Machine Learning

K. Bush

November 19, 2019

Contents

List of Figures

1 My First Foray into LaTeX

Well, here we are at the beginning of my lovely article.

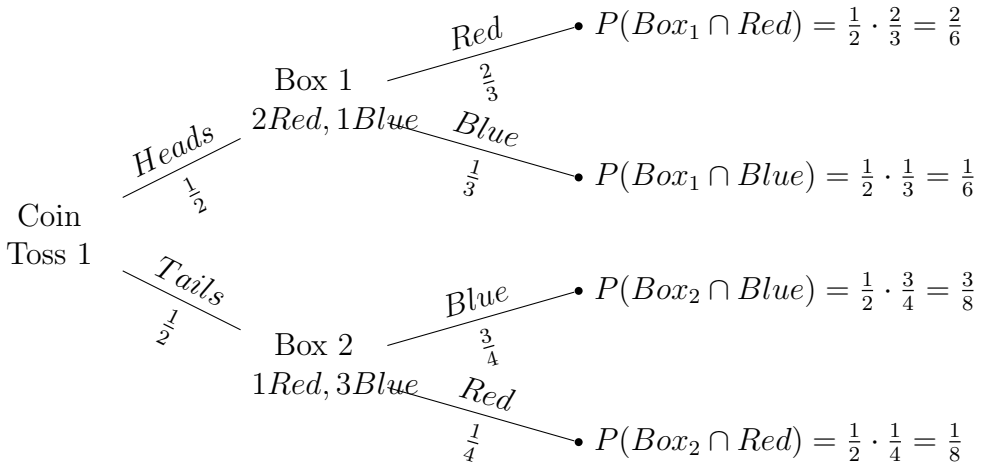
2 Stochastics

2.1 Bayes' Theorem

Thomas Bayes was an 18th century ordained minister who dabbled in mathematica and statistics. All his findings and writings were published after his death in 1761.

$$P(A \mid B) = \frac{P(B \mid A)P(A)}{P(B)}$$

Figure 1: A simple probability tree diagram.



Box 1 contains 2 red balls and 1 blue ball. Box 2 contains 3 blue balls and 1 red ball. A coin is tossed. If it falls heads up,box 1 is selected and a ball drawn. If it falls tails up, bow 2 is selected and a ball is drawn. Find the probabilities of selection a red ball. under the same conditions find the probability of selecting a blue ball. ... what should the probabilities add up to?

2.1.1 Determine the sample space

1. Assign probabilities to each branch.
   Make a tree diagram and assign probabilities to each branch.

2. Multiply the probabilities for each branch.
   This is the Multiplication Rule.

3. Add the probabilities of the end branches for each color. This is the Addition Rule.