%one-layer unsupervised learning network

clear

g=.15; %learning Rate

Inputs = [1 1 1 0 0 0 0 0 0;

0 0 1 1 1 0 0 0 0;

0 0 0 0 1 1 1 0 0;

0 0 0 0 0 0 1 1 1];

Weights= rand(9,4);

Weights= Weights./sum(Weights);

for epochs = 1:200

for n=1:4

in = Inputs(n,:);

Output= (in\*Weights);

[value,winner]= max(Output);

Weights(:,winner)= Weights(:,winner)+(g\*(in/sum(in))')-g\*Weights(:,winner);

%deltaweight?

%chWeights =(g \*(in/sum(in)))'- (g \* Weights(:,winner));

%Weights(:,winner)= Weights(:,winner)+chWeights;

end

end

Weights

>> Assingment11

|  |  |  |
| --- | --- | --- |
| Weights =  0.0000 0.0000 0.1845 0.3333  0.0000 0.0000 0.0142 0.3333  0.0000 0.1532 0.1364 0.3333  0.0000 0.1532 0.0683 0.0000  0.3333 0.1532 0.1350 0.0000  0.3333 0.0000 0.1855 0.0000  0.3333 0.1802 0.0788 0.0000  0.0000 0.1802 0.1617 0.0000  0.0000 0.1802 0.0354 0.0000 | Weights =  0.1782 0.0000 0.1997 0.3333  0.0078 0.0000 0.1176 0.3333  0.0934 0.0936 0.0477 0.3333  0.1343 0.0936 0.1648 0.0000  0.0287 0.2038 0.0918 0.0000  0.1654 0.1101 0.0508 0.0000  0.0944 0.2397 0.1943 0.0000  0.1305 0.1296 0.0290 0.0000  0.1674 0.1296 0.1042 0.0000 | Weights =  0.0936 0.0000 0.0472 0.1004  0.0936 0.0000 0.0524 0.1532  0.2038 0.0000 0.1432 0.0774  0.1101 0.0000 0.1288 0.0903  0.2397 0.0000 0.0904 0.0265  0.1296 0.0000 0.1777 0.1512  0.1296 0.3333 0.0874 0.1127  0.0000 0.3333 0.1827 0.1293  0.0000 0.3333 0.0901 0.1591 |