```python
import numpy as np
import matplotlib.pyplot as plt
from sklearn.metrics import *

y_true=np.array([[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_pred=np.array([[0.1,0.2,0.7],[0.1,0.6,0.3],[0.5,0.2,0.3],[0.1,0.1,0.8],[0.4,0.2,0.4],[0.6,0.3,0.1],
                 [0.4,0.2,0.4],[0.4,0.1,0.6],[0.1,0.1,0.8],[0.1,0.8,0.1]])
n_classes= y_true.shape[1]
#计算 ROC 曲线和 ROC 面积
fpr=dict()
tpr=dict()
roc_auc=dict()

#计算每个类的 ROC 曲线和 AUC
for i in range(n_classes):
    fpr[i],tpr[i],_=roc_curve(y_true[:,i],y_pred[:,i])
    roc_auc[i]=auc(fpr[i],tpr[i])

plt.figure()
colors=['blue','green','red']
for i,color in zip(range(n_classes),colors):
    plt.plot(fpr[i],tpr[i],color=color,lw=2,
             label='{0} class of ROC(AUC={1:0.2f})'.format(i,roc_auc[i]))
    #plt.fill_between(fpr[i],tpr[i],color=colors[i],alpha=0.2)
plt.plot([0,1],[0,1],'k--',lw=2)#绘制一条虚线的对角线，k--即为虚线，lw 为线宽
#设置坐标轴的范围
plt.xlim([-0.05,1.0])
plt.ylim([-0.05,1.05])
plt.xlabel('FPR')
plt.ylabel('TPR')
plt.title('All classes of ROC curve')
plt.legend(loc="lower right")
plt.show()

#计算 micro-roc
fpr["micro"],tpr['micro'],_=roc_curve(y_true.ravel(),y_pred.ravel())
roc_auc['micro']=auc(fpr['micro'],tpr['micro'])
plt.plot(fpr['micro'],tpr['micro'],
         label='micro-average ROC curve(area={0:0.2f})'
         ''.format(roc_auc['micro']),color='deeppink',linestyle=':',linewidth=2)
```

```python
plt.xlabel('FPR')
plt.ylabel('TPR')
plt.title('micro-average of ROC curve')
plt.legend(loc="lower right")
plt.show()
```


All classes of ROC curve

micro-average of ROC curve