UNIVERSITY OF NEBRASKA AT OMAHA

STAT 8700: BAYESIAN STATISTICS

TR 7:00 PM - 8:15 PM | Dr. Swift

In Statistical Inference, our goal is often to estimate one or more parameters from a population by examining a random sample from said population. In "Classical" Statistical Inference (also known as the Frequentist approach), these parameters are treated as unknown constants. Methods for estimating parameters in this case include method of maximum likelihood and confidence intervals.

In the Bayesian approach, the parameters are treated as random variables rather than constants, and thus the full power of probability can be used to aid estimation. The Bayesian approach offers several advantages over the classical approach: it provides interpretable results, it can easily accommodate new data, it is effective for small sample sizes, and it allows for the inclusion of prior information (although Frequentists view this as a negative).

In this course you will learn all about the Bayesian approach, from theory to computations, and comparisons with the Classical approach.



https://xkcd.com/1132/

Want to know more? Enroll in this course for Fall 2022! Undergraduates: You may be able to take this course too. Ask Emily about Fast Track.

Official course content description: The objective of this course is to introduce the Bayesian approach to statistical inference. Topics covered include: Review of probability, Bayes theorem, and Likelihood; The Bayesian methodology, prior and posterior distributions; Choices of prior distribution, conjugate and Jeffreys priors; Credible intervals and inference; Bayesian computation - Markov Chain Monte Carlo and the Gibbs Sampler; Hierarchical models; Regression models.

Pre-requisites: MATH 8756 or equivalent or permission of instructor

For More Information:

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