BigData

This app can automatically analyze big data classification, regression, and time series.

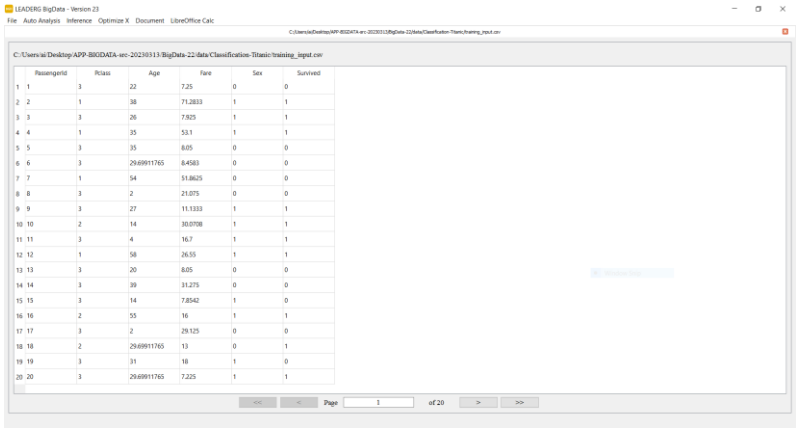
Version 20230313

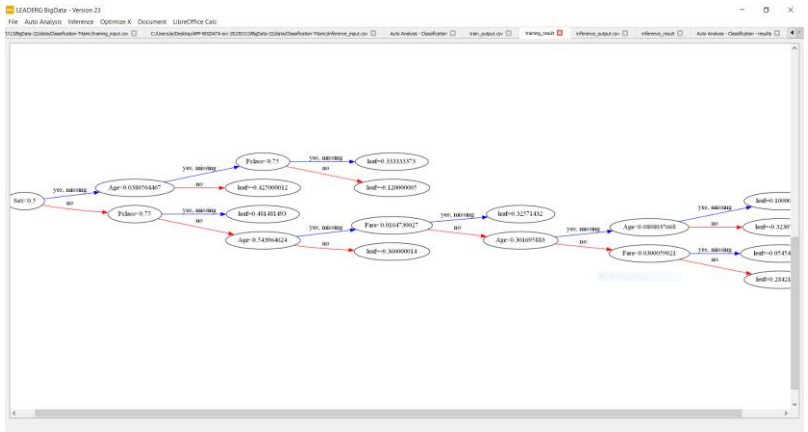
Applications

- It can be used in big data analysis, stock price inference, financial index inference, student grade forecast, air pollution forecast, Prediction of survival rate of critically ill patients, etc.

Introduction

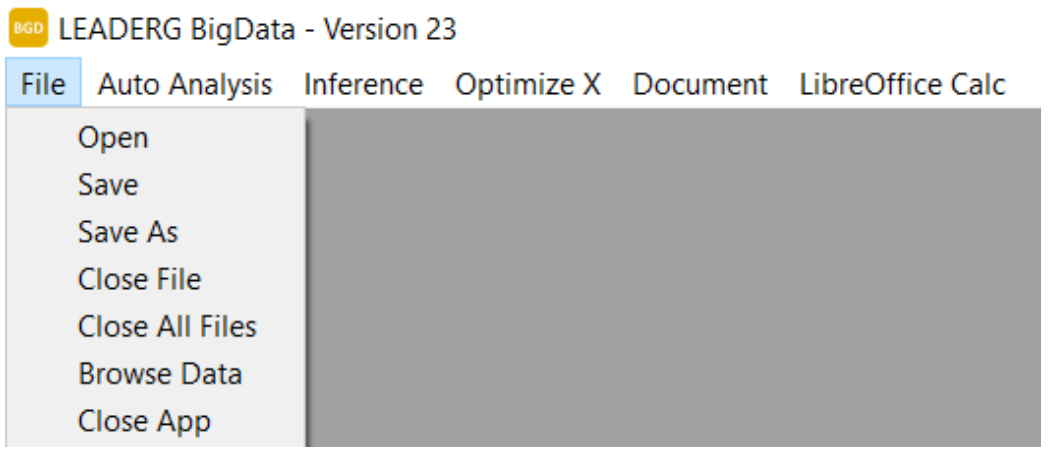
- It has three modes available:
  - Inference : The inference of a single algorithm.
  - Auto Analysis : Select multiple algorithms for automatic training and inference.
  - Optimize X : Find the set of X factors that are close to the target result Y from the set X factor value interval.





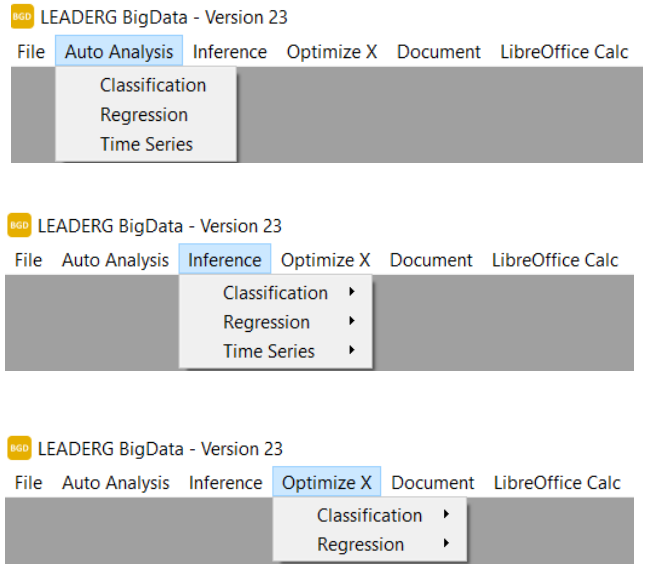
Introduction

- File
  - Open : open file.
  - Save : save the current window.
  - Save As : save the current window as a new file.
  - Close File : close file.
  - Close All Files : close fll files.
  - Browse Data : browse data folder.
  - Close App : close App.



Introduction

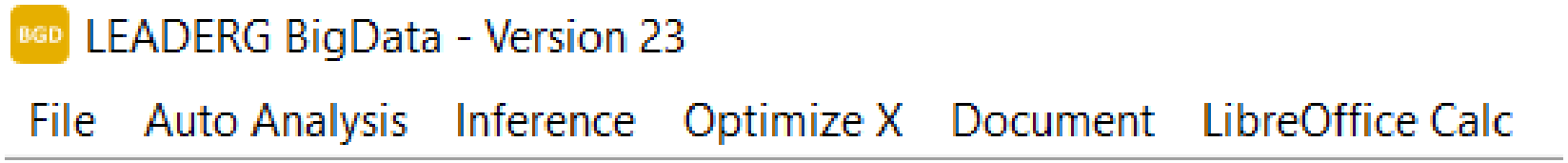
- Inference : The inference of a single algorithm.
- Auto Analysis : Select multiple algorithms for automatic training and inference.
- Optimize X : Find the set of X factors that are close to the target result Y from the set X factor value interval.

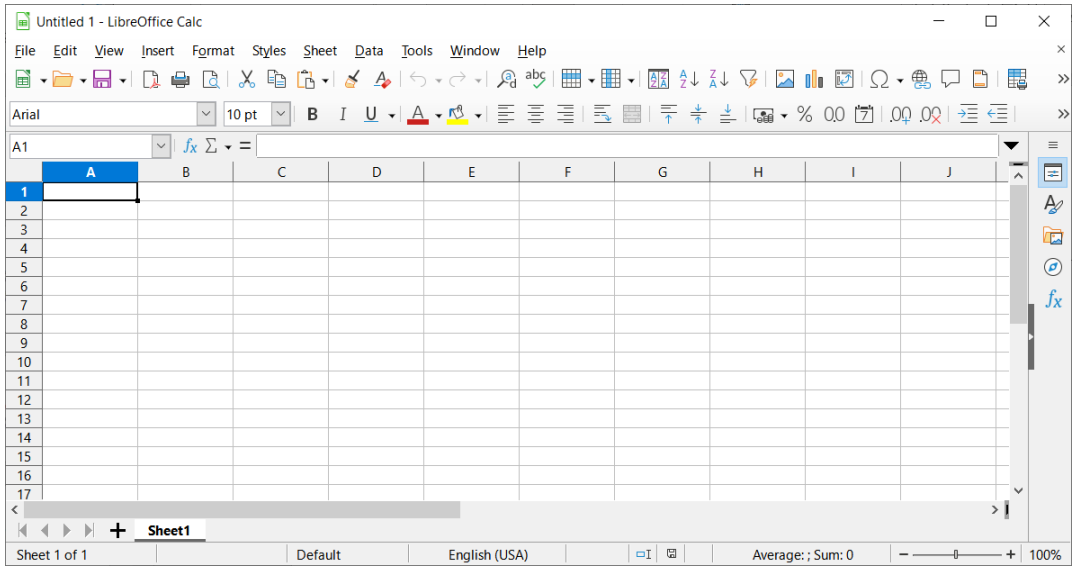


- The analysis includes the following three items:
  - Classification :
    - XGBoost、LightGBM、Gradient Boosting.
  - Regression :
    - XGBoost、LightGBM、Conv1D、DNN、Gradient Boosting、Linear、 Polynomial、PCA、 SVM.
  - TimeSeries:
    - XGBoost , LSTM.

