MAST 90111 Advanced Statistical Modeling

Project

In the project, you are expected to analyse a real dataset (you can find it online or extract it from MATLAB or an R package), which contains at least one response variable and two explanatory variables. Here are some bullets you may check:

1. One-dimensional kernel density estimation with different ways of selecting bandwidth.
2. Two-dimensional kernel density estimation.
3. One-dimensional and multi-dimensional kernel regression.
4. Use spline methods to do regression.
5. Use the partial linear model to do the multivariate regression and compare it to the nonparametric ones.
6. Plot and interpret your results.

You can work individually or in a team of up to 3 students. Write a technique report to summarise your work and indicate the distribution of each teammate's work. Each team only needs to submit one report. **The report is due on October 28, at 5 pm**.

Each team will present their work during the last two lectures. There is no limitation on the presentation format. Detailed arrangements for the presentation will be released later in the semester.

Additionally, each student needs to submit a PDF document specifying whether they will work individually or in a team **by September 20 at 5:00 pm**. on LMS. If one works in a team, please specify the team members' names. Students who fail to submit the document in time will be automatically considered as working individually.