, 14, 15

Stat 231 - Statistics **Spring 2017**

Lecture 13, 14, 15: May 29th - June 2nd, 2017

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13.1 PPDAC

P: Problem

- What type of problem is this (Descriptive, Causative, Predictive) ?
- What are the variates ?
- What is the target population?

P: Plan

- How do we collect data?
- What is the study population

D: Data

- Types of Data : Categorical, numerical, discrete, , etc

A: Analysis

- Analysis consist of Estimation, Hypothesis testing, and prediction, all of which require a model to be setup through model selection.

C: Conclusion

- Write down our results in a way that is understandable for non-statisticians.

13.2 Likelihood Intervals

Instead of finding the "most likely" value of θ (MLE), we are trying to find the plausible values of θ

Definition 13.1 *Let $p \in (0,1)$, a $100 \cdot p\%$ likelihood interval for $\theta = \{\theta : R(\theta) \geq p\}$ where $R(\theta)$ = Relative likelihood function*

13.2.1 Conventions

- $R(\theta) \geq 0.5 \implies$ Very Plausible
- $0.1 < R(\theta) < 0.5 \implies$ Plausible
- $0.01 \leq R(\theta) < 0.1 \implies$ Implausible
- $R(\theta) \leq 0.01 \implies$ Very Implausible