MATLAB CODE for LDA

data=load('LDA\_train.txt');

[row,column]=size(data);

v=1;

b=1;

for i=1:row

if(data(i,column)==0)

D2(v,1:column-1)=data(i,1:column-1);

v=v+1;

else

D1(b,1:column-1)=data(i,1:column-1)

b=b+1;

end

end

meanD1=sum(D1)/length(D1);

meanD2=sum(D2)/length(D2);

%plot(D1(:,1),D1(:,2),'rx')

%hold on;

%plot(D2(:,1),D2(:,2),'bx')

[row1,col1]=size(D1);

[row2,col2]=size(D2);

v=1;

b=1;

for i=1:col1

zeroD1(:,i)=D1(:,i)-meanD1(i);

end

for i=1:col1

zeroD2(:,i)=D2(:,i)-meanD2(i);

end

%zeroD1=zeroD1';

%zeroD2=zeroD2';

S1=[sum(zeroD1(:,1).^2)/(length(D1)-1),sum(zeroD1(:,1).\*zeroD1(:,2))/(length(D1)-1);sum(zeroD1(:,1).\*zeroD1(:,2))/(length(D1)-1),sum(zeroD1(:,2).^2)/(length(D1)-1)]

S2=[sum(zeroD2(:,1).^2)/(length(D2)-1),sum(zeroD2(:,1).\*zeroD2(:,2))/(length(D2)-1);sum(zeroD2(:,1).\*zeroD2(:,2))/(length(D2)-1),sum(zeroD2(:,2).^2)/(length(D2)-1)]

S=S1+S2;

invS=pinv(S);

M=(meanD1-meanD2)';

v=invS\*M;

z1=D1\*v

z2=D2\*v

OUTPUT:

z1 =

-8.3987

-6.5515

-5.7674

-9.8272

-9.9668

z2 =

-23.2093

-16.5183

-19.2890

-19.1495

-23.3488