...
        Types of features in original data (raw dtype, special dtypes):
                ('category', []) : 3 | ['season', 'weather', 'dayofweek']
                ('datetime', []) : 1 | ['datetime']
                ('float', [])    : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])      : 3 | ['holiday', 'workingday', 'humidity']
        Types of features in processed data (raw dtype, special dtypes):
                ('category', [])             : 3 | ['season', 'weather', 'dayofweek']
                ('float', [])                : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])                  : 1 | ['humidity']
                ('int', ['bool'])            : 2 | ['holiday', 'workingday']
                ('int', ['datetime_as_int']) : 5 | ['datetime', 'datetime.year', 'datetime.month', 'datetime.day', 'datetime.dayofweek']
        0.2s = Fit runtime
        10 features in original data used to generate 14 features in processed data.
        Train Data (Processed) Memory Usage: 0.84 MB (0.0% of available memory)
Data preprocessing and feature engineering runtime = 0.27s ...
AutoGluon will gauge predictive performance using evaluation metric: 'root_mean_squared_error'
        This metric's sign has been flipped to adhere to being higher_is_better. The metric score can be multiplied by -1 to get the metric value.
        To change this, specify the eval_metric parameter of Predictor()
AutoGluon will fit 2 stack levels (L1 to L2) ...
        WARNING: "NN" model has been deprecated in v0.4.0 and renamed to "NN_MXNET". Starting in v0.6.0, specifying "NN" or "NN_MXNET" will raise an exception. Consi
Fitting 2 L1 models ...
Hyperparameter tuning model: LightGBM_BAG_L1 ... Tuning model for up to 179.87s of the 599.71s of remaining time.
80%                                          4/5 [02:38<00:32, 32.68s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Stopping HPO to satisfy time limit...
Fitted model: LightGBM_BAG_L1/T1 ...
        -135.1137        = Validation score   (-root_mean_squared_error)
        31.59s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T2 ...
        -135.019         = Validation score   (-root_mean_squared_error)
        29.58s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T3 ...
        -133.8163        = Validation score   (-root_mean_squared_error)
        39.73s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T4 ...
        -155.9745        = Validation score   (-root_mean_squared_error)
        29.59s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T5 ...
        -135.7657        = Validation score   (-root_mean_squared_error)
        28.16s   = Training   runtime
        0.0s     = Validation runtime
Hyperparameter tuning model: NeuralNetMXNet_BAG_L1 ... Tuning model for up to 179.87s of the 440.87s of remaining time.
100%                                         5/5 [00:43<00:00, 8.79s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=24676, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
```

```
predictor_new_hpo.leaderboard(silent=True)
```

	model	score_val	pred_time_val	fit_time	pred_time_
0	WeightedEnsemble_L3	-133.448104	0.002222	252.112528	
1	LightGBM_BAG_L2/T1	-133.642158	0.000892	186.996161	
2	LightGBM_BAG_L2/T2	-133.643882	0.000862	188.729145	
3	WeightedEnsemble_L2	-133.795214	0.001288	69.862716	
4	LightGBM_BAG_L1/T3	-133.816341	0.000155	39.727154	
5	LightGBM_BAG_L2/T5	-133.980517	0.000889	196.955037	
6	LightGBM_BAG_L2/T3	-134.135447	0.000875	193.151276	
7	LightGBM_BAG_L1/T2	-135.019022	0.000130	29.580350	
8	LightGBM_BAG_L1/T1	-135.113693	0.000144	31.586029	
9	LightGBM_BAG_L1/T5	-135.765733	0.000150	28.162464	

```
# Remember to set all negative values to zero
prediction_new_hpo = predictor_new_hpo.predict(test)
prediction_new_hpo[prediction_new_hpo < 0] = 0
```

```
# Same submitting predictions
submission_new_hpo = pd.read_csv("sampleSubmission.csv", parse_dates=["datetime"])
submission_new_hpo["count"] = prediction_new_hpo
submission_new_hpo.to_csv("submission_new_hpo.csv", index=False)
```

```
!kaggle competitions submit -c bike-sharing-demand -f submission_new_hpo.csv -m "new features with hyperparameters"
```

```
100% 188k/188k [00:02<00:00, 78.0kB/s]
Successfully submitted to Bike Sharing Demand
```

