CS 4220 / MATH 4260: Homework 5

Instructor: Anil Damle
Due: May 4, 2018

Policies

For this HW, you can work in groups of up to three and within a group develop a single exam question. You each still need to turn in a separate writeup (though in this case they can be identical within a group), and you must list your collaborators in your writeup. You are also certainly free, as always, to discuss ideas for questions more broadly. Please do not directly, knowingly use problems from the textbook, though you may look at them for ideas of where to start. Your solution, including plots and necessary output from your code should be typeset and submitted via the CMS as a pdf file. Additionally, please submit any code written for the assignment via the CMS as well. This can be done by either including it in your solution as an appendix, or uploading it as a zip file via the CMS.

The purpose of this HW is to provide an avenue for you to synthesize what you have learned over the course of this class. (As a complete aside, this nicely fits into Bloom's taxonomy.) Consequently, the policies above are slightly different to allow for more explicit collaboration (you can work in groups of 3, though everyone needs to submit files to CMS).

This is a bit of an experiment, and will be graded as such. We are looking for viability of the question and correctness of your solution, and will not be so concerned with an assessment of if they are good questions (an admittedly fuzzy metric). These questions will not be directly used on the final exam (barring some sort of unexpected event in which you happen to independently write a question we already plan to use on the final).

Question 1:

Write a viable homework question for this course (it may pertain to anything we have covered). Your question must contain three parts, a theoretical component, a code component, and a plotting/illustration component. If you wish you can instead write two questions, one theoretical and one with implementation and illustration. In addition, write a solution (including code) for your problem(s).