Christoph F. Eick

Group Homework Credit

Fall 2024

Group D Task

To be presented Th., Sept. 19

Samples for X: 0, 4, 5, 7 and X~N(μ,σ)?

Compute the likelihood of the 4 samples and L ((μ,σ)|X) using:

a. N(2,1)

b. N(4,1)

Remark: L ((μ,σ)|X)= pμ,σ(0)\*pμ,σ(4)\*pμ,σ(5)\*pμ,σ(7)

c. What values does the maximum likelihood estimator (MLE) choose for (μ,σ)? What is the probability of the 4 samples and what is L((μ,σ)|X) for the MLE choice for (μ,σ)?

Group Homework Credit

Group E Task

To be presented on Th., Sept. 26

Non-parametric Density Estimation

Dataset O={x1,x2,x3,x4}

Data Points:

x1=(1,1), x2=(4,4), x3=(6,4), x4=(4,6)

Query Points:

q1=(1,2) and q2=(4,5)

Assume Manhattan distance[[1]](#footnote-1) is used as the distance function.

a. Compute fGauss (q1) assuming bandwidth σ=1

b. Compute fGauss (q2) assuming bandwidth σ=1

c. Compute fGauss (q2) assuming bandwidth σ=3

d. Interpret the 3 results!

1. d((x1,y1),(x2,y2))= |x1-x2| + |y1-y2| [↑](#footnote-ref-1)