SOFM

```
clc;
clear all;
close all;
x=[0.3 0.4];
w=[0.2 0.6 0.4 0.9 0.2;0.3 0.5 0.7 0.6 0.8];
alpha=0.3;

[r1 c1]=size(w);
[r2 c2]=size(x);


for i=1:r2
     for j=1:c1
        W=w(:,j);
        I=x(i,:);
        a=W'-I;
        a=a.*a;
        s=sum(a);
        d(i,j)=(s);
     end
end
m=min(d);
for i=1:r1
    if(d(1,i)==m)
        ind=i;
    end
end

for i=1:r1
    w(i,ind)=w(i,ind)+(alpha*(x(i)-w(i,ind)));
end

ind1=ind+1;
ind0=ind-1;

if(ind1<c1)
    for i=1:r1
    w(i,ind1)=w(i,ind1)+(alpha*(x(i)-w(i,ind1)));
    end
end

if(ind0>0)
    for i=1:r1
    w(i,ind0)=w(i,ind0)+(alpha*(x(i)-w(i,ind0)));
    end
end
disp('w=');
disp(w);
plot(w(1,:),w(2,:),'r');
```

OUTPUT:

```
w=
    0.2300    0.5100    0.4000    0.9000    0.2000
    0.3300    0.4700    0.7000    0.6000    0.8000
```

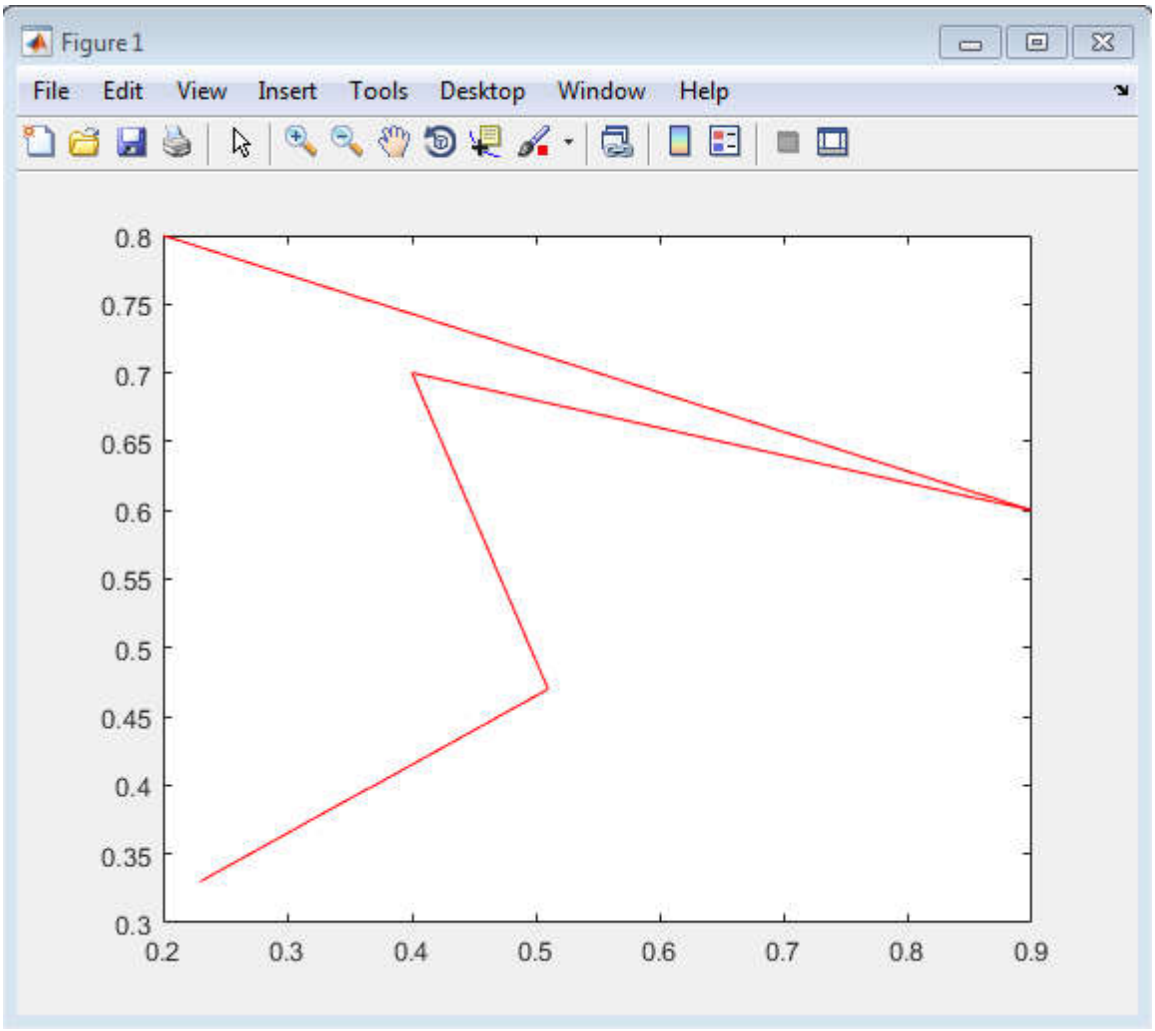

Fig1: Output of SOFM