Introduction

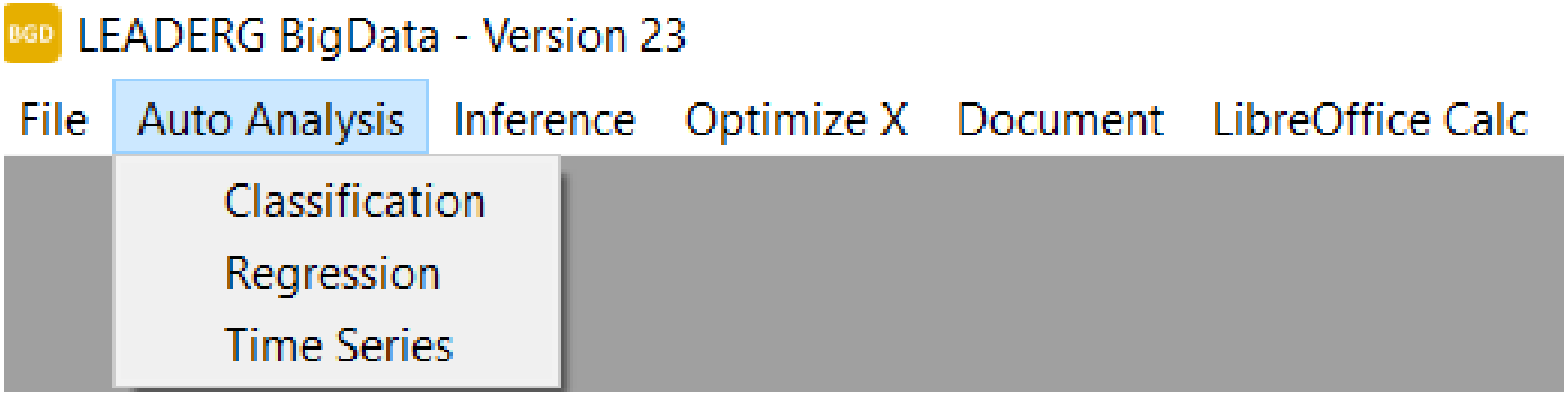
- Document : Open Document.
- Spreadsheet : Open Office.





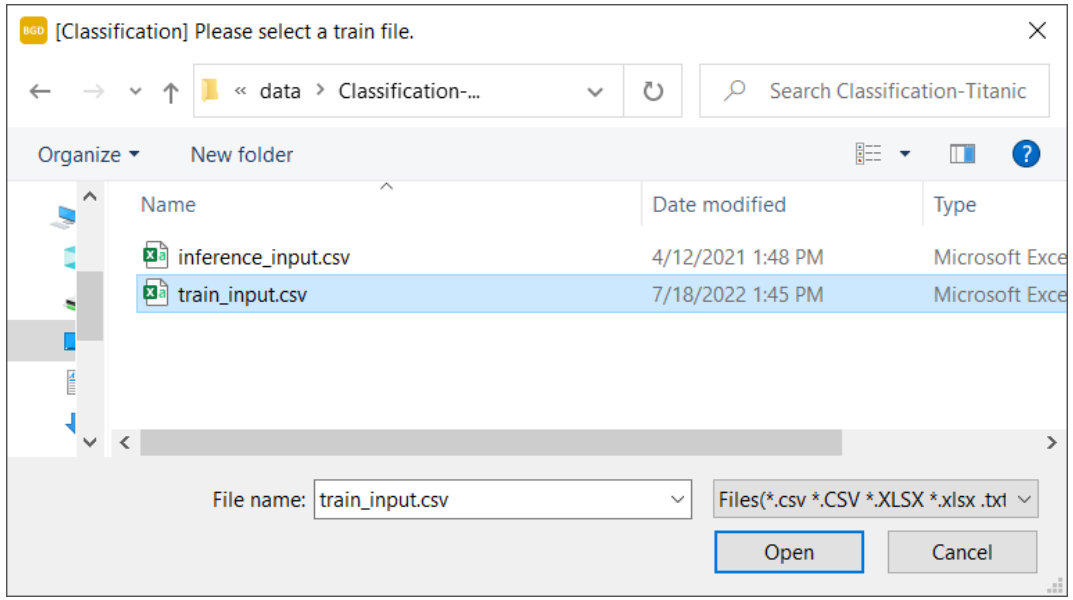
Auto Analysis – Step 1

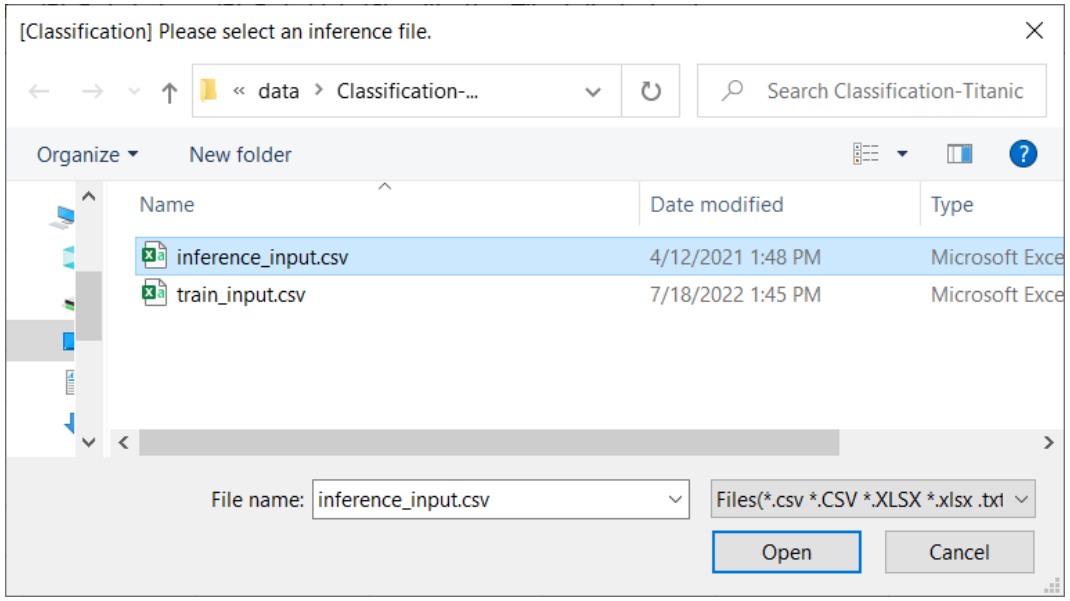
- Select an item to be automatically analyzed.



