代码:

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# 开发日期：2024/3/12
import numpy as np
from matplotlib import pyplot as plt
from sklearn.metrics import roc_curve,
roc_auc_score, auc


# 输入数据
y_true = np.asarray(
    [[0, 0, 1], [0, 1, 0], [1, 0, 0], [0, 0, 1],
[1, 0, 0], [0, 1, 0], [0, 1, 0], [0, 1, 0], [0, 0,
1], [0, 1, 0]])
y_score = np.asarray(
    [[0.1, 0.2, 0.7], [0.1, 0.6, 0.3], [0.5, 0.2,
0.3], [0.1, 0.1, 1.8], [0.4, 0.2, 0.4], [0.6, 0.3,
0.1],
     [0.4, 0.2, 0.4], [0.4, 0.1, 0.5], [0.1, 0.1,
0.8], [0.1, 0.8, 0.1]])

n_classes = len(y_true[1, :])
fpr = dict()
tpr = dict()
auc_roc = dict()

for i in range(n_classes):
    fpr[i], tpr[i], th = roc_curve(y_true[:, i],
y_score[:, i])
    auc_roc[i] = roc_auc_score(y_true[:, i],
y_score[:, i])

fpr_grid = np.linspace(0.0, 1.0, 100)
mean_tpr = np.zeros_like(fpr_grid)

for i in range(n_classes):
    mean_tpr += np.interp(fpr_grid, fpr[i], tpr[i])

mean_tpr /= n_classes
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fpr["macro"] = fpr_grid
tpr["macro"] = mean_tpr
auc_roc["macro"] = auc(fpr["macro"], tpr["macro"])

# 绘制曲线

plt.figure(figsize=(20,20))
for i in range(n_classes):
    plt.subplot(2,2,i+1)
    plt.plot(fpr[i], tpr[i])
    t = "ROC Curve " + str(i + 1)
    plt.title(t)
    plt.xlabel('FPR')
    plt.ylabel('TPR')
plt.show()

plt.plot(fpr["macro"],tpr["macro"])
plt.title("ROC Curve 4")
plt.xlabel('FPR')
plt.ylabel('TPR')
plt.show()
```