Chapter 7 Portfolio Contribution

Required for undergraduate and graduate students:

1. Retrieve your textbook author’s file of R code {BernMetrop.R}. Save the contents into a different file, so that you do not overwrite the original. Make the modifications below, and then run the modified R code.

a. Comment out the second line (with rm), unless you are certain that you want to run it.

b. Change myData to reflect 7 successes in 10 attempts (as in your Chapter 5 portfolio contribution).

c. Change pTheta to reflect the prior (as in your Chapter 5 portfolio contribution).

d. Change the 0.0 multiplier in burnIn to 0.001.

e. Remove the commenting out of saveGraph, and change eps to pdf.

2. Using your own words, compare your findings to: (i) what you obtained from BernGrid with the same data and prior (as in your Chapter 5 portfolio contribution); and, (ii) the middle panels of Figure 7.4 in the textbook. Be sure to display the three graphics you obtain by removing the commenting out of saveGraph and to acknowledge your adaptation of the textbook author’s R code. (Since the modifications to the textbook author’s R code are those specifically requested above, you do not need to include an appendix with the modified code.)

Required for graduate students only:

3. Re-run the modified R code: (i) with trajLength equal to 5000 instead of 50000; (ii) with a different set.seed of your choice; and, (iii) with both of the preceding. Observe how much (or how little) the posterior mode and 95% HDI are affected. Be sure to display the graphics with the histograms of sampled values and to acknowledge your adaptation of the textbook author’s R code. (You do not need to display the graphics with the traces of the Markov chains, and you do not need to include an appendix with the modified code.)