

Statistical_Inference_Notes

Coursera Course by John Hopkins University

INSTRUCTORS: Dr. Brian Caffo, Dr. Roger D. Peng, Dr. Jeff Leek

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Intro

Course Book

Data Science Specialization Community Site

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Probability & Expected Values

Probability mass functions

Probability density functions

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Conditional Probability

Bayes' rule

Independence

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Expected values

Expected values, simple examples

Expected values for PDFs

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Lessons with `swirl()`

Quiz 1

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Variability, Distribution, & Asymptotics

Introduction to Variability

Variance Simulation Examples

Standard Error of the Mean

Variance Data Example

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Binomial Distrubtion

Normal Distribution

Poisson

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Asymptotics and the Law of Large Numbers (LLN)

Asymptotics and the Central Limit Theorem (CLT)

Asymptotics and Confidence Intervals

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Lessons with `swirl()`

Quiz 2

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Intervals, Testing, & P-values

T Confidence Intervals

T Confidence Intervals Example

Independent Group T Intervals

A Note on Unequal Variance

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Hypothesis Testing

Example of Choosing a Rejection Region

T Tests

Two Group Testing

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P-Values

P-Value Further Examples

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Lessons with swirl()

Quiz 3

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Power, Bootstrapping, & Permutation Tests

Power

Calculating Power

Notes on Power

T Test Power

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Multiple Comparisons

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Bootstrapping

Bootstrapping Example

Notes on the Bootstrap

Permutation Tests

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Lessons with swirl()

Quiz 4

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