

Sampling and Bias Review Quiz

Mallick Hossain

University of Pennsylvania

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Course Survey

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Course Survey Results

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- Make homework due more often or have some form of weekly evaluation

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 - **To encourage you to practice with either of these programs, I will give you 2 bonus points for submitting homework typed up in RMarkdown or \TeX . (For reference, that’s about an extra 15-20% on your homework grade)**

Midterm Questions

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2. Post on Piazza!



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3. What are degrees of freedom?
 - Roughly, it is the number of values that are allowed to vary when computing a statistic. For example, if you are computing the deviations from the mean, you have $n - 1$ degrees of freedom since they have to sum to 0.

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2. What is the difference between an estimator and an estimate?
 - An estimator is a procedure for estimating some parameter. An estimate is the actual result of the procedure given the data. Think of an estimator as a function (f) while an estimate is the function evaluated at a point ($f(x)$).

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- Efficiency can only be estimated relative to another estimator. Given two estimators $\hat{\theta}_1, \hat{\theta}_2$, we say that $\hat{\theta}_1$ is more efficient than $\hat{\theta}_2$ if $Var(\hat{\theta}_1) < Var(\hat{\theta}_2)$

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- $MSE(\hat{\theta}) = Bias(\hat{\theta})^2 + Var(\hat{\theta})$

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7. Ready for the next lecture?

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