MATLAB CODE for PCA:

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

[row,column]=size(data);

mean=sum(data)/row;

for i=1:column

zeroD(:,i)=data(:,i)-mean(i);

end

S=[sum(zeroD(:,1).^2)/(row-1),sum(zeroD(:,1).\*zeroD(:,2))/(row-1);sum(zeroD(:,1).\*zeroD(:,2))/(row-1),sum(zeroD(:,2).^2)/(row-1)]

a=1;

b=-(S(1,1)+S(2,2));

c=(S(1,1)\*S(2,2))-(S(1,2)\*S(1,2));

d=sqrt(b^2-4\*c\*a);

x1=(-b+d)/(2\*a);

x2=(-b-d)/(2\*a);

x=[x1;x2];

I=eye(length(x));

gamma1=I\*x1;

gamma2=I\*x2;

S1=S-gamma1;

S2=S-gamma2;

x1=-sum(S2(1,2))/sum(S2(1,1));

x2=-sum(S1(1,2))/sum(S1(1,1));

v1=[x1;1];

v2=[x2;1];

v=[v2,v1];

S\*v1

x(2)\*v1

S\*v2

x(1)\*v2

p=0;

c=[];

for i=1:length(v)

p=p+v(1,i);

c(:,i)=v(:,i);

if(p>.9)

break;

end;

end

Final=zeroD\*c

OUTPUT:

Final =

1.1262

-2.4179

1.3496

0.3730

2.2794

1.2418

-0.1348

-1.5569

-0.5958

-1.6647