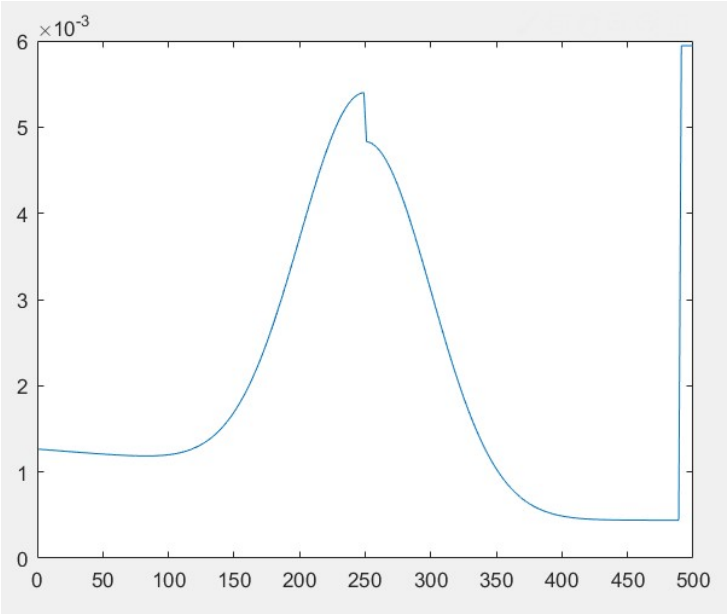
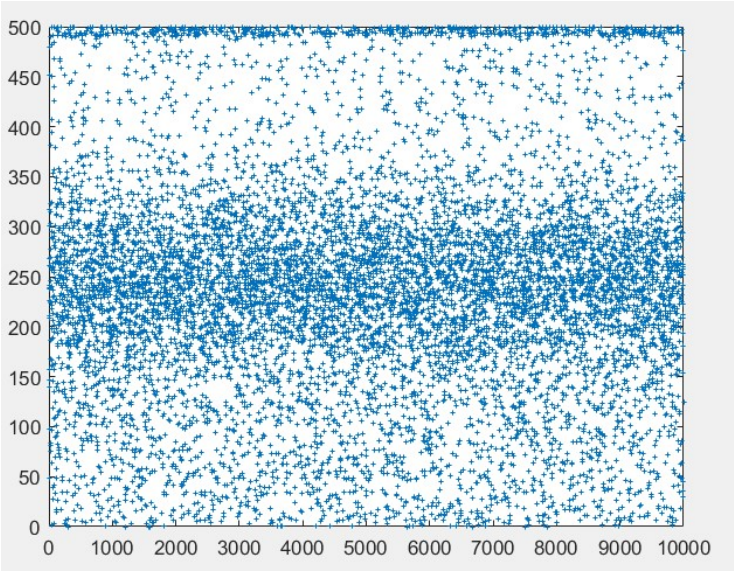
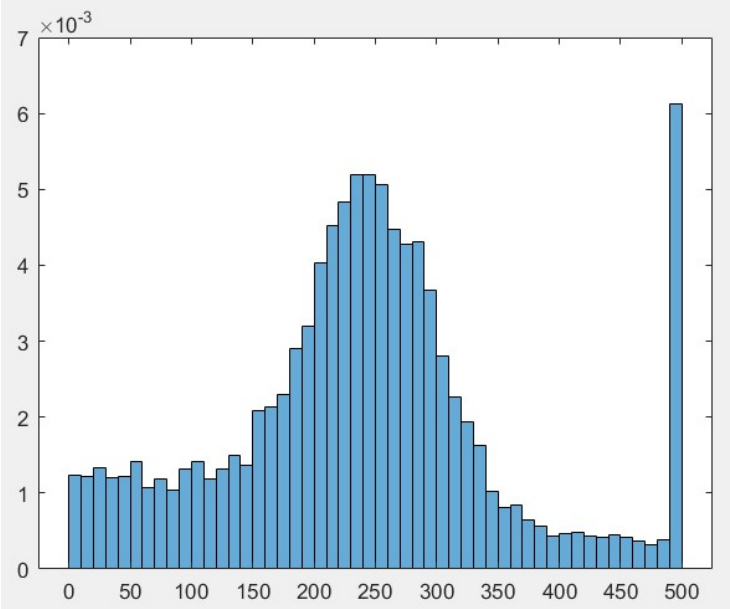
Hw6, IR, Keming Li, 11612126

