K = 500
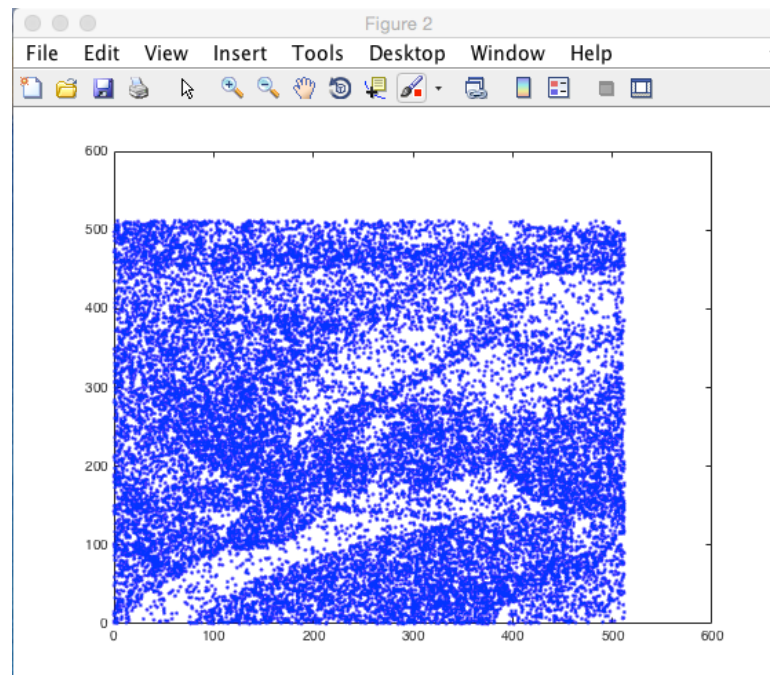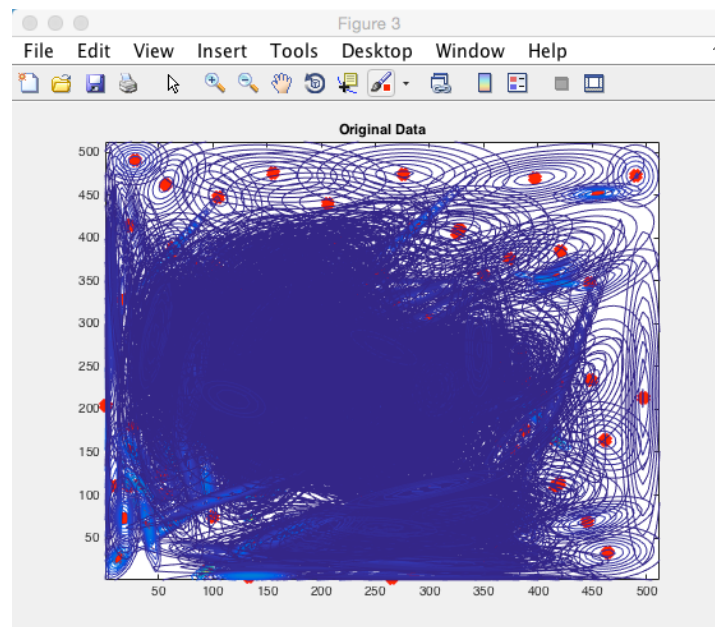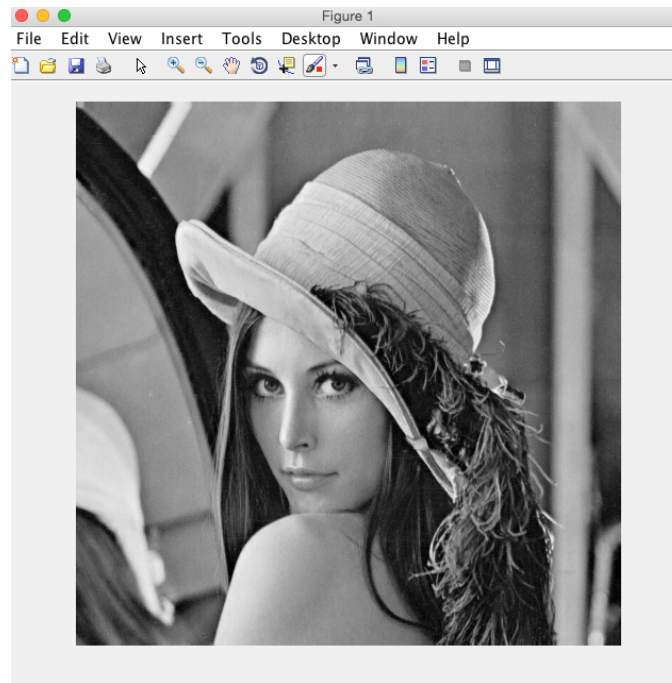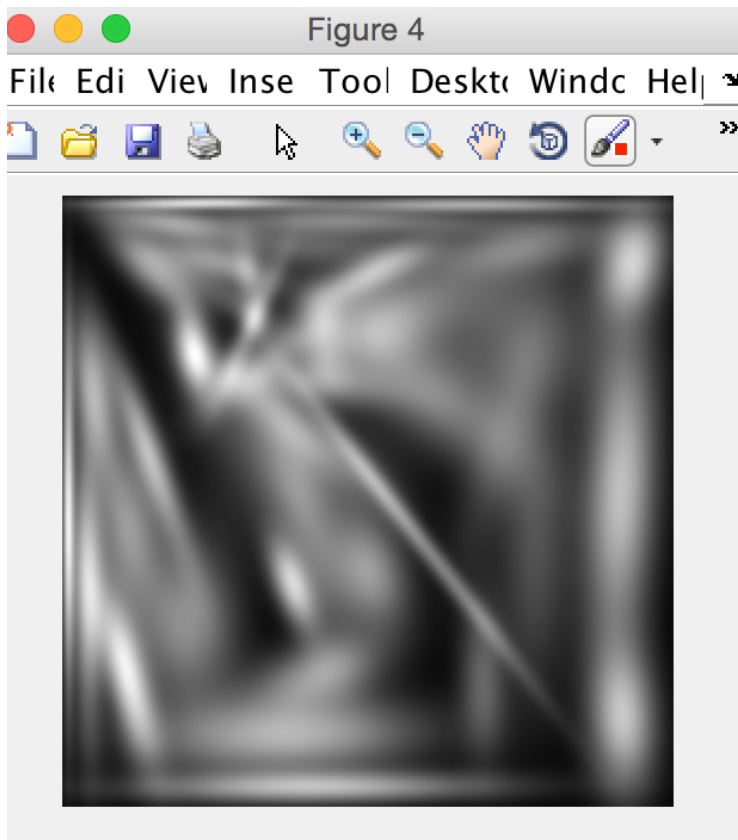**Iteration Times = 214 (every time add 100 sample points)**
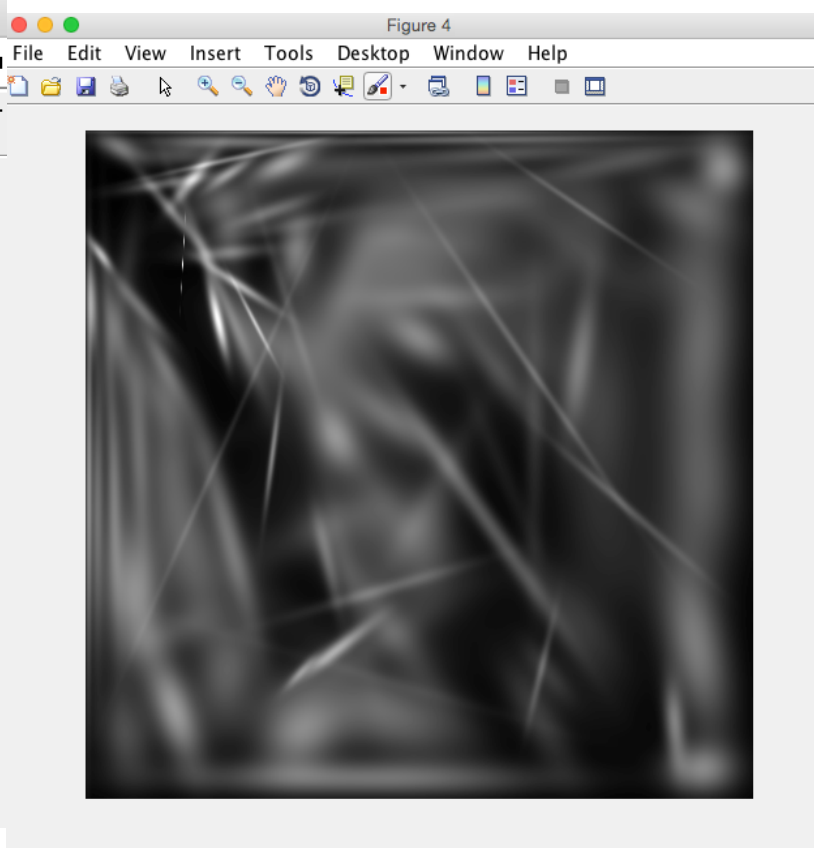

(!) Sample Points = 22400

(2) Converged Gaussian Contour

(3) Original Picture

(4) K = 50

(5) K = 500

Fitting Time Complexity: $K^2*I*O(n)$

(1) Fitting Time = 5896.988676 with Iteration times = 229, K = 500 Gaussians
(2) Picture Drawing Time = 5944.624950 seconds

```
EM Iteration 216
EM Iteration 217
EM Iteration 218
EM Iteration 219
EM Iteration 220
EM Iteration 221
EM Iteration 222
EM Iteration 223
EM Iteration 224
EM Iteration 225
EM Iteration 226
EM Iteration 227
EM Iteration 228
EM Iteration 229
Elapsed time is 5896.988676 seconds.
Elapsed time is 5944.624950 seconds.
```

(3) Picture Drawing Time = 5280.25 seconds with K = 1000 Gaussians

```
Command Window
        pb = phi*mvnpdf([a b],mu,sigma);
        tim(a,b) = pb;
        if pb > maxpb
            maxpb = pb;
        end;
    end
end
toc


figure(4);
imshow(tim/maxpb);
Elapsed time is 5280.254074 seconds.
>>
```