CS 229 ASSIGNMENT 2:

Bayesian Regression

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Task:

Figure 1 gives an illustration of ***sequential Bayesian learning*** of a simple linear model of the form y(x,w)=w0+w1*x.

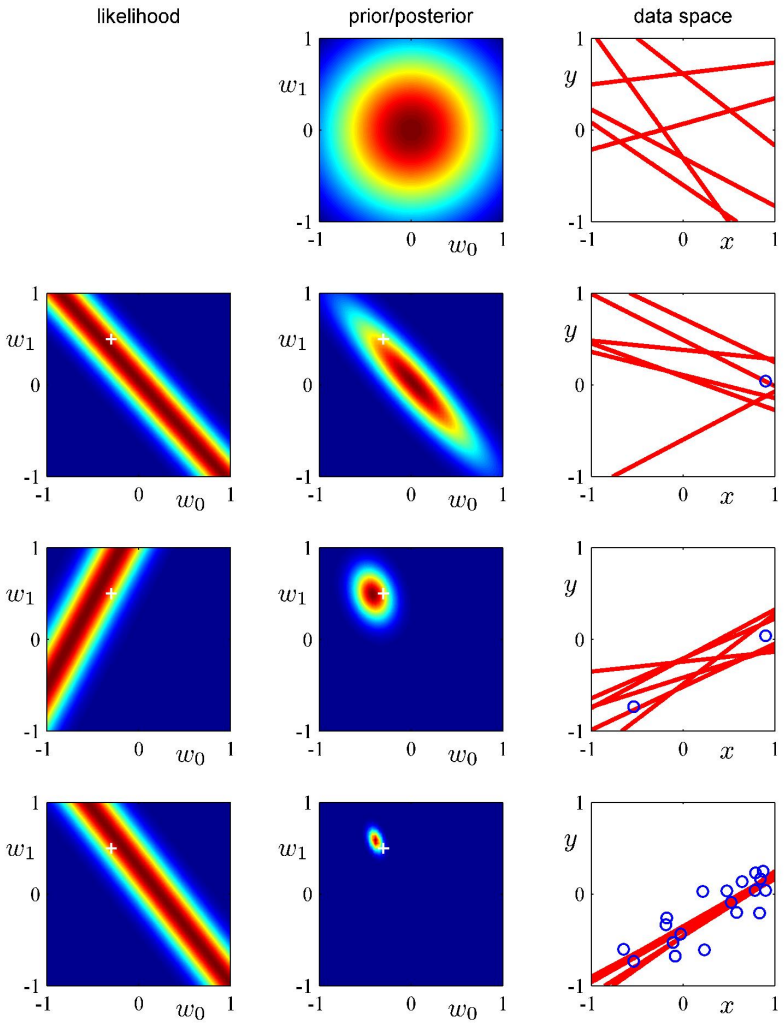

Figure 1 Illustration of sequential Bayesian learning of a simple linear model of the form y(x,w)=w0+w1*x

(1) (10 points) Design a set of data samples in the linear model, with random noise

```
% Generate data: generate t from x
x=-2:0.01:2;
beta=9;
threshold=0.15;% This is threshold for point selection
noise=0.02*normrnd(0,1/beta,[1 size(x,2)]);

% Ground truth
W0=[0.5 0.2];
t=W0(1)+W0(2)*x+noise;
```

(2) (90 points) Implement ***sequential Bayesian learning*;** show the results of **likelihood, prior/posterior, and examples in data space** in the same way as Figure 1.