```
time.sleep(5)
!kaggle competitions submissions -c bike-sharing-demand | tail -n +1 | head -n 5
```

```
fileName                    date                 description                         status    publicScore  privateScore
--------------------------  -------------------  ----------------------------------  --------  -----------  ------------
submission_new_hpo.csv      2023-06-14 12:43:37  new features with hyperparameters   complete  1.32159      1.32159
submission_new_features.csv 2023-06-14 12:35:54  new features                        complete  1.78974      1.78974
submission.csv              2023-06-14 12:21:18  first raw submission                complete  1.80798      1.80798
```

New Score of `1.32159`

New sets of hyperparameters: Smaller networks and fewer leaves

In an attempt to improve fitting, the size of gradient boosting and neural network models was reduced to a size reckoned to be more compatible with the dataset.

Since the neural networks are much larger than the problem and none of them reached a high score either on Kaggle or in relation to other methods trained by Autogluon, the networks might have an overfitting problem, which could be reduced by training smaller networks with higher dropout rates.

The same approach was applied to gradient boosting methods. The number of leaves was reduced in an attempt to reduce the possibility of overfitting.

```
time_limit = 2*60  # train various models for ~2 min
num_trials = 10  # try at most 5 different hyperparameter configurations for each type of model
search_strategy = 'auto'  # to tune hyperparameters using Bayesian optimization routine with a local scheduler

hyperparameter_tune_kwargs = {  # HPO is not performed unless hyperparameter_tune_kwargs is specified
    'num_trials': num_trials,
    'scheduler' : 'local',
    'searcher': search_strategy,
}

gbm_options = {  # specifies non-default hyperparameter values for lightGBM gradient boosted trees
    'num_boost_round': 100,  # number of boosting rounds (controls training time of GBM models)
    'num_leaves': ag.space.Int(lower=16, upper=36, default=26),  # number of leaves in trees (integer hyperparameter)
}

nn_options = {  # specifies non-default hyperparameter values for neural network models
    'num_epochs': 10,  # number of training epochs (controls training time of NN models)
    'learning_rate': ag.space.Real(1e-4, 1e-2, default=5e-4, log=True),  # learning rate used in training (real-valued hyperparameter searched on log-scale)
    'activation': ag.space.Categorical('relu', 'softrelu', 'tanh'),  # activation function used in NN (categorical hyperparameter, default = first entry)
    'layers': ag.space.Categorical([10], [15], [20, 10], [30, 20, 10]),  # each choice for categorical hyperparameter 'layers' corresponds to list of sizes for each NN lay
    'dropout_prob': ag.space.Real(0.0, 0.5, default=0.2),  # dropout probability (real-valued hyperparameter)
}


predictor_new_hpo2 = TabularPredictor(
    label="count",
    eval_metric="root_mean_squared_error",
    learner_kwargs={"ignored_columns": ["casual", "registered"]}
).fit(train_data=train,
```

```
    time_limit=600,
    presets="best_quality",
    hyperparameters=hyperparameters,
    hyperparameter_tune_kwargs=hyperparameter_tune_kwargs,
)
```