Auto Analysis – Step 2

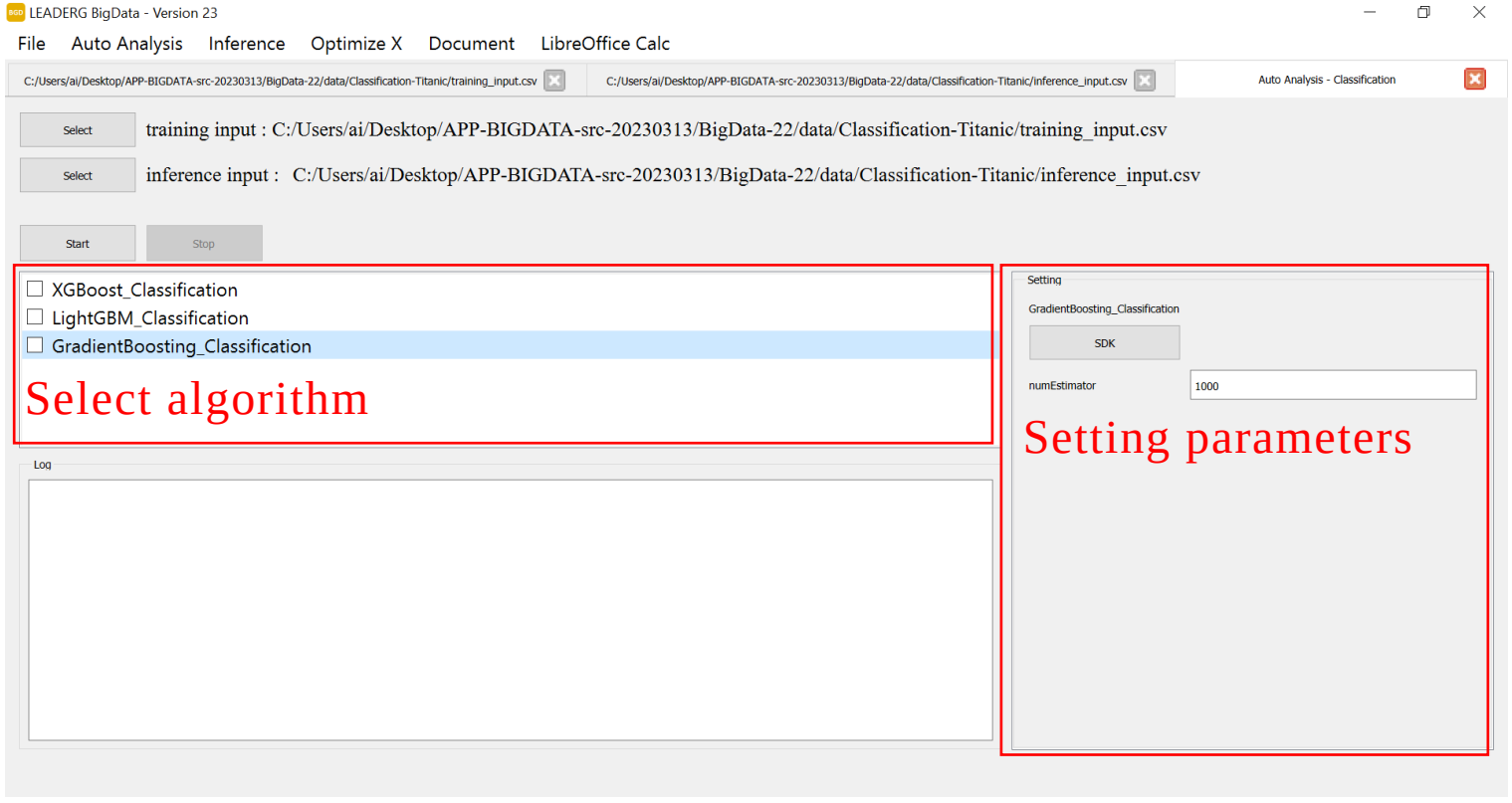
- Select the training and inference file.





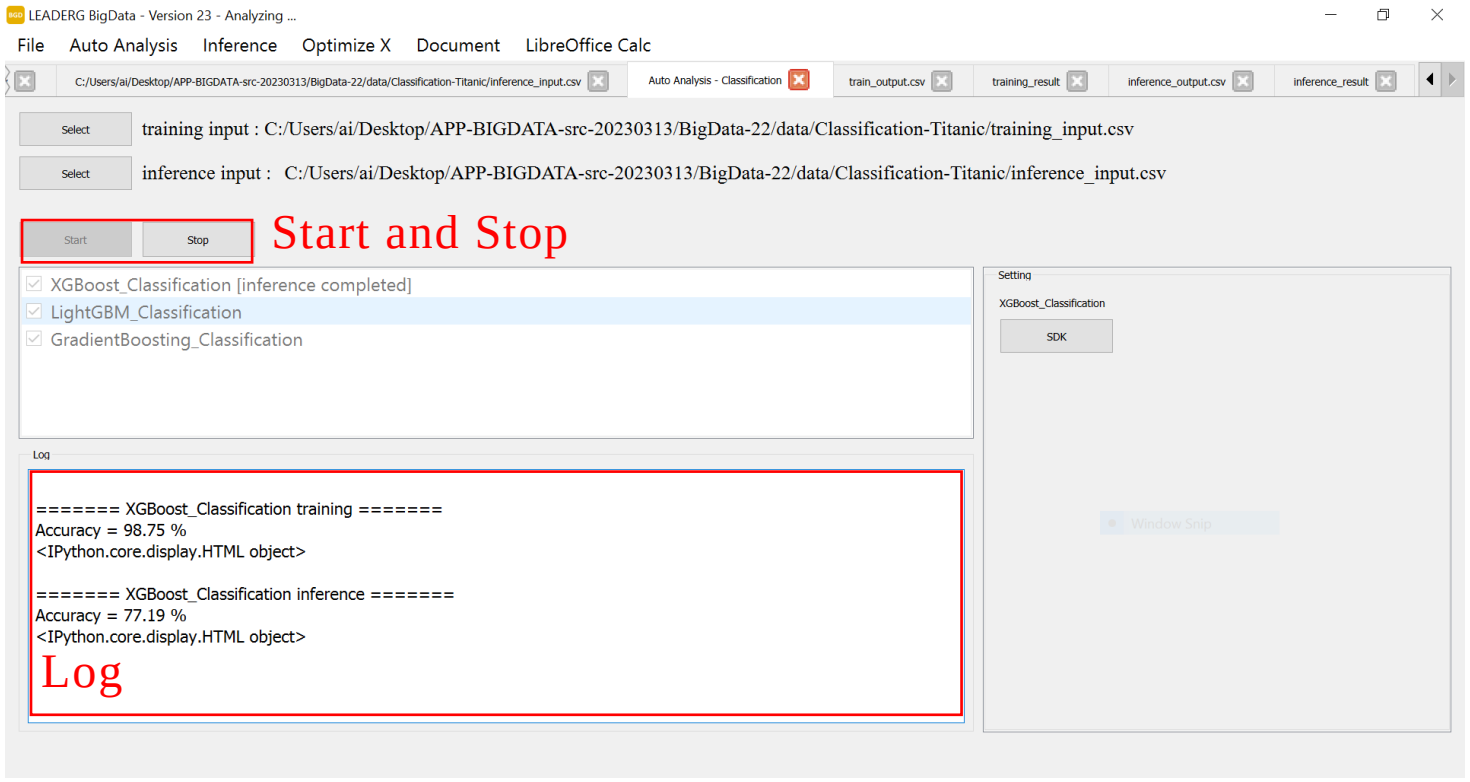
Auto Analysis – Step 3

- Select the algorithm for analysis. After selecting, please click this item and set the parameters in the Setting area on the right side of the window.



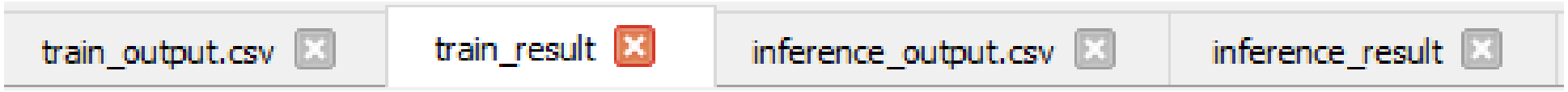
Auto Analysis – Step 4

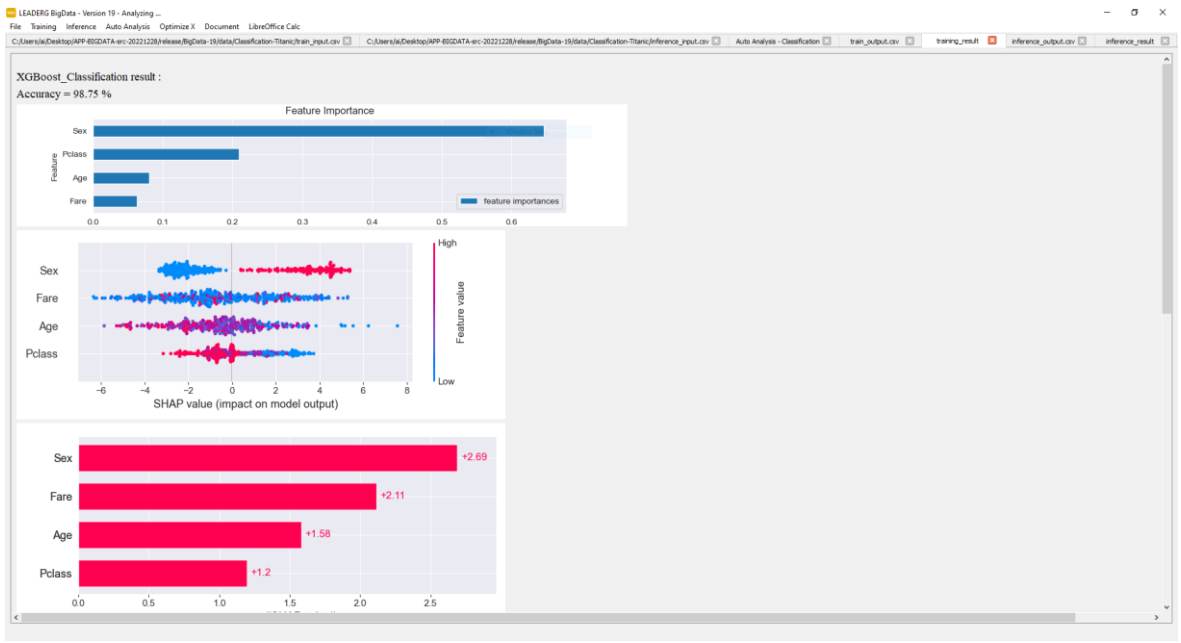
- After selecting the algorithm and setting the parameters, press Start to start the analysis. Messages during analysis will be displayed in the Log window below.



