
tensorflow / tensorflow
TensorFlow: Open sou
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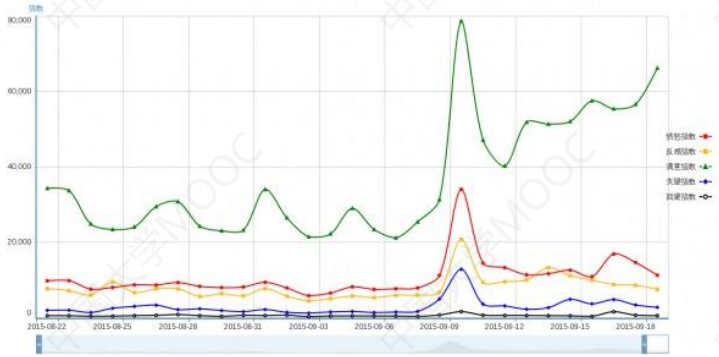
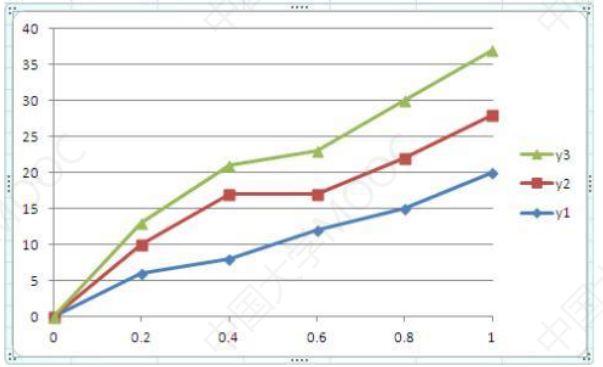
Branches
master

6.3折线图和柱状图

- **折线图**（Line Chart）：散点图的基础上，**将相邻的点用线段相连接**
  - 描述变量变化的趋势



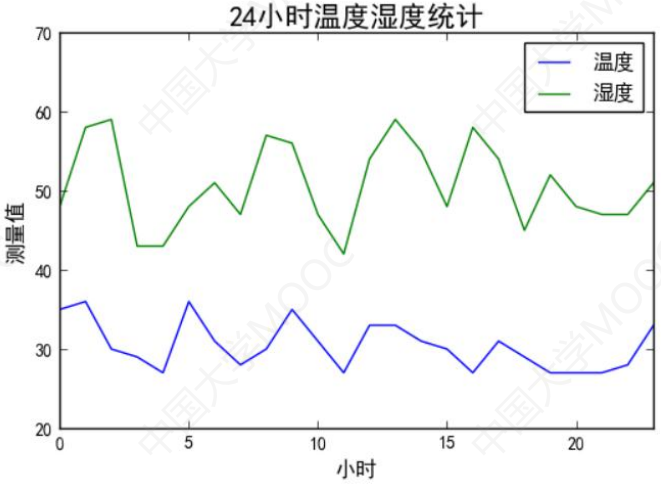


plot()函数

plot(**x, y,** color, marker, label, linewidth, markersize)

参 数	说 明	默认值
x	数据点的x坐标	0,1,2,3...
y	数据点的y坐标	不可省略
color	数据点的颜色	
marker	数据点的样式	’o’（圆点）
label	图例文字	
linewidth	折线的宽度	
markersize	数据点的大小	

例：绘制温度和湿度数据的折线图



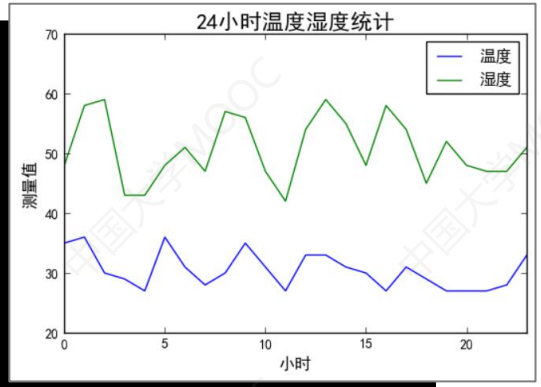
- 生成随机数列

```
n=24
y1 = np.random.randint(27,37,n)
y2 = np.random.randint(40,60,n)
```