```
No path specified. Models will be saved in: "AutogluonModels/ag-20230614_131828/"
Presets specified: ['best_quality']
Warning: hyperparameter tuning is currently experimental and may cause the process to hang.
Stack configuration (auto_stack=True): num_stack_levels=1, num_bag_folds=8, num_bag_sets=20
Beginning AutoGluon training ... Time limit = 600s
AutoGluon will save models to "AutogluonModels/ag-20230614_131828/"
AutoGluon Version:  0.7.0
Python Version:     3.10.12
Operating System:   Linux
Platform Machine:   x86_64
Platform Version:   #1 SMP Sat Apr 29 09:15:28 UTC 2023
Train Data Rows:    10886
Train Data Columns: 12
Label Column: count
Preprocessing data ...
AutoGluon infers your prediction problem is: 'regression' (because dtype of label-column == int and many unique label-values observed).
        Label info (max, min, mean, stddev): (977, 1, 191.57413, 181.14445)
        If 'regression' is not the correct problem_type, please manually specify the problem_type parameter during predictor init (You may specify problem_type as on
Using Feature Generators to preprocess the data ...
Dropping user-specified ignored columns: ['casual', 'registered']
Fitting AutoMLPipelineFeatureGenerator...
        Available Memory:                    11254.44 MB
        Train Data (Original)  Memory Usage: 0.64 MB (0.0% of available memory)
        Inferring data type of each feature based on column values. Set feature_metadata_in to manually specify special dtypes of the features.
        Stage 1 Generators:
                Fitting AsTypeFeatureGenerator...
                        Note: Converting 2 features to boolean dtype as they only contain 2 unique values.
        Stage 2 Generators:
                Fitting FillNaFeatureGenerator...
        Stage 3 Generators:
                Fitting IdentityFeatureGenerator...
                Fitting CategoryFeatureGenerator...
                        Fitting CategoryMemoryMinimizeFeatureGenerator...
                Fitting DatetimeFeatureGenerator...
        Stage 4 Generators:
                Fitting DropUniqueFeatureGenerator...
        Types of features in original data (raw dtype, special dtypes):
                ('category', []) : 3 | ['season', 'weather', 'dayofweek']
                ('datetime', []) : 1 | ['datetime']
                ('float', [])    : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])      : 3 | ['holiday', 'workingday', 'humidity']
        Types of features in processed data (raw dtype, special dtypes):
                ('category', [])             : 3 | ['season', 'weather', 'dayofweek']
                ('float', [])                : 3 | ['temp', 'atemp', 'windspeed']
                ('int', [])                  : 1 | ['humidity']
                ('int', ['bool'])            : 2 | ['holiday', 'workingday']
                ('int', ['datetime_as_int']) : 5 | ['datetime', 'datetime.year', 'datetime.month', 'datetime.day', 'datetime.dayofweek']
        0.2s = Fit runtime
        10 features in original data used to generate 14 features in processed data.
        Train Data (Processed) Memory Usage: 0.84 MB (0.0% of available memory)
Data preprocessing and feature engineering runtime = 0.23s ...
AutoGluon will gauge predictive performance using evaluation metric: 'root_mean_squared_error'
        This metric's sign has been flipped to adhere to being higher_is_better. The metric score can be multiplied by -1 to get the metric value.
        To change this, specify the eval_metric parameter of Predictor()
AutoGluon will fit 2 stack levels (L1 to L2) ...
        WARNING: "NN" model has been deprecated in v0.4.0 and renamed to "NN_MXNET". Starting in v0.6.0, specifying "NN" or "NN_MXNET" will raise an exception. Consi
Fitting 2 L1 models ...
Hyperparameter tuning model: LightGBM_BAG_L1 ... Tuning model for up to 179.88s of the 599.76s of remaining time.
40%                                       4/10 [02:34<03:08, 31.45s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Stopping HPO to satisfy time limit...
Fitted model: LightGBM_BAG_L1/T1 ...
        -135.1137        = Validation score   (-root_mean_squared_error)
        33.0s    = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T2 ...
        -135.019         = Validation score   (-root_mean_squared_error)
        28.1s    = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T3 ...
        -133.8163        = Validation score   (-root_mean_squared_error)
        31.78s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T4 ...
        -155.9745        = Validation score   (-root_mean_squared_error)
        32.28s   = Training   runtime
        0.0s     = Validation runtime
Fitted model: LightGBM_BAG_L1/T5 ...
        -135.7657        = Validation score   (-root_mean_squared_error)
        29.18s   = Training   runtime
        0.0s     = Validation runtime
Hyperparameter tuning model: NeuralNetMXNet_BAG_L1 ... Tuning model for up to 179.88s of the 445.23s of remaining time.
100%                                      10/10 [01:21<00:00, 8.14s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=38049, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
```