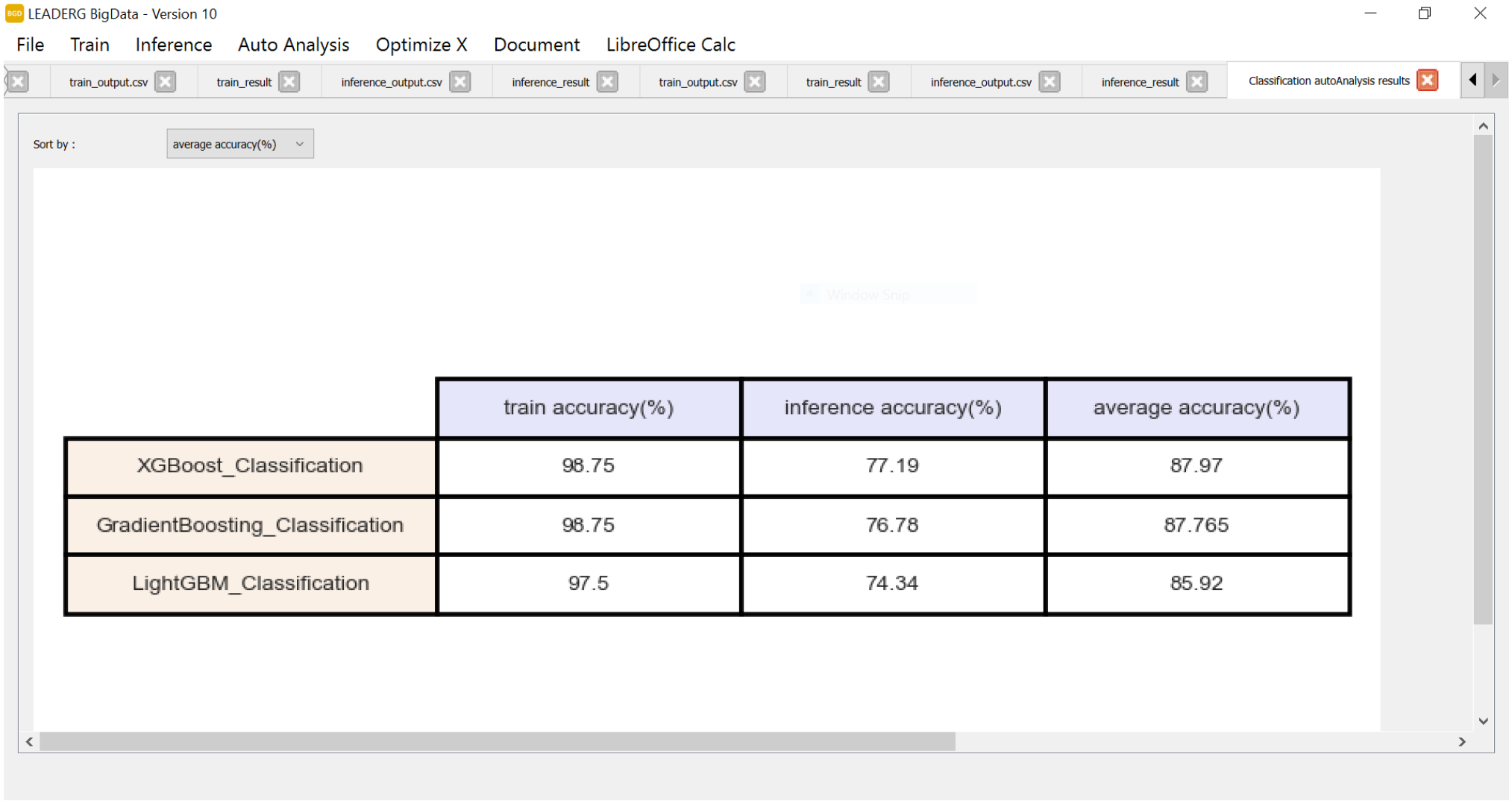
Auto Analysis – Step 5

- The training and inference are completed, and the training and inference results are output.





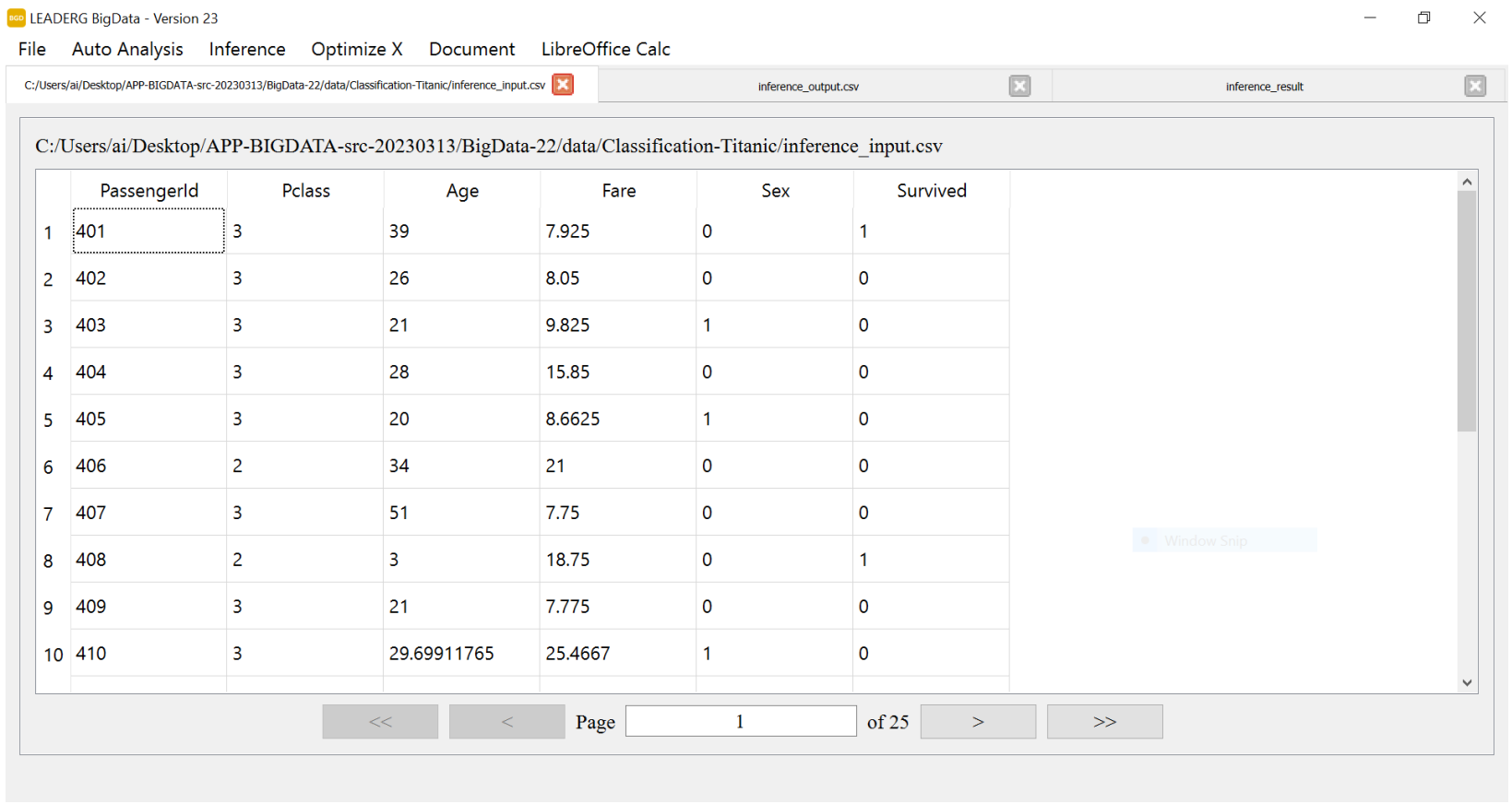
Auto Analysis – Step 5



	train accuracy(%)	inference accuracy(%)	average accuracy(%)
XGBoost_Classification	98.75	77.19	87.97
GradientBoosting_Classification	98.75	76.78	87.765
LightGBM_Classification	97.5	74.34	85.92