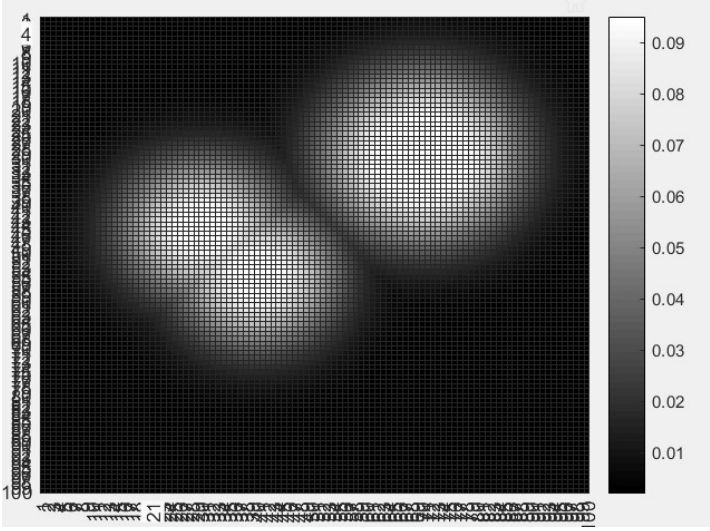
1.

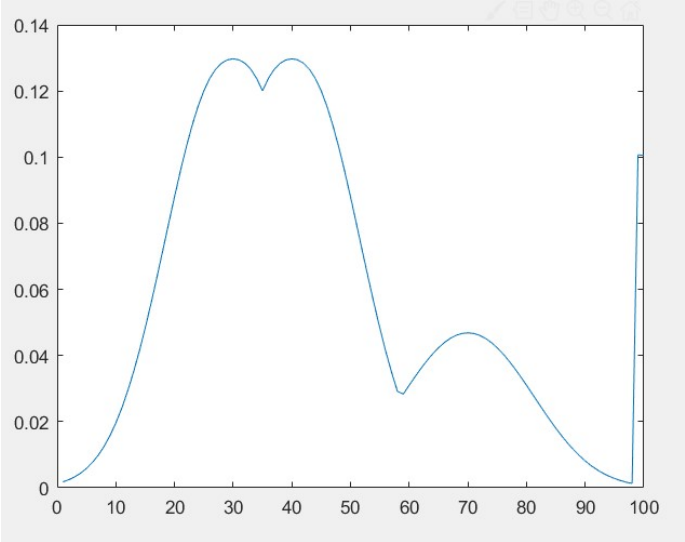




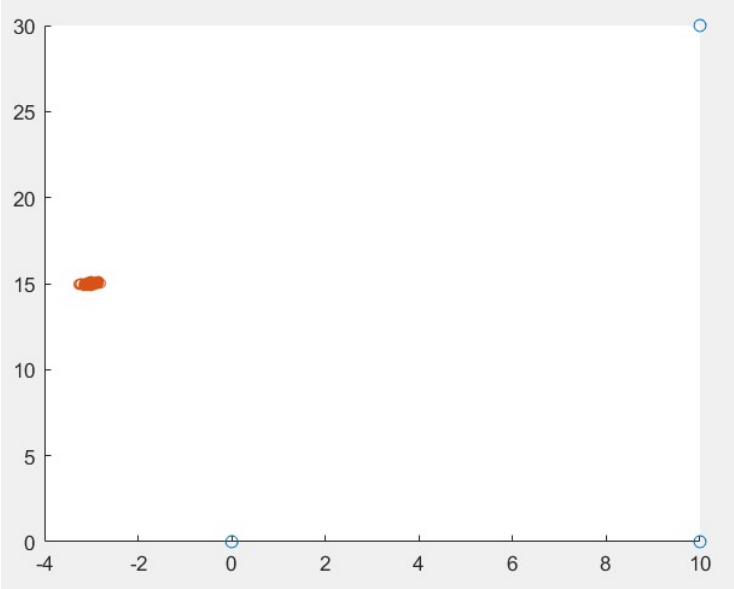

×10^-3
7
6
5
4
3
2
1
0
0
50
100
150
200
250
300
350
400
450
500

2.


0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01


0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
10
20
30
40
50
60
70
80
90
100

3.



4.

Use “fmincon” try to maximum EA

```
    function q=ea(a)
        q=1;
        for ii=1:length(x)
            q=(a(1)*P_hit(x(ii))+a(2)*P_unexp(x(ii))+a(3)*P_rand(x(i
        end
        q=-q*1e20;
        disp(q)
    end
%{
options = optimoptions('fmincon', 'Algorithm','sqp','OptimalityToler
problem.options = options;
problem.solver = 'fmincon';
problem.objective = @ea;
problem.x0 = [.72 .18 .05 .05];
%}
% [a1, a2, a3, a4] =deal(0.5, 0.3, 0.18, .02);
solution=fmincon(@ea, [.72 .18 .05 .05], A, b, [],[],  [0 0 0 0], [1
%solution=fmincon(problem);
disp(solution);
end
```

```
   -6.8262e+04

   -6.8262e+04

   -6.8262e+04

   -6.8262e+04


Local minimum found that satisfies the constra

Optimization completed because the objective f
feasible directions, to within the default val
and constraints are satisfied to within the de

<stopping criteria details>

    0.6428    0.3420    0.1152    0.0000

fx >>
```