

StatProb

The Encyclopedia Sponsored by Statistics and Probability Societies

StatProb
The Encyclopedia sponsored by Statistics and Probability Societies



Login

Username:

Password:

[Register](#)
[I've forgotten my login details](#)

StatProb: The Encyclopedia Sponsored by Statistics and Probability Societies combines the advantages of traditional wikis (rapid and up-to-date publication, user-generated development, hyperlinking, and a saved history) with traditional publishing (quality assurance, review, credit to authors, and a structured information display). All contributors have been accepted by an editorial board determined by the community.

All encyclopedia articles are peer-reviewed and the entire content is available under a Creative Commons license. Accounts are free.

Thomas Bayes

Thomas BAYES
b.c. 1701 - d. 7 April 1761

Summary. The problem of passing from a population to the properties of a sample was one of the first studied in probability. Thomas Bayes, a nonconformist minister, was the first to solve the inverse problem of passage from sample to population, using ideas that are widely used today.

Thomas Bayes, born in London, the son of a nonconformist minister, spent most of his adult life in a similar position in Tunbridge Wells, England. He was educated at Edinburgh University and was elected a fellow of the Royal Society in 1742. During his lifetime he published a few mathematical papers, of which the best-known is a 1736 defence of Newton's ideas against an attack by Bishop Berkeley. He is today remembered for a paper that his friend Richard Price claimed to have found amongst his possessions after death. It appeared in the Society's Transactions in 1763 and has often been republished. Apart from these bare facts, surprisingly little is known of Bayes' life.

By the middle of the 18th century it was well-understood that if, to use modern terminology, in each of n independent trials, the chance of success had the same value, θ say, then the probability of exactly r successes was given by the binomial distribution

$$P(r|\theta, n) = \binom{n}{r} \theta^r (1 - \theta)^{n-r}.$$

62-XX - Statistics

- 62-00 - General reference
- 62-01 - Instructional exposition (textbooks, tutorial papers, etc.)
- 62-02 - Research exposition (monographs, survey articles)
- 62-03 - Historical (must also be assigned at least one classification number from Section 01)
- 62-04 - Explicit machine computation and programs (not the theory of computation or programming)
- 62-06 - Proceedings, conferences, collections, etc.
- 62-07 - Data analysis
- 62-09 - Graphical methods
- 62A01 - Foundational and philosophical topics
- 62Bxx - Sufficiency and information
- 62Cxx - Decision theory
- 62D05 - Sampling theory, sample surveys
- 62Exx - Distribution theory

In Cooperation with:



American Society for Quality Statistics Division



American Statistical Association



Sign up at www.StatProb.com

StatProb

The Encyclopedia Sponsored by Statistics and Probability Societies

StatProb.com is a **free** online encyclopedia of statistics and probability hosted by Springer and sponsored by leading statistical societies.

StatProb.com combines the advantages of traditional wikis (rapid and up-to-date publication, user-generated development, hyperlinking, and a saved history) with

traditional publishing (quality assurance, review, and credit to authors). All contributions have been approved by an editorial board chosen by the sponsoring statistical societies. Articles are published in accordance with a Creative Commons license.

In Cooperation With:

- ▶ American Society for Quality Statistics Division
- ▶ American Statistical Association
- ▶ Bernoulli Society for Mathematical Statistics and Probability
- ▶ Institute of Mathematical Statistics
- ▶ International Biometric Society
- ▶ International Chinese Statistical Association
- ▶ International Society for Bayesian Analysis
- ▶ International Statistical Institute
- ▶ Royal Statistical Society
- ▶ Statistical Society of Canada / Société statistique du Canada

Submit online today at www.StatProb.com

Editorial Board:

- ▶ **Vijay Nair**, University of Michigan, American Society for Quality Statistics Division
- ▶ **George Casella**, University of Florida, American Statistical Association
- ▶ **Thomas Liggett**, UCLA, Bernoulli Society for Mathematical Statistics and Probability
- ▶ **Thomas G. Kurtz**, University of Wisconsin, Institute of Mathematical Statistics
- ▶ **Andrew Mead**, University of Warwick, International Biometric Society
- ▶ **Yi Li**, Harvard School of Public Health, International Chinese Statistical Association
- ▶ **M.J. Bayarri**, University of Valencia, International Society for Bayesian Analysis
- ▶ **Alicia Carrquiry**, Iowa State University, International Statistical Institute
- ▶ **Christian Robert**, Université Paris Dauphine and CREST, Royal Statistical Society
- ▶ **David Bellhouse**, University of Western Ontario, Statistical Society of Canada/ Société statistique du Canada

Advisory Board:

- ▶ **Richard Davis**, Columbia University
- ▶ **Paul Doukhan**, University Cergy-Pontoise
- ▶ **Nando de Freitas**, University of British Columbia
- ▶ **Ursula Gather**, Technical University Dortmund
- ▶ **Karen Kafadar**, Indiana University
- ▶ **Robert Keener**, University of Michigan
- ▶ **Richard Lockhart**, Simon Fraser University
- ▶ **Thomas Nichols**, University of Warwick
- ▶ **Wilfredo Palma**, Catholic University of Chile
- ▶ **Richard Samworth**, University of Cambridge
- ▶ **Victor Solo**, University of New South Wales
- ▶ **Hadley Wickham**, Rice University
- ▶ **Jun Zhu**, Colorado State University