Inference – Step 1

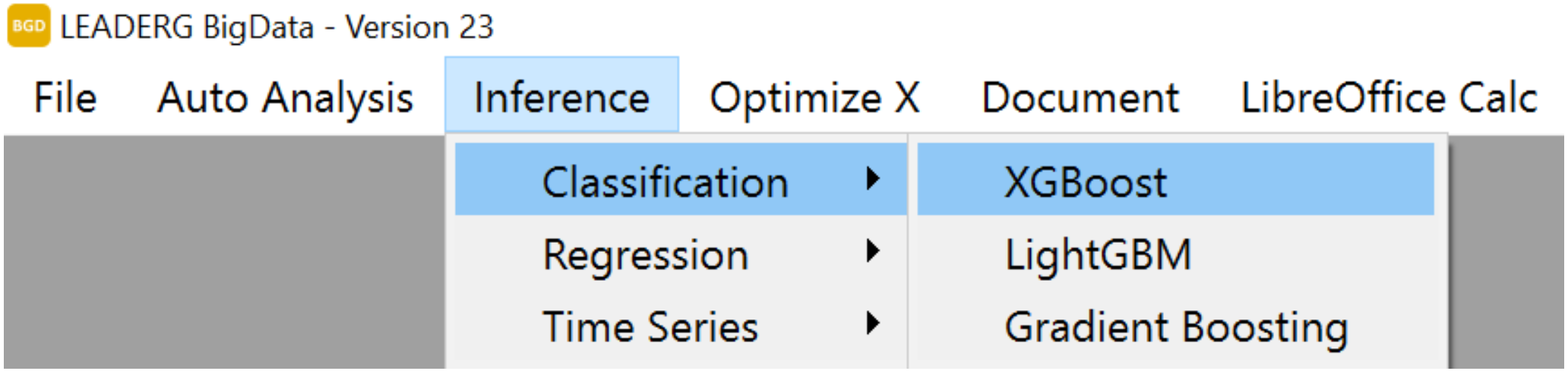
- Open the inference file. Open -> File.



	PassengerId	Pclass	Age	Fare	Sex	Survived
1	401	3	39	7.925	0	1
2	402	3	26	8.05	0	0
3	403	3	21	9.825	1	0
4	404	3	28	15.85	0	0
5	405	3	20	8.6625	1	0
6	406	2	34	21	0	0
7	407	3	51	7.75	0	0
8	408	2	3	18.75	0	1
9	409	3	21	7.775	0	0
10	410	3	29.69911765	25.4667	1	0

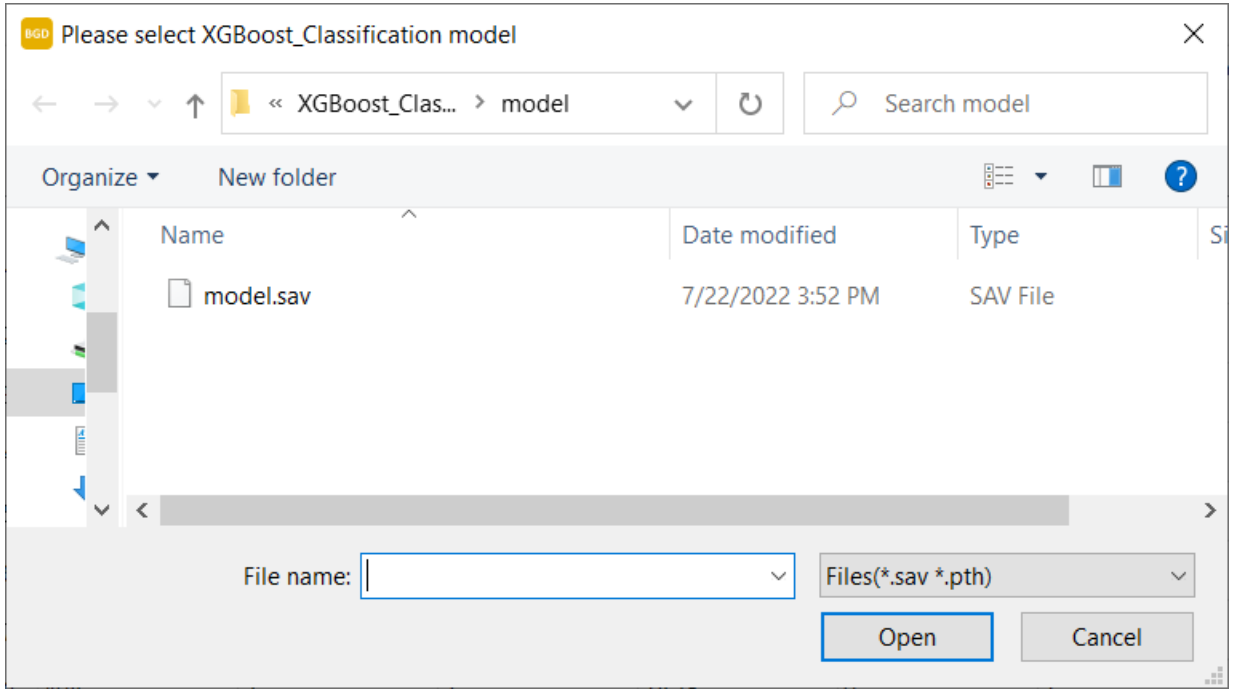
Inference – Step 2

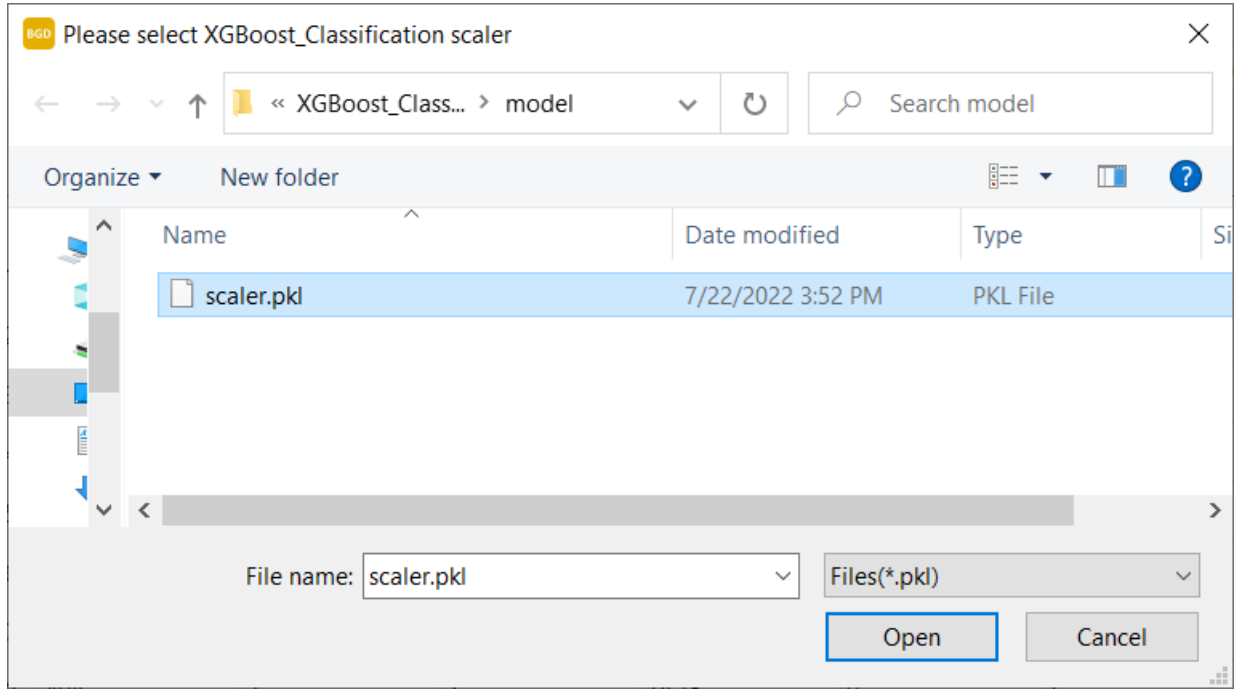
- Select the inference algorithm.



