

```
%%%  
%%% Example of RBF network design  
%%%  
  
clear all, close all, clc  
  
N = 30;           % Number of data (patterns)  
std_noise = 0.1; % Noise affecting the data  
  
% data for approximation (good generalisation properties)  
MN = 5; eg = 0.02; sc = 1.0;  
  
% data for exact interpolation  
% MN = 30; eg = 1e-7; sc = 1/N;  
  
x = linspace(0,1,N); % Patterns (N)  
  
fx = 0.5 + 0.4*sin(2*pi*x); % Target function (Bishop, 1995)  
  
n = std_noise*mean(fx)*randn(1,N); % Noise affecting the data  
  
fn = fx + n;  
  
% eg: sum-squared error goal  
% sc: spread constant  
% MN Maximum number of neurons,  
% default is N  
  
net = newrb(x,fn,eg,sc,MN);  
F = net(x);  
  
figure, plot(x,fx,'--',x,fn,'o',x,F,'-')  
xlabel('Input (x)')  
legend('Real function','Noisy data','Interpolation')
```