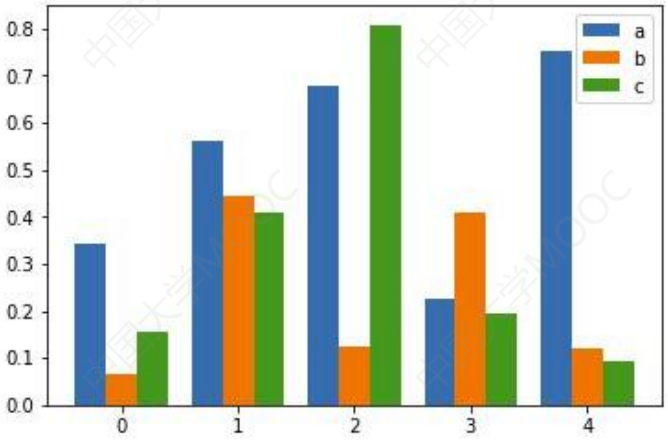
- 绘制折线图

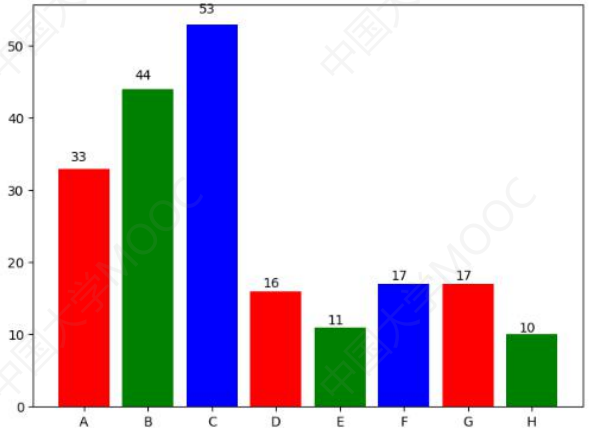
```
plt.plot(y1, label='温度')
plt.plot(y2, label='湿度')
```

```python
import matplotlib.pyplot as plt
import numpy as np

plt.rcParams['font.sans-serif'] = 'SimHei'

n = 24
y1 = np.random.randint(27,37,n)
y2 = np.random.randint(40,60,n)

plt.plot(y1, label='温度')
plt.plot(y2, label='湿度')

plt.xlim(0,23)
plt.ylim(20,70)
plt.xlabel('小时', fontsize=12)
plt.ylabel('测量值', fontsize=12)

plt.title('24小时温度湿度统计', fontsize=16)

plt.legend()
plt.show()
```



- **柱形图**（Bar Chart）：由一系列高度不等的柱形条纹表示数据分布的情况

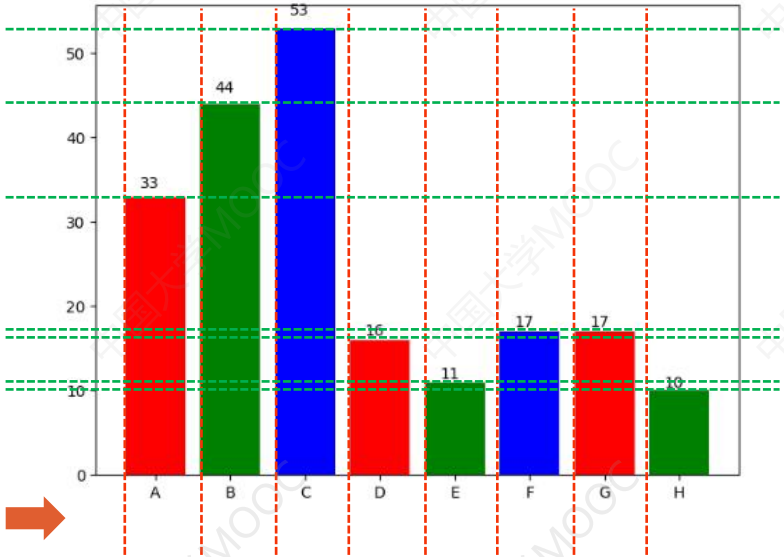




bar()函数

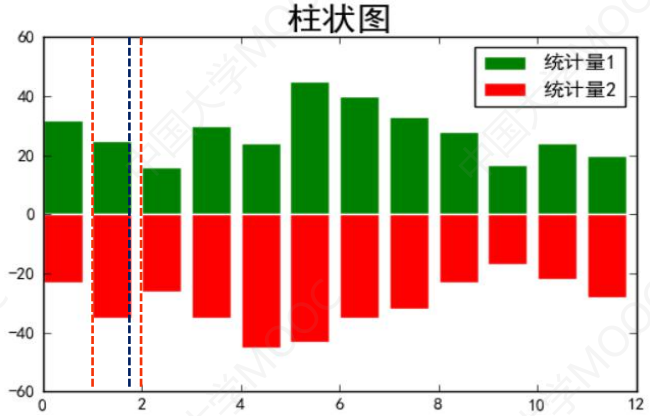
bar(left, **height**, width, facecolor, edgecolor, label)

height



left

例：绘制柱形图



- 条纹高度

```
y1=[32,25,16,30,24,45,40,33,28,17,24,20]
y2=[-23,-35,-26,-35,-45,-43,-35,-32,-23,-17,-22,-28]
```