Inference – Step 3

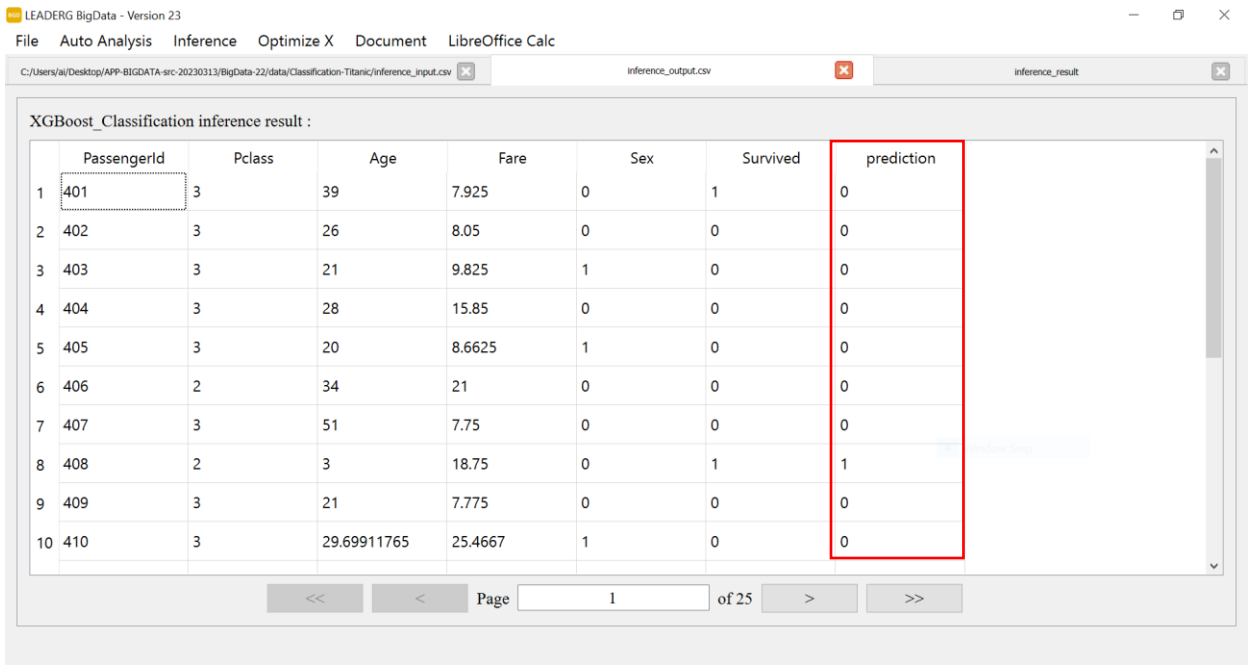
- Select the model and pkl file for inference.





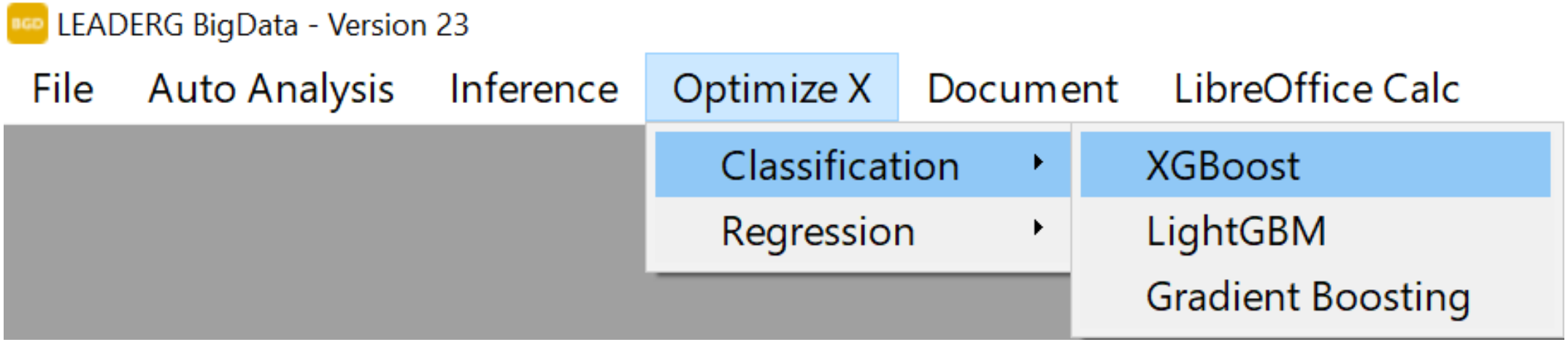
Inference – Step 4

- Get training results, including:
  - result csv : predicted results.
  - result : Display inference results such as accuracy, curve graph, etc.



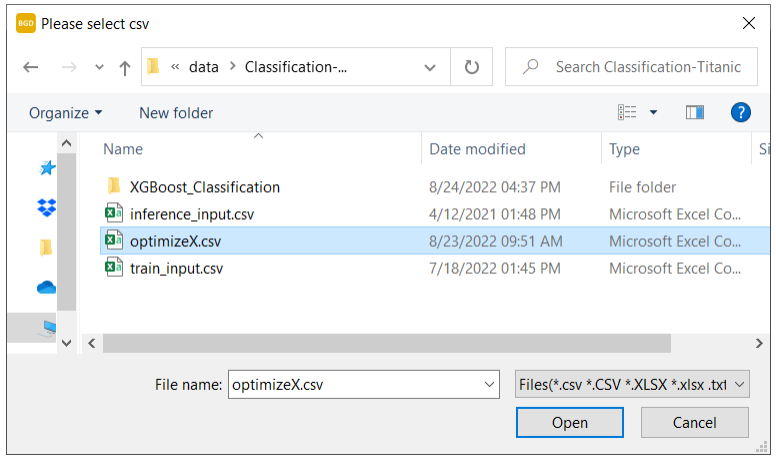
Optimize X – Step 1

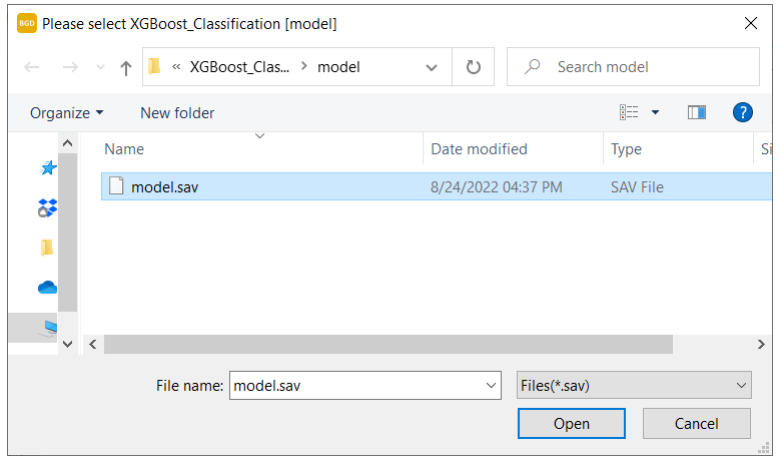
- Select an item to optimize X.

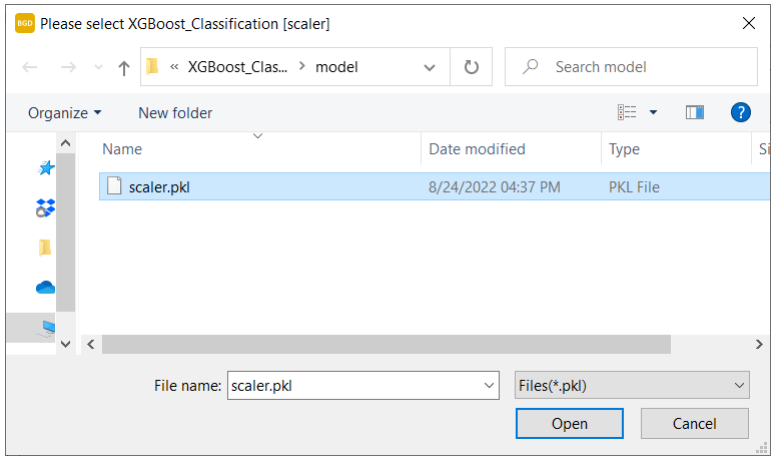


Optimize X – Step 2

- Select file, file can be
  - train_input, inference_input with headers.
  - the optimizeX file set by the previous optimize X.
- Select the model file.
- Select the pkl file.



