MATH 472/572 Computational Statistics - Spring 2020

Homework 4 - Due February 13, Thursday

Instructor: Leming Qu

Rules for HW:

- You are allowed to discuss HW with fellow students in the course, but the work you hand in must be your own.
- You have to write your own Python code by yourself. You are prohibited from sharing, copying or editing any Python code from other students.

How to turn in your coding portion of the HW?

- Submit your code in Jupyter Notebook format (.ipynb file) through the blackboard HW link. The deadline for code submission is the class starting time 1:30PM of the due date.
- Required output (prints and plots) must be included in the Jupyter Notebook - do not expect the Grader to run the code to see the required output. If the required output is not included in the Jupyter Notebook, the grader will take points off accordingly.

Coding Assignments:

- Problem 2.5 on page 56 of the *Computation Statistics* book.

  Required output to be embedded within the submitted Jupyter Notebook:

  All the output corresponding to a specific question must begin in a Markdown Cell with a heading, for example,

  Answer to part (a):

  – so that the grader can easily find your answer to each question.

  (a) Present your derivation using Markdown in Jupyter notebook.

  (b) Present your derivation using Markdown in Jupyter notebook.

  (c) Present your estimates in the last 5 iterations in a format similar to Table 2.1.

  (d) Present your estimates in the last 5 iterations in a format similar to Table 2.1.

  (e) Present your estimates in the last 5 iterations in a format similar to Table 2.1.

  (f) Present your estimates in the last 5 iterations in a format similar to Table 2.1. For choices of the starting matrix $\boldsymbol{M}^{(0)}$, read the 3rd paragraph on page 43.

  (g) Display the required graphs in the notebook.