```
File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call
```

```
predictor_new_hpo2.leaderboard(silent=True)
```

	model	score_val	pred_time_val	fit_time	pred_time_val_marginal	fit_time_marginal	stack_level	can_infer	fit_order
0	WeightedEnsemble_L3	-133.448104	0.002282	245.166129	0.001094	0.519037	3	True	12
1	LightGBM_BAG_L2/T1	-133.642158	0.000874	186.639130	0.000143	32.298705	2	True	7
2	LightGBM_BAG_L2/T2	-133.643882	0.000899	182.999728	0.000168	28.659303	2	True	8
3	WeightedEnsemble_L2	-133.795214	0.003571	61.178118	0.003254	1.296506	2	True	6
4	LightGBM_BAG_L1/T3	-133.816341	0.000169	31.777451	0.000169	31.777451	1	True	3
5	LightGBM_BAG_L2/T5	-133.980517	0.000907	185.898972	0.000176	31.558547	2	True	11
6	LightGBM_BAG_L2/T3	-134.135447	0.000876	183.689084	0.000145	29.348659	2	True	9
7	LightGBM_BAG_L1/T2	-135.019022	0.000148	28.104161	0.000148	28.104161	1	True	2
8	LightGBM_BAG_L1/T1	-135.113693	0.000131	32.997145	0.000131	32.997145	1	True	1
9	LightGBM_BAG_L1/T5	-135.765733	0.000142	29.184814	0.000142	29.184814	1	True	5
10	LightGBM_BAG_L2/T4	-149.038993	0.000870	186.931921	0.000140	32.591496	2	True	10
11	LightGBM_BAG_L1/T4	-155.974499	0.000140	32.276854	0.000140	32.276854	1	True	4

```
    data_to_wrap = f(self, X, *args, **kwargs)
```

```
prediction_new_hpo2 = predictor_new_hpo2.predict(test)
prediction_new_hpo2[prediction_new_hpo2 < 0] = 0

submission_new_hpo2 = pd.read_csv("sampleSubmission.csv", parse_dates=["datetime"])
submission_new_hpo2["count"] = prediction_new_hpo2
submission_new_hpo2.to_csv("submission_new_hpo2.csv", index=False)

!kaggle competitions submit -c bike-sharing-demand -f submission_new_hpo2.csv -m "new features with hyperparameters 2"
time.sleep(5)
!kaggle competitions submissions -c bike-sharing-demand | tail -n +1 | head -n 6
```

```
100% 188k/188k [00:02<00:00, 75.2kB/s]
Successfully submitted to Bike Sharing DemandfileName                    date                 description                       status    publicScore  privateSco
--------------------------  -------------------  -----------------------------------  --------  -----------  ------------
submission_new_hpo2.csv     2023-06-14 13:26:29  new features with hyperparameters 2  complete  1.32159      1.32159
submission_new_hpo.csv      2023-06-14 12:43:37  new features with hyperparameters    complete  1.32159      1.32159
submission_new_features.csv 2023-06-14 12:35:54  new features                        complete  1.78974      1.78974
submission.csv              2023-06-14 12:21:18  first raw submission                complete  1.80798      1.80798
```

```
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
```

Step 7: Write a Report

Refer to the markdown file for the full report

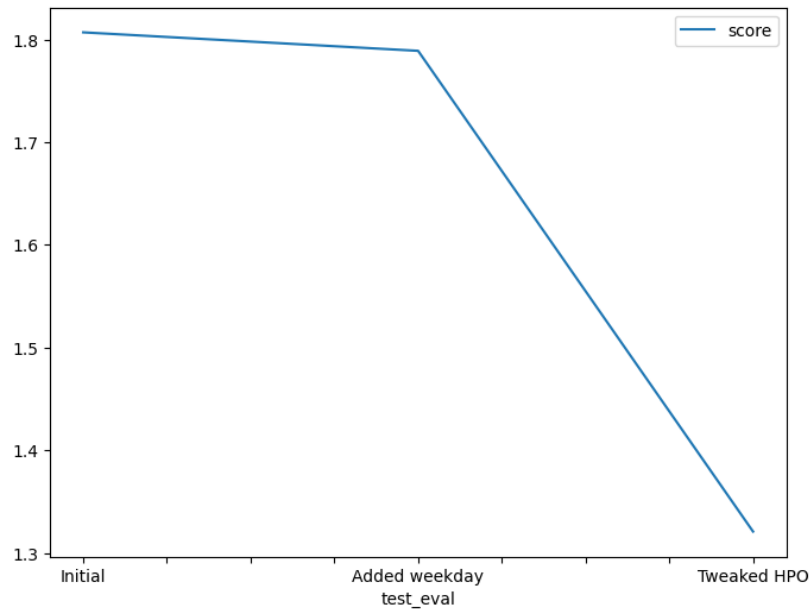
Creating plots and table for report

