Review of Diego Olano's Code

Yinan Zhu

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Hi, Diego. It is a pleasure to read your code. I have read and ran the script in your Github titled "ozone.R" and "Ex2D_bayes_gdpgrowth.R". Your code is written clearly and all of them runs smoothly. There are multiple aspects your code impresses me and teaches a great lesson, specifically:

1. Clearly you have a vast knowledge of R and can almost realize any functionality in the best way. As a newbie of this language, I learnt a lot about functions and expressions I do not know from you code. For example the usage of optim(), getAnywhere(), apply(), legend(), etc. Needless to say there are a bunch of small twists that can make the code more succinct.

2. As for the comment section, not only do you have comprehensive explanations regarding your code, but also contains derivation to help me recall the related homework problem. Another great feature is you add the expected result of some crucial command under it, as that's really a great help for other's to check your code.

Meanwhile, there are things I think could be improved:

1. Sometimes you can use vectrized expression to avoid for-loops. For example in chapter 1 problem 6. In the bootstrapped_betacov function, you can compute covariance matrix of $\vec{\beta}$ by cov(beta_boot,beta_boot) instead of computing every entry of matrix one by one.

2. It is nice sometimes to put things in one place, but putting all codes of the chapter in one file, including all packages and functions really makes life harder. To an outsider, it blurs what are the things you really want to do. Also you will find it difficult to debug and maintain. You should put functions in a separate file and source it.

3. For a function, names like "multivariate_normal_maximum_likelihood_estimator" will tend to scare people away from using it.

4. You should make all the data you used available. After I opened your repository on my computer, I still need to add the .csv file by hand for chapter 2's code.

5. Trivia: In the 55 line of chapter 2's code, the command p=ncol(X) should be exchanged with its successor, or the code cannot go on; you do not need $\vec{m}$ in chapter 2's problems at all as you always incorporate the intercept into X and that basically forces $\vec{m}$ to be zero. Neither do