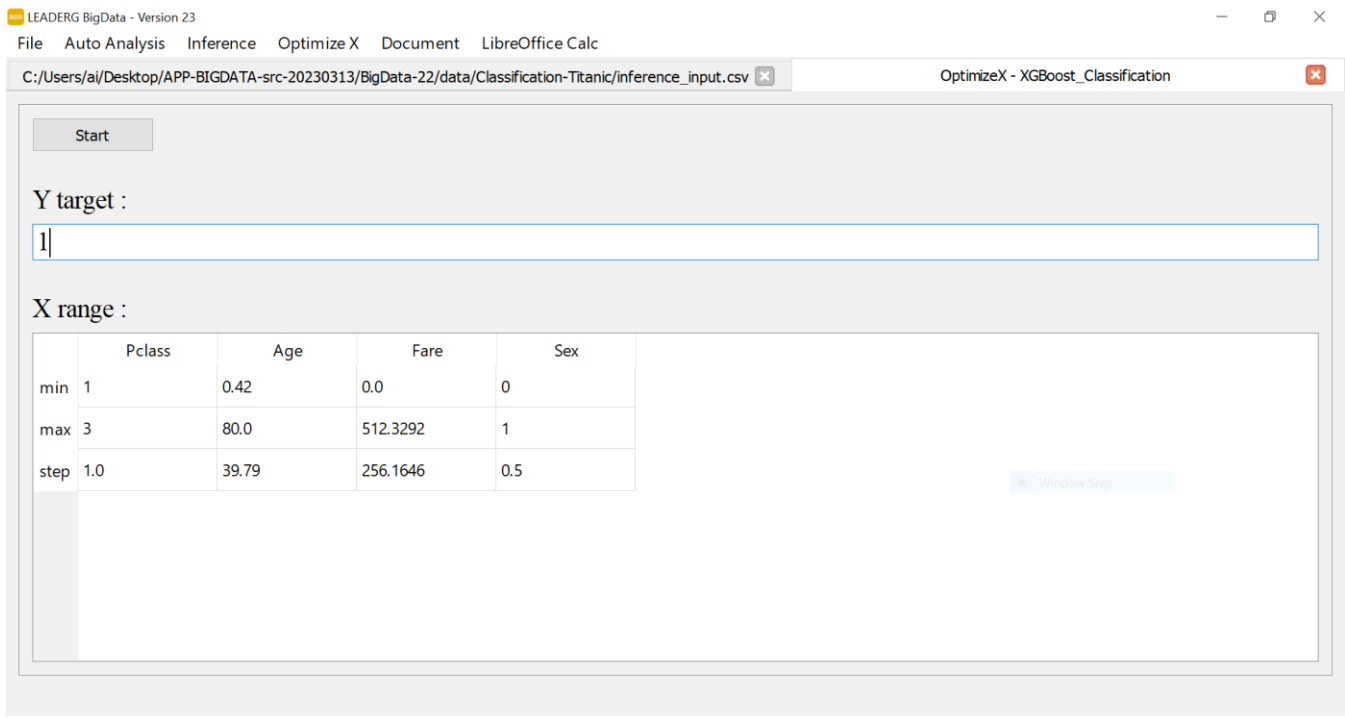




Optimize X – Step 3

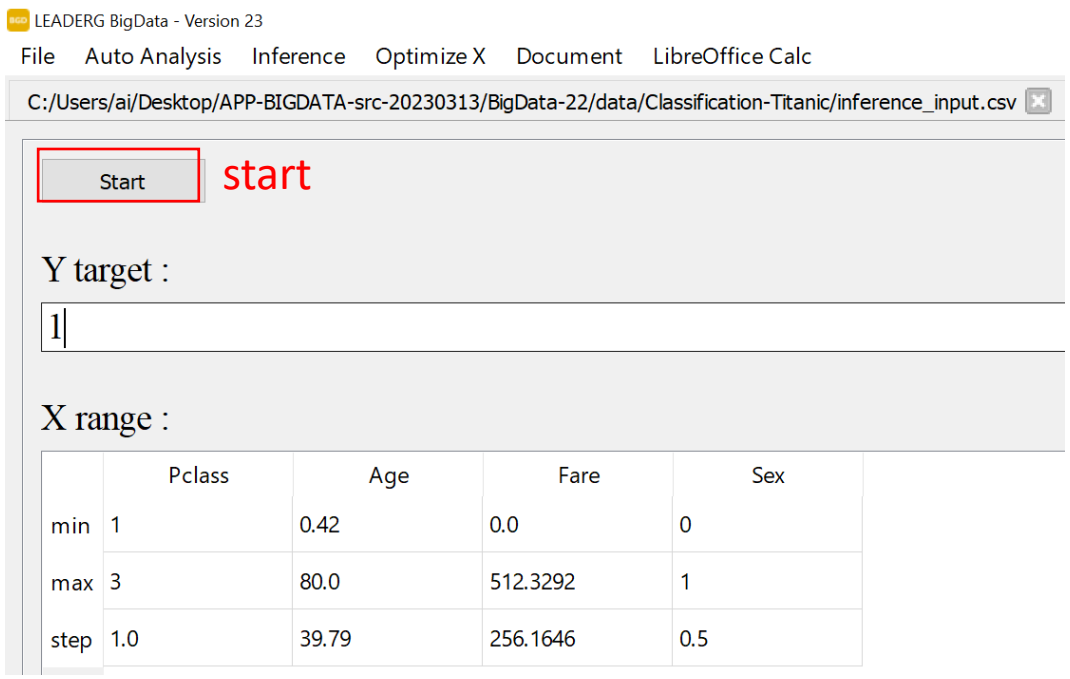
- Y target is the target value of the output.

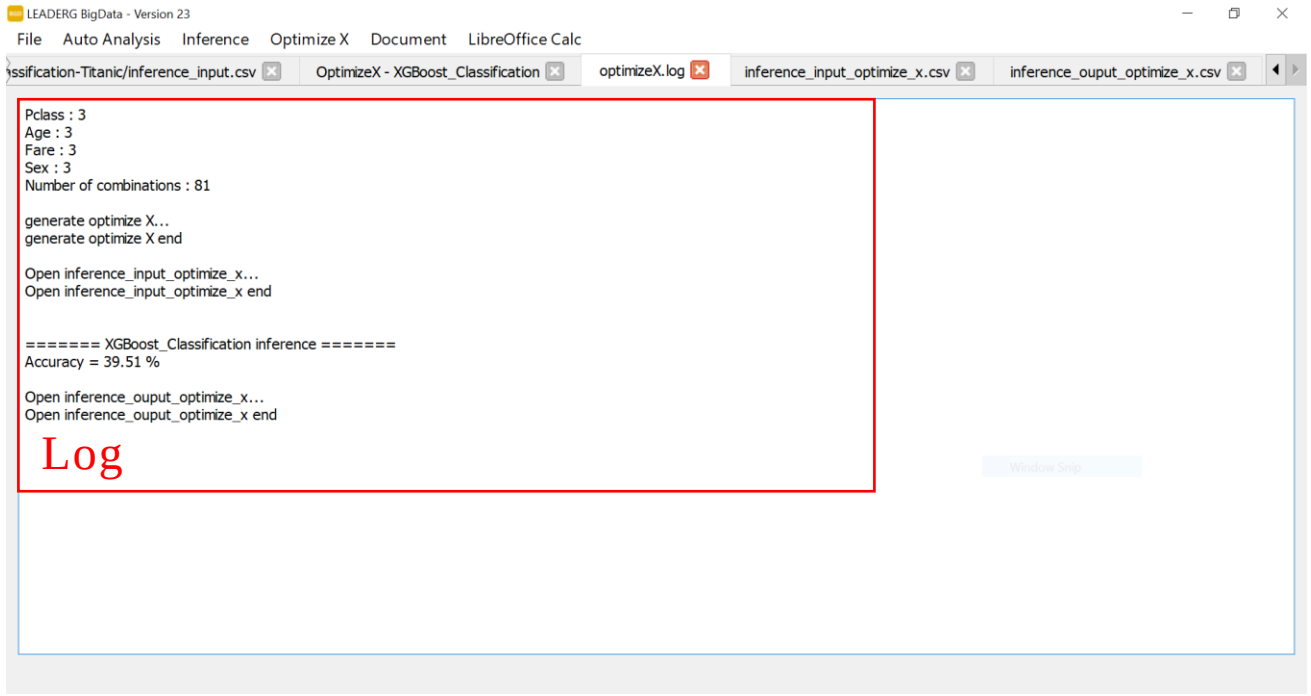
- Sets the interval for each X-factor value.
  - min is the minimum value of X.
  - max is the maximum value of X.
  - step is the interval.
  - For example, when Pcalss sets min=1, max=3, step=1, then Pclass = [1, 2, 3].



