Quiz 11

This is a preview of the published version of the quiz

Started: Jun 22 at 9:14pm

Quiz Instructions

Question 1 1 pts

In a linear regression model, what are assumptions about error terms?

- Errors follow normal distribution
- All of them!
- Errors are independent of each other.
- Errors have constant variance.
- Errors have mean 0.

Question 2 1 pts

What does the least-squares method for fitting a linear regression model do exactly?

- Finds those (best) values of the intercept and slope that provide us with the smallest value of the residual sum of squares.

○ Minimizes the distance between the data points to a straight line.

○ Finds those (best) values of the intercept and slope that provide us with the smallest value of the sum of residuals.

○ Minimizes the distance between the data points.

Question 3 1 pts

How do we interpret OLS slope estimate in simple linear regression?

○ The average value of Y when X is 0.

○ The average value of Y for the average value of X.

○ The amount of change in average value of Y for every unit increase in X.

○ The amount of change in average value of Y for every unit decrease in X.

Question 4 1 pts

Which of the following extension of a linear regression model will introduce a non-linearity effect?

○ Add categorical covariates.

○ Add categorical covariates and use dummy variable encoding.

○ Add more covariates.

Add a quadratic term of one of the covariates.

Question 5 1 pts

For multiple linear regression models, what issues will be caused by the multicollinearity of covariates?

Numerical solution will fail if some covariates are perfectly correlated, which lead to rank deficiency of design matrix X.

All of them!

One of the Gauss-Markov assumption will not be satisfied.

Interpretation of slope for one covariate will be problematic because we cannot hold all other covariates constant.

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