FUZZY C-MEANS CLUSTERING

data=load('fcclusteringtrain.txt');

c=2;

p=[1,0,0,0;0,1,1,1];

centre=cent(p,data,c);

centre1=centre+1;

while(centre~=centre1)

dist=fuzzydist(centre,data);

p1=update1(p,dist)

[row1,column1]=size(p1);

centre1=centre;

centre=cent(p1',data,c);

end

for i=1:row1

m=p1(i,1);

for j=1:column1

if(p1(i,j)>m)

m=p1(i,j);

end

end

for l=1:column1

if(p1(i,l)==m)

p1(i,l)=1;

else

p1(i,l)=0;

end

end

end

disp('final classification')

disp(p1)

function [centre] = cent(p,data,c)

[row,column]=size(data);

for i=1:c

for j=1:column

centre(i,j)=(p(i,:)\*data(:,j))/sum(p(i,:))

end

end

end

function [dist] = fuzzydist(centre,data)

[row,column]=size(centre)

for i=1:length(data)

for j=1:row

dist(i,j)=sqrt(sum((data(i,:)-centre(j,:)).^2))

end

end

end

function [p1] = update1(p,dist)

[row,column]=size(dist)

for i=1:row

for j=1:column

if((sum((dist(i,j)./dist(i,:)).^2))~=0)

if(dist(i,:)~=0)

p1(i,j)=1/(sum((dist(i,j)./dist(i,:)).^2));

else

for k=1:column

if(dist(i,k)==0)

dist(i,k)=0.0001;

end

end

p1(i,j)=1/(sum((dist(i,j)./dist(i,:)).^2));

end

else

p1(i,j)=1;

end

end

end

OUTPUT:

final classification

1 0

1 0

0 1

0 1