Optimize X – Step 4

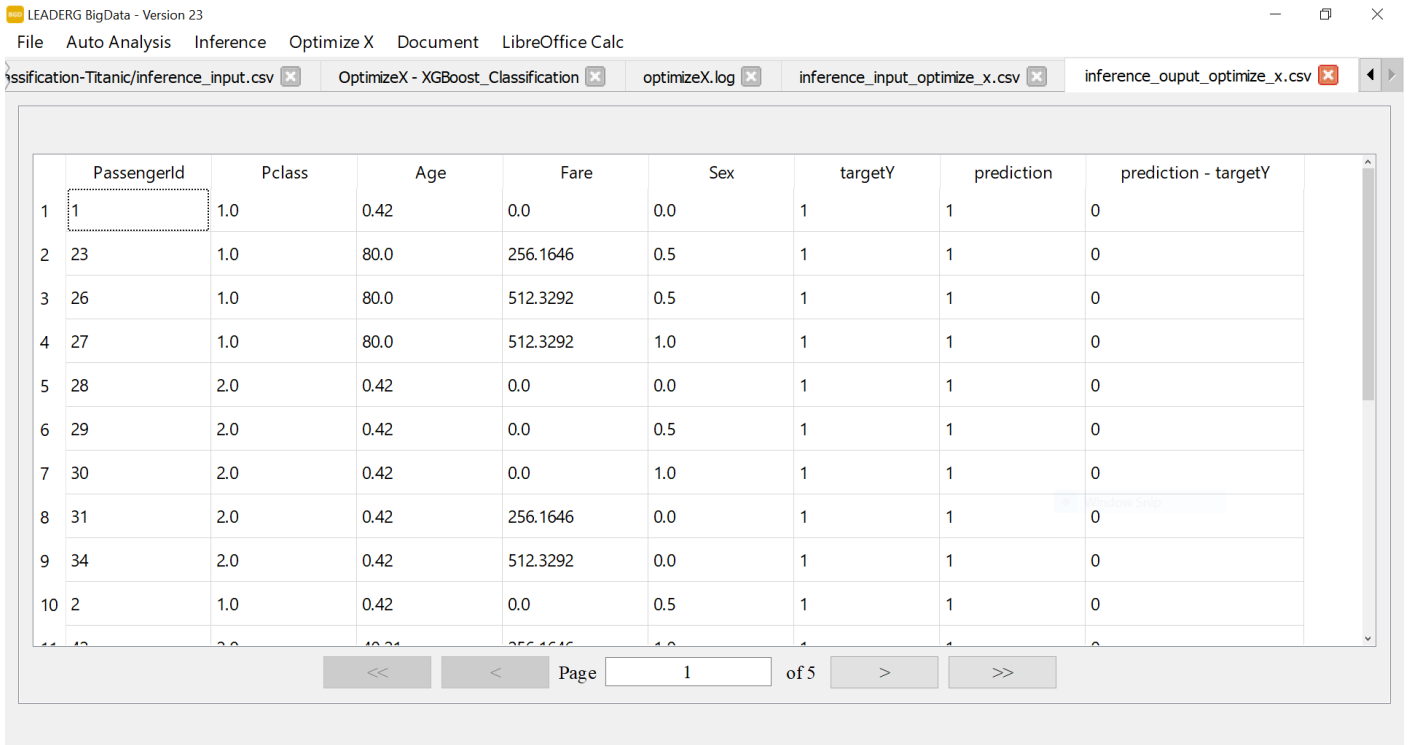
- Press Start to begin. Messages will be displayed in the Log window during the process.





Optimize X – Step 5

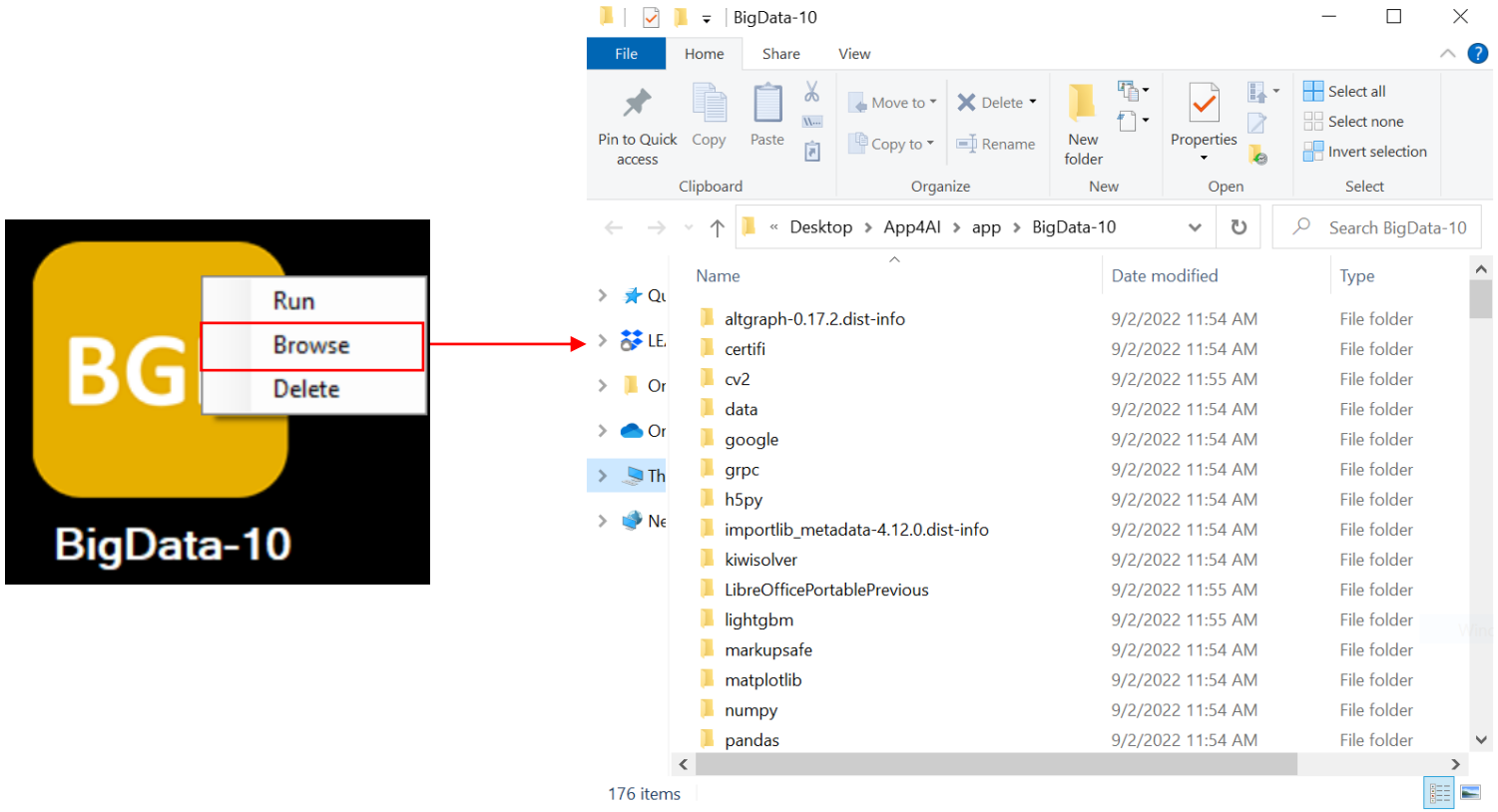
- Optimize X completion and output results.
- The data closest to the target Y value is ranked at the top.



	PassengerId	Pclass	Age	Fare	Sex	targetY	prediction	prediction - targetY
1	1	1.0	0.42	0.0	0.0	1	1	0
2	23	1.0	80.0	256.1646	0.5	1	1	0
3	26	1.0	80.0	512.3292	0.5	1	1	0
4	27	1.0	80.0	512.3292	1.0	1	1	0
5	28	2.0	0.42	0.0	0.0	1	1	0
6	29	2.0	0.42	0.0	0.5	1	1	0
7	30	2.0	0.42	0.0	1.0	1	1	0
8	31	2.0	0.42	256.1646	0.0	1	1	0
9	34	2.0	0.42	512.3292	0.0	1	1	0
10	2	1.0	0.42	0.0	0.5	1	1	0

Browse the APP folder

- From the App4AI interface, find the target icon, right-click, and then click Browse to browse the APP folder.



Reference

- Please refer to the readme.txt in the APP folder.
- LEADERG AppForAI : https://www.leaderg.com/appforai-windows
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