Homework 4 Stat 550

Dr. Scott

October 18, 2023

Due: Friday 10-27 30 Points

Instructions: We will discuss generally in class before due date. You can work in groups, but turn in your own solutions. Due date flexible.

Where to look: http://www.stat.rice.edu/~scottdw/stat550/HW/. Where to turn in: Canvas upload.

- 1. Problem 5.2
- 2. Consider the 2-component normal mixture

$$f(x) = \frac{1}{2}\phi(x|\mu_1, \sigma) + \frac{1}{2}\phi(x|\mu_2, \sigma).$$

How large must $|\mu_1 - \mu_2|$ be so that the mixture is bimodal?

3. Enter the Swiss Franc data into R. (The read.table command is in the file.) The data are 6 measurments on the old 1000 franc bills, 100 genuine and 100 counterfeit; see figure below. Which variables seem to suggest the 2 clusters, using the ASH?

