13. Exercise: Multiple observations and unknowns

Exercises due Apr 8, 2020 05:29 IST *Completed*

Exercise: Multiple observations and unknowns

4.0/4.0 points (graded)

Let Θ_1, Θ_2, W_1, and W_2 be independent standard normal random variables. We obtain two observations,

$$X_1 = \Theta_1 + W_1, \qquad X_2 = \Theta_1 + \Theta_2 + W_2.$$

Find the MAP estimate $\hat{\theta} = (\hat{\theta}_1, \hat{\theta}_2)$ of (Θ_1, Θ_2) if we observe that $X_1 = 1$, $X_2 = 3$. (You will have to solve a system of two linear equations.)

$\hat{\theta}_1 =$ 1 ✔

$\hat{\theta}_2 =$ 1 ✔

Submit You have used 2 of 3 attempts

Discussion

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Why the second variance is 1? 2

? Where in the lectures can I find the information I need to correct my starting equation? 2 new
Hi again, I've been told in another comment thread that I'm starting from the wrong equation, and th...

? Are theta_1 and theta_2 standard normal? 4

Intuition 1 new
It is quite challenging to try to interpret the estimate of theta1 and theta2 intuitively using the signal ...

? How do I get from the last equation in the lecture to the two linear equations I need to solve this? 14
I was hoping the last lecture would take us through a concrete example of how to minimize that qua...

? Number 2? 7
Hello Any hints for number 2 please? Theta_1 was relatively easy to determine, but somehow struggli...