```
        out = self._fit(**kwargs)
```

```
# Take the 3 Kaggle scores and create a line plot to show improvement
website_output = !kaggle competitions submissions -c bike-sharing-demand | tail -n +1 | head -n 5
kaggle_scores = list(reversed([float(i[95:102]) for i in website_output[2:6]]))

fig = pd.DataFrame(
    {
        "test_eval": ["Initial", "Added weekday", "Tweaked HPO"],
        "score": kaggle_scores
    }
).plot(x="test_eval", y="score", figsize=(8, 6)).get_figure()

fig.savefig('model_test_score.png')
```

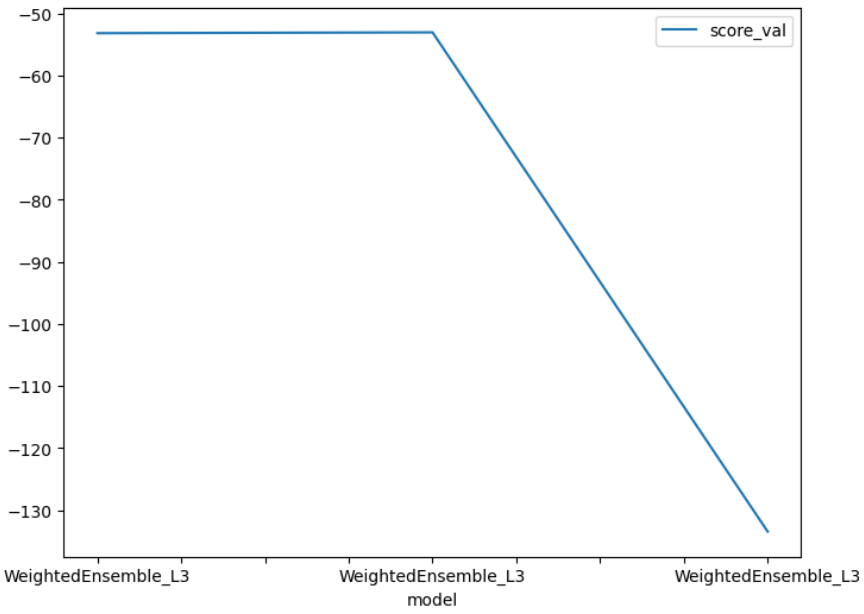



```
ValueError: 'fill_value' 'missing' is invalid. Expected a numerical value when imputing numerical data
```

```
# Take the top model score from each training run and create a line plot to show improvement
# You can create these in the notebook and save them to PNG or use some other tool (e.g. Google Sheets, Excel)
```

```
fig = (
    pd.concat(
        [
            p.leaderboard(silent=True).iloc[[0]][["model", "score_val"]]
            for p in (predictor, predictor_new_features, predictor_new_hpo)
        ]
    )
    .plot(x="model", y="score_val", figsize=(8, 6))
    .get_figure()
)

fig.savefig("model_train_score.png")
```




```
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
```

Hyperparameter table

```
ValueError: 'fill_value'=[missing] is invalid. Expected a numerical value when imputing numerical data
```

```
# The hyperparameters we tuned and the resulting Kaggle score
pd.DataFrame({
    "Model": ["Initial", "Add weekday", "HPO Tuning", "HPO Tuning 2"],
    "Method": ["Weighted Ensemble L3", "Weighted Ensemble L3", "Weighted Ensemble L3", "Weighted Ensemble L3"],
    "Kaggle Score": kaggle_scores + [1.321],
})
```

	Model	Method	Kaggle Score
0	Initial	Weighted Ensemble L3	1.807
1	Add weekday	Weighted Ensemble L3	1.789
2	HPO Tuning	Weighted Ensemble L3	1.321
3	HPO Tuning 2	Weighted Ensemble L3	1.321

```
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 103, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38146, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
```

```
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
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    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:21:21,305 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=38261, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38261, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
```

```
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:21:27,107 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=38355, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
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    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
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ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38355, ip=172.28.0.12)
```

```
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:21:35,448 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=38487, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
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    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
```

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    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
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    data_to_wrap = f(self, X, *args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
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  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:21:45,282 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=38594, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
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    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
```

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    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
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    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38594, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
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    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
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  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:21:52,134 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=38722, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
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    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
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    while self.dispatch_one_batch(iterator):
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  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
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    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
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    return [func(*args, **kwargs)
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        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:22:00,214 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=38848, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
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    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
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    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38848, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
```