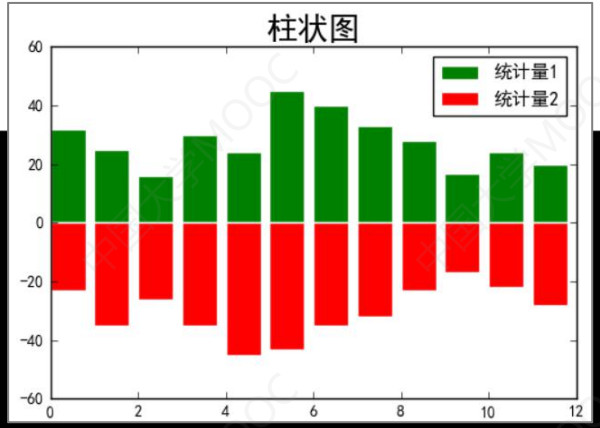
- 条纹left坐标

条纹的宽度**0.8**，每隔**1cm**开始画一个条纹

自动生成**left坐标**序列

```
plt.bar(range(len(y1)), y1,width=0.8,facecolor='green',edgecolor='white',label='统计量1')
plt.bar(range(len(y2)), y2,width=0.8,facecolor='red',edgecolor='white',label='统计量2')
```

例：绘制柱形图




```
1  import numpy as np
2  import matplotlib.pyplot as plt
3
4  plt.rcParams['font.sans-serif']="SimHei"
5  plt.rcParams["axes.unicode_minus"] = False
6
7  y1=[32,25,16,30,24,45,40,33,28,17,24,20]
8  y2=[-23,-35,-26,-35,-45,-43,-35,-32,-23,-17,-22,-28]
9
10 plt.bar(range(len(y1)), y1,width=0.8,facecolor='green',edgecolor='white',label='统计量1')
11 plt.bar(range(len(y2)), y2,width=0.8,facecolor='red',edgecolor='white',label='统计量2')
12
13 plt.title("柱状图",fontsize=20)
14
15 plt.legend()
16 plt.show()
```

