```
features extracted
training set and test set ready
training set: (2380, 406)
test set: (1047, 406)

classifier result
--------------------------------------------------
activity  1.0
sensitivity:      99.89539748953975
specificity:      100.0
auc:      1.0
--------------------------------------------------
activity  2.0
sensitivity:      100.0
specificity:      98.91304347826087
auc:      1.0
--------------------------------------------------
activity  3.0
sensitivity:      100.0
specificity:      100.0
auc:      1.0
--------------------------------------------------
activity  4.0
sensitivity:      99.68553459119497
specificity:      100.0
auc:      1.0
--------------------------------------------------
activity  5.0
sensitivity:      100.0
specificity:      96.73913043478261
auc:      1.0
--------------------------------------------------
activity  6.0
sensitivity:      99.58115183246073
specificity:      100.0
auc:      0.9998804916913271
--------------------------------------------------
activity  7.0
sensitivity:      100.0
specificity:      100.0
auc:      0.9999999999999999
--------------------------------------------------
activity  8.0
sensitivity:      100.0
specificity:      93.47826086956522
auc:      0.9997609833826543
--------------------------------------------------
activity  9.0
sensitivity:      99.79057591623037
specificity:      100.0
auc:      0.9999772365126338
--------------------------------------------------
activity  10.0
sensitivity:      95.39267015706807
specificity:      100.0
auc:      0.9952765763715001
--------------------------------------------------
activity  11.0
sensitivity:      100.0
specificity:      51.08695652173913
```

```
auc:      0.9966594582290007
--------------------------------------------------
activity  12.0
sensitivity:      99.9015748031496
specificity:      100.0
auc:      0.9998729997459994
--------------------------------------------------
f1_score  94.45277056453352
accuracy  94.7468958930277
micro-average ROC AUC:    0.9986302794448869
macro-average ROC AUC:    0.9993028305674463
```

```
/usr/lib/python3.7/site-packages/matplotlib/cbook/__init__.py:424: Mat
plotlibDeprecationWarning:
Passing one of 'on', 'true', 'off', 'false' as a boolean is deprecate
d; use an actual boolean (True/False) instead.
  warn_deprecated("2.2", "Passing one of 'on', 'true', 'off', 'false'
as a "
```

Out[3]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f6c54569828>
```