```
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:22:10,891 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=38991, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
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    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
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    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
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    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=38991, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
```

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    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:22:17,374 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=39079, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
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    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
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    res = transformer.fit_transform(X, y, **fit_params)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
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    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=39079, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
```

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    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
No model was trained during hyperparameter tuning NeuralNetMXNet_BAG_L1... Skipping this model.
Completed 1/20 k-fold bagging repeats ...
Fitting model: WeightedEnsemble_L2 ... Training model for up to 360.0s of the 363.2s of remaining time.
        -133.7952       = Validation score   (-root_mean_squared_error)
        1.3s    = Training   runtime
        0.0s    = Validation runtime
        WARNING: "NN" model has been deprecated in v0.4.0 and renamed to "NN_MXNET". Starting in v0.6.0, specifying "NN" or "NN_MXNET" will raise an exception. Consi
Fitting 2 L2 models ...
Hyperparameter tuning model: LightGBM_BAG_L2 ... Tuning model for up to 162.83s of the 361.81s of remaining time.
2023-06-14 13:22:26,438 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
40%                                       4/10 [02:34<03:05, 30.92s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
        Stopping HPO to satisfy time limit...
Fitted model: LightGBM_BAG_L2/T1 ...
        -133.6422       = Validation score   (-root_mean_squared_error)
        32.3s   = Training   runtime
        0.0s    = Validation runtime
Fitted model: LightGBM_BAG_L2/T2 ...
        -133.6439       = Validation score   (-root_mean_squared_error)
        28.66s  = Training   runtime
        0.0s    = Validation runtime
Fitted model: LightGBM_BAG_L2/T3 ...
        -134.1354       = Validation score   (-root_mean_squared_error)
        29.35s  = Training   runtime
        0.0s    = Validation runtime
Fitted model: LightGBM_BAG_L2/T4 ...
        -149.039        = Validation score   (-root_mean_squared_error)
        32.59s  = Training   runtime
        0.0s    = Validation runtime
Fitted model: LightGBM_BAG_L2/T5 ...
        -133.9805       = Validation score   (-root_mean_squared_error)
        31.56s  = Training   runtime
        0.0s    = Validation runtime
Hyperparameter tuning model: NeuralNetMXNet_BAG_L2 ... Tuning model for up to 162.83s of the 207.04s of remaining time.
100%                                      10/10 [01:19<00:00, 7.60s/it]
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=41166, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
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    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41166, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
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    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:25:07,525 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
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        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=41257, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
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    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41257, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
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  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:25:16,582 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=41365, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
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    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
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    return [func(*args, **kwargs)
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    X, fitted_transformer = fit_transform_one_cached(
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
```

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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
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    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:25:25,805 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=41503, ip=172.28.0.12)
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    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
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    df = self.processor.fit_transform(df) # 2D numpy array
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
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    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
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    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41503, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:25:32,158 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=41626, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
```

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    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41626, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
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    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:25:42,144 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=41732, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
```

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    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
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    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
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    return func(*args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
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    result = self._fit_transform(X, y, _fit_transform_one)
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    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:25:49,977 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
ray::_ray_fit() (pid=41836, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
```

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    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
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  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
    model.fit(**fit_args, time_limit=time_left)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 505, in after_all_folds_scheduled
    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41836, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
    return self.func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
2023-06-14 13:25:56,270 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
```