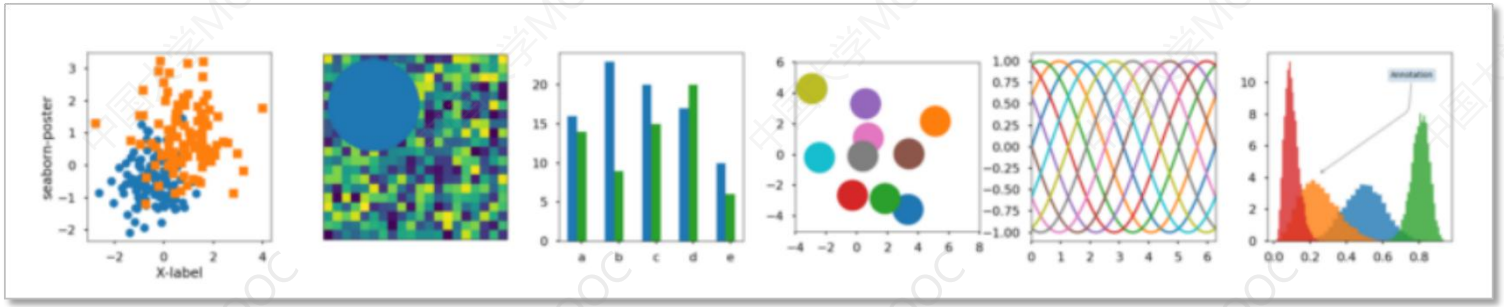
Matplotlib官网

http:// matplotlib.org

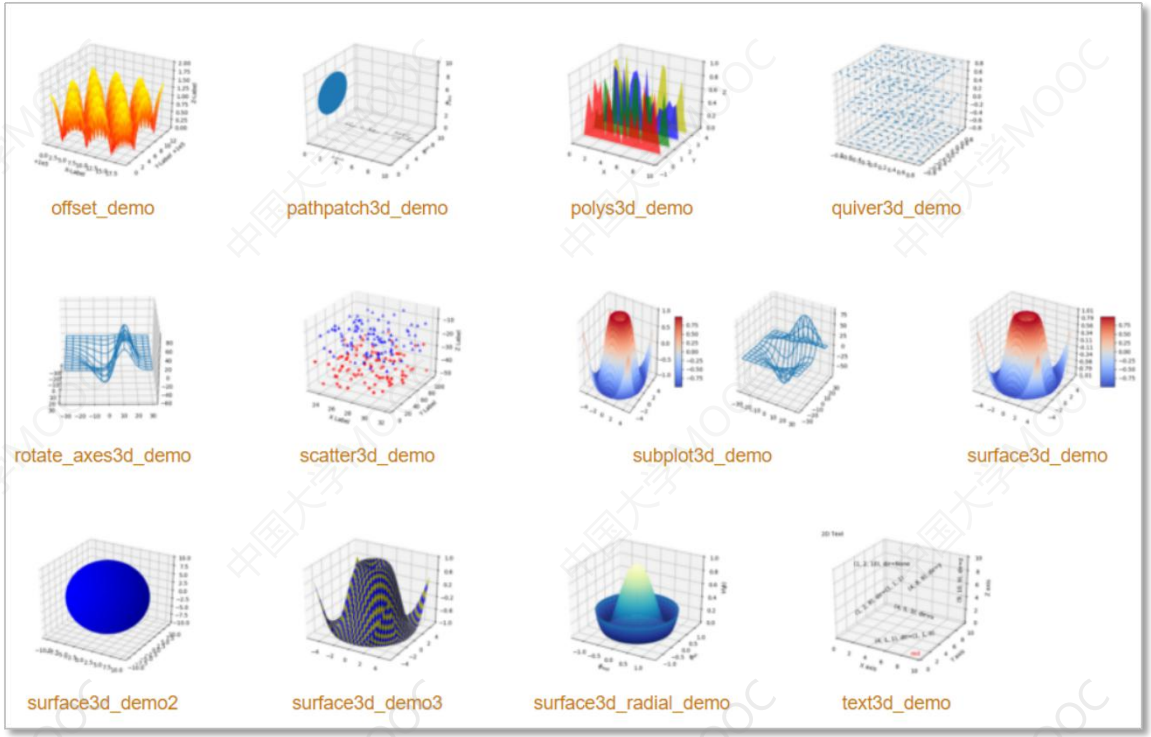
https://matplotlib.org/genindex.html

Gallery页面

https://matplotlib.org/gallery.html



缩略图

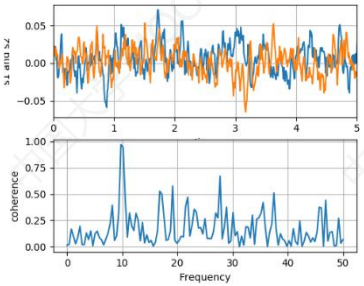

offset_demo
pathpatch3d_demo
polys3d_demo
quiver3d_demo
rotate_axes3d_demo
scatter3d_demo
subplot3d_demo
surface3d_demo
surface3d_demo2
surface3d_demo3
surface3d_radial_demo
text3d_demo

- 详细页面

  清晰大图&源码

pylab_examples example code: cohere_demo.py

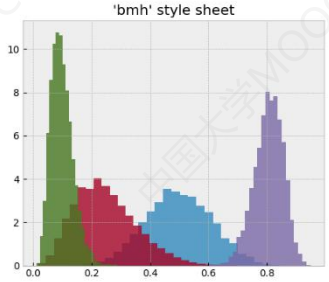
(Source code, png, pdf)




```
"""
Compute the coherence of two signals
"""
import numpy as np
import matplotlib.pyplot as plt

# make a little extra space between the subplots
plt.subplots_adjust(wspace=0.5)

dt = 0.01
t = np.arange(0, 30, dt)
nse1 = np.random.randn(len(t))                 # white noise 1
nse2 = np.random.randn(len(t))                 # white noise 2
r = np.exp(-t/0.05)

cnse1 = np.convolve(nse1, r, mode='same')*dt   # colored noise 1
cnse2 = np.convolve(nse2, r, mode='same')*dt   # colored noise 2

# two signals with a coherent part and a random part
s1 = 0.01*np.sin(2*np.pi*10*t) + cnse1
s2 = 0.01*np.sin(2*np.pi*10*t) + cnse2

plt.subplot(211)
plt.plot(t, s1, t, s2)
plt.xlim(0, 5)
plt.xlabel('time')
plt.ylabel('s1 and s2')
plt.grid(True)

plt.subplot(212)
cxy, f = plt.cohere(s1, s2, 256, 1./dt)
plt.ylabel('coherence')
plt.show()
```

style_sheets example code: plot_bmh.py

(Source code, png, pdf)




```
"""
=====================================
Bayesian Methods for Hackers style sheet
=====================================

This example demonstrates the style used in the Bayesian Methods for Hackers
[1]_ online book.

.. [1] http://camdavidsonpilon.github.io/Probabilistic-Programming-and-Bayesian-Methods-for-Hackers/

"""
from numpy.random import beta
import matplotlib.pyplot as plt


plt.style.use('bmh')


def plot_beta_hist(ax, a, b):
    ax.hist(beta(a, b, size=10000), histtype="stepfilled",
            bins=25, alpha=0.8, normed=True)


fig, ax = plt.subplots()
plot_beta_hist(ax, 10, 10)
plot_beta_hist(ax, 4, 12)
plot_beta_hist(ax, 50, 12)
plot_beta_hist(ax, 6, 55)
ax.set_title("'bmh' style sheet")

plt.show()
```

Keywords: python, matplotlib, pylab, example, codex (see Search examples)