**Requirements**

Python 3.9

sklearn

numpy

scikit-learn

matplotlib

Pandas

collections

Imblearn

Time

openpyxl

logitboost

lightgbm

**Data**

The data of this study is confidential.

**Model:**

The file of catboostcalss.py is used to run the CatBoost model.

The file of catboostcalss2.py is used to run the CatBoost model with new data.

The file of DecisionTreeClass.py is used to run the DT model.

The file of DecisionTreeClass2.py is used to run the DT model with new data.

The file of GBDT\_CALSS.py is used to run the GBDT model.

The file of GBDT\_CALSS2.py is used to run the GBDT model with new data.

The file of KNN.py is used to run the KNN model.

The file of KNN2.py is used to run the KNN model with new data.

The file of lightgbm-calss.py is used to run the LightGBM model.

The file of lightgbm-calss 2.py is used to run the LightGBM model with new data.

The file of logitboost\_class.py is used to run the LogitBoost model.

The file of logitboost\_class 2.py is used to run the LogitBoost model with new data.

The file of SVMClassifier.py is used to run the SVM model.

The file of SVMClassifier2.py is used to run the SVM model with new data.

The file of XGB.py is used to run the XGBoost model.

The file of XGB-2.py is used to run the XGBoost model with new data.

The file of MAHAKILNEW.py is used to run the MAHAKIL model.

The file of SMOTE.py is used to run the SMOTE model.

The file of GA-Catboost.py is used to run the CatBoost model optimized by Genetic Algorithm.

The file of GA-GBDT.py is used to run the GBDT model optimized by Genetic Algorithm.

The file of GA-LightGBM.py is used to run the LightGBM model optimized by Genetic Algorithm.

The file of GA-Logitboost.py is used to run the LogitBoost model optimized by Genetic Algorithm.

The file of GA-XGBoost.py is used to run the XGBoost model optimized by Genetic Algorithm.

The file of Catboost\_CALSS.py is used to run the CatBoost model and find the optimal value of n\_estimators.

The file of GBDT\_CALSS.py is used to run the GBDT model and find the optimal value of n\_estimators.

The file of LightGBM\_CALSS.py is used to run the LightGBM model and find the optimal value of n\_estimators.

The file of Logitboost\_CALSS.py is used to run the LogitBoost model and find the optimal value of n\_estimators.

The file of XGBoost\_CALSS.py is used to run the XGBoost model and find the optimal value of n\_estimators.