```
ray::_ray_fit() (pid=41958, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
    train_dataset, val_dataset = self.generate_datasets(X=X, y=y, params=params, X_val=X_val, y_val=y_val)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
    train_dataset = self.process_train_data(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 511, in process_train_data
    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
    return Parallel(n_jobs=self.n_jobs)(
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
    return super().__call__(iterable_with_config)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 1088, in __call__
    while self.dispatch_one_batch(iterator):
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 901, in dispatch_one_batch
    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 597, in __init__
    self.results = batch()
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
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    res = transformer.fit_transform(X, y, **fit_params)
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    return self.fit(X, **fit_params).transform(X)
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
Traceback (most recent call last):
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 43, in model_trial
    model = fit_and_save_model(
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/model_trial.py", line 101, in fit_and_save_model
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    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/stacker_ensemble_model.py", line 154, in _fit
    return super()._fit(X=X, y=y, time_limit=time_limit, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 248, in _fit
    self._fit_folds(X=X, y=y, model_base=model_base, X_pseudo=X_pseudo, y_pseudo=y_pseudo,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
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    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=41958, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 446, in generate_datasets
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    df = self.processor.fit_transform(df) # 2D numpy array
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 727, in fit_transform
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 63, in __call__
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    self._dispatch(tasks)
  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 819, in _dispatch
    job = self._backend.apply_async(batch, callback=cb)
  File "/usr/local/lib/python3.10/dist-packages/joblib/_parallel_backends.py", line 208, in apply_async
    result = ImmediateResult(func)
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/joblib/parallel.py", line 288, in <listcomp>
    return [func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/parallel.py", line 123, in __call__
    return self.function(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 893, in _fit_transform_one
```

```
    res = transformer.fit_transform(X, y, **fit_params)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 437, in fit_transform
    Xt = self._fit(X, y, **fit_params_steps)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/pipeline.py", line 359, in _fit
    X, fitted_transformer = fit_transform_one_cached(
  File "/usr/local/lib/python3.10/dist-packages/joblib/memory.py", line 349, in __call__
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  File "/usr/local/lib/python3.10/dist-packages/sklearn/utils/_set_output.py", line 140, in wrapped
    data_to_wrap = f(self, X, *args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/base.py", line 878, in fit_transform
    return self.fit(X, **fit_params).transform(X)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/impute/_base.py", line 408, in fit
    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:26:07,423 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=42071, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/abstract/abstract_model.py", line 703, in fit
    out = self._fit(**kwargs)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/tabular/models/tabular_nn/mxnet/tabular_nn_mxnet.py", line 156, in _fit
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    result = self._fit_transform(X, y, _fit_transform_one)
  File "/usr/local/lib/python3.10/dist-packages/sklearn/compose/_column_transformer.py", line 658, in _fit_transform
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    model.fit(**fit_args, time_limit=time_left)
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  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/bagged_ensemble_model.py", line 540, in _fit_folds
    fold_fitting_strategy.after_all_folds_scheduled()
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 537, in after_all_folds_scheduled
    raise processed_exception
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    time_end_fit, predict_time, predict_1_time = self.ray.get(finished)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/client_mode_hook.py", line 105, in wrapper
    return func(*args, **kwargs)
  File "/usr/local/lib/python3.10/dist-packages/ray/_private/worker.py", line 2309, in get
    raise value.as_instanceof_cause()
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=42071, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
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    return Parallel(n_jobs=self.n_jobs)(
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```

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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
        Fitting 8 child models (S1F1 - S1F8) | Fitting with ParallelLocalFoldFittingStrategy
2023-06-14 13:26:15,212 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
ray::_ray_fit() (pid=42171, ip=172.28.0.12)
  File "/usr/local/lib/python3.10/dist-packages/autogluon/core/models/ensemble/fold_fitting_strategy.py", line 374, in _ray_fit
    fold_model.fit(X=X_fold, y=y_fold, X_val=X_val_fold, y_val=y_val_fold,
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```

```
ray.exceptions.RayTaskError(ValueError): ray::_ray_fit() (pid=42171, ip=172.28.0.12)
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    raise ValueError(
ValueError: 'fill_value'=!missing! is invalid. Expected a numerical value when imputing numerical data
No model was trained during hyperparameter tuning NeuralNetMXNet_BAG_L2... Skipping this model.
Completed 1/20 k-fold bagging repeats ...
Fitting model: WeightedEnsemble_L3 ... Training model for up to 360.0s of the 127.67s of remaining time.
2023-06-14 13:26:20,561 ERROR worker.py:400 -- Unhandled error (suppress with 'RAY_IGNORE_UNHANDLED_ERRORS=1'): The worker died unexpectedly while executing this tas
        -133.4481       = Validation score   (-root_mean_squared_error)
        0.52s    = Training   runtime
        0.0s     = Validation runtime
AutoGluon training complete, total runtime = 472.9s ... Best model: "WeightedEnsemble_L3"
TabularPredictor saved. To load, use: predictor = TabularPredictor.load("AutogluonModels/ag-20230614_131828/")
```