Quiz 5

This is a preview of the published version of the quiz

Started: Jun 22 at 9:12pm

Quiz Instructions

Question 1 1 pts

What is a maximum likelihood estimate?

- All of them.
- It is a parametric approach since we need to be able to calculate the likelihood function given data.
- It is a point estimate of the unknown population distribution parameter(s).
- It is the estimated parameter(s) such that the likelihood function is maximized given observed data.

Question 2 1 pts

Which of the following is a point estimate?

- Sample variance.
- All of them!

○
Sample median.

○
Sample mean.

Question 3 1 pts

If you observe iid data X_1=x_1, X_2=x_2... X_n=x_n from a normal distribution with unknown mean mu and known variance. You calculate the sample mean is 8.5, and the sample median is 10 from your data.

Let L(mu) = L(mu | data) be the likelihood function with observed data. We have shown in class that the maximum likelihood estimate for mu is the sample mean. Which of the following is true?

○
L(8.5) > L(10)

○
Can not compare L(8.5) and L(10)

○
L(8.5) < L(10)

○
L(8.5) = L(10)

Question 4 1 pts

You construct a 95% confidence interval for the sample mean to estimate the population mean. Which of the following is true?

○
Your CI may not contain population mean, but it must contain sample mean.

○
Your CI must contain both sample mean and population mean.

Your CI may not contain sample mean, but it must contain population mean.

Your CI may not contain either sample mean or population mean.

Question 5 1 pts

Which of the following statement is true about confidence intervals?

Given everything else the same, higher confidence level leads to wider confidence interval.

Given everything else the same, larger sample size leads to narrower confidence interval.

Given everything else the same, smaller sampling variance leads to narrower confidence interval.

All of them!

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