5 Probability: the mathematics of randomness

The theory of probability is the mathematician's description of random variation. This chapter introduces enough probability to serve as a minimum background for making formal statistical inferences.

5.1 (Discrete) random variables

The concept of a random variable is introduced in general terms and the special case of discrete data is considered.

5.1.1 Random variables and distributions

5.1.2 Probability mass functions and cumulative distribution functions

5.1.3 Summaries

5.1.4 Special discrete distributions