

Bayesian Statistics

• Definition

- prior probability: The probability which reflects previous "experience" to foresee the event with newer data
- likelihood : A weak definition of probability or probability with a small sample
- posterior probability: The probability with prior probability and likelihood

• Formulation

$$\frac{P(A_i|B)}{\text{posterior}} \propto \frac{P(A_i)}{\text{prior}} \frac{P(B|A_i)}{\text{likelihood}}$$

* $P(B|A)$ is the probability of happening B under the condition of A.
(conditional prob.)

- Bayesian statistics gives the "final" probability with previous tendency and current data.
- Non-bayesian statistics is the number of occurrence divided by the total number of trial.