**GBDT调参结果**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameters | precision | recall | F1-score | accuaracy | AUC score |
| 默认 | 0.76 | 0.75 | 0.75 | 0.754 | 0.828587 |
| n\_estinators=960 | 0.79 | 0.79 | 0.79 | 0.7886 | 0.870009 |
| n\_estinators=1000 | 0.77 | 0.77 | 0.77 | 0.769 | 0.844818 |
| max\_detpth=11 | 0.77 | 0.77 | 0.77 |  |  |
| min\_samples\_split=100  min\_samples\_leaf=20 | 0.77 | 0.77 | 0.77 | 0.7701 | 0.852021 |
| min\_samples\_split=60  min\_samples\_leaf=5 | 0.77 | 0.77 | 0.77 | 0.768 | 0.851794 |
| max\_feature=19 | 0.78 | 0.78 | 0.78 | 0.7774 | 0.855699 |
| max\_feature=98 | 0.79 | 0.78 | 0.78 | 0.7844 | 0.864416 |
| max\_feature=220 | 0.79 | 0.79 | 0.79 | 0.7893 | 0.865815 |
| max\_feature=316 | 0.79 | 0.79 | 0.79 | 0.7904 | 0.867658 |
| max\_feature=313 | 0.79 | 0.79 | 0.79 | 0.7896 | 0.869456 |
| subsample=1.0 | 0.79 | 0.79 | 0.79 | 0.7907 | 0.867546 |
| subsample=0.93 | 0.80 | 0.79 | 0.79 | 0.7923 | 0.868046 |
| learning\_rate=0.1  N\_estimator=1000 | 0.80 | 0.79 | 0.79 | 0.7923 | 0.868046 |
| learning\_rate=0.05  N\_estimator=2000 | 0.80 | 0.79 | 0.79 | 0.7939 | 0.870863 |
| learning\_rate=0.01  N\_estimator=10000 | 0.80 | 0.80 | 0.80 | 0.7971 | 0.873339 |
| learning\_rate=0.005  N\_estimator=20000 | 0.80 | 0.80 | 0.79 | 0.7952 | 0.873699 |

以上，GradientBoostingClassifier(learning\_rate=0.01, n\_estimators=10000, max\_depth=11,

min\_samples\_leaf=20, min\_samples\_split=100, max\_features=313, subsample=0.93, random\_state=10)

模型保存在C:\CIEL\code\bagging-light-classification\GBDT\_clf\result\20171108-02