Bayesian Statistics: Principles, Models, And Applications

S. James Press


Bayesian Statistics. Table 1. Notation for common probability density and probability mass functions. Name. J. M. Bernardo. Bayesian Statistics. the population under study (described here by Pr(V | K) = 0.002). An elementary exercise in probability algebra, which involves Bayesâ€™ theorem in its simplest form (see Section 3), yields Pr(V | +, A, K) = 0.164. Different sets of principles have been proposed to capture a minimum collection of logical rules that could sensibly be required for â€œrationalâ€ decision-making. These all consist of axioms with a strong intuitive appeal; examples include the transitivity of preferences (if a1 > a2 given C, and a2 > a3 given C, then a1 > a3 given C), and the sure-thing principle (if a1 > a2 given C and E, and a1 > a2 given C and E, then. Bayesian inference is a method of statistical inference in which Bayes' theorem is used to update the probability for a hypothesis as more evidence or information becomes available. Bayesian inference is an important technique in statistics, and especially in mathematical statistics. Bayesian updating is particularly important in the dynamic analysis of a sequence of data. Bayesian inference has found application in a wide range of activities, including science, engineering, philosophy, medicine.