离散Hopfield的分类——高校科研能力评价

该案例作者申明：

1：本人长期驻扎在此板块里，对该案例提问，做到有问必答。本套书籍官方网站为：video.ourmatlab.com

2：点此从当当预定本书：《Matlab神经网络30个案例分析》。

3：此案例有配套的教学视频，视频下载方式video.ourmatlab.com/vbuy.html。

4：此案例为原创案例，转载请注明出处（《Matlab神经网络30个案例分析》）。

5：若此案例碰巧与您的研究有关联，我们欢迎您提意见，要求等，我们考虑后可以加在案例里。

Contents

清空环境变量

```
clear all
clc
```

导入数据

```
load class.mat
```

目标向量

```
T = [class_1 class_2 class_3 class_4 class_5];
```

创建网络

```
net = newhop(T);
```

导入待分类样本

```
load sim.mat
A = {[sim_1 sim_2 sim_3 sim_4 sim_5]};
```

网络仿真

```
Y = sim(net,{25 20},{},A);
```

结果显示

```
Y1 = Y{20}(:,1:5)
Y2 = Y{20}(:,6:10)
Y3 = Y{20}(:,11:15)
Y4 = Y{20}(:,16:20)
```

```
Y5 = Y{20}(:,21:25)
```

```
Y1 =

     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1
     1    -1    -1    -1    -1

Y2 =

    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1
    -1     1    -1    -1    -1

Y3 =

    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1
    -1    -1     1    -1    -1

Y4 =

    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1
    -1    -1    -1     1    -1

Y5 =

    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
    -1    -1    -1    -1     1
```

绘图

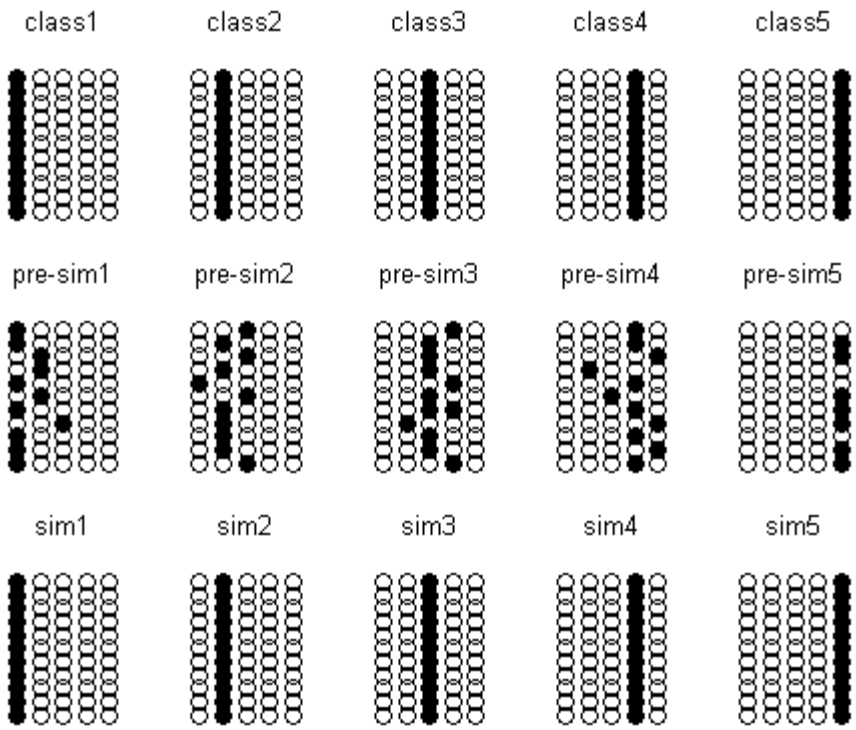
```
result = {T;A{1};Y{20}};
figure
for p = 1:3
    for k = 1:5
        subplot(3,5,(p-1)*5+k)
        temp = result{p}(:,(k-1)*5+1:k*5);
        [m,n] = size(temp);
        for i = 1:m
            for j = 1:n
                if temp(i,j) > 0
                   plot(j,m-i,'ko','MarkerFaceColor','k');
                else
                   plot(j,m-i,'ko');
                end
                hold on
            end
        end
        axis([0 6 0 12])
        axis off
        if p == 1
           title(['class' num2str(k)])
        elseif p == 2
           title(['pre-sim' num2str(k)])
        else
           title(['sim' num2str(k)])
        end
    end
end

% 案例扩展(无法分辨情况)
noisy = [1 -1 -1 -1 -1;-1 -1 -1 1 -1;
        -1 1 -1 -1 -1;-1 1 -1 -1 -1;
        1 -1 -1 -1 -1;-1 -1 1 -1 -1;
        -1 -1 -1 1 -1;-1 -1 -1 -1 1;
        -1 1 -1 -1 -1;-1 -1 -1 1 -1;
        -1 -1 1 -1 -1];
y = sim(net,{5 100},{},{noisy});
a = y{100}

web browser http://www.matlabsky.com/thread-11146-1-2.html
```

```
a =

    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
    -1    -1    -1    -1    -1
```



Matlab神经网络30个案例分析

相关论坛：

《Matlab神经网络30个案例分析》官方网站：video.ourmatlab.com

Matlab技术论坛：www.matlabsky.com

Matlab函数百科：www.mfun.la

Matlab中文论坛：www.ilovematlab.com

Published with MATLAB® 7.8