

Practical Applications of Bayesian Reliability



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Abstract:

This tutorial provides fundamental knowledge of Bayesian reliability and utilizes numerous examples to show how Bayesian models can solve real life reliability problems. It covers what Bayesian analysis is, what its benefits are, and how it can be applied to reliability engineering.

Basic concepts of Bayesian statistics, models, reasons, and computation are presented. The tutorial then goes on to cover Bayesian models for estimating system reliability and design capability; a discussion of Bayesian Hierarchical Models and their applications; and more. To help readers get started quickly, the tutorial presents Bayesian model examples that use JAGS and which require fewer than 10 lines of command, and short R scripts.

Biography:

Yan Liu, PhD, is Principal Systems Engineer at Medtronic PLC. (USA). She is a Medtronic Technical Fellow, a certified Master Black Belt, and has 14 years of experience on engineering and Design for Six Sigma. She has co-authored a book entitled Practical Applications of Bayesian Reliability (Wiley Series in Quality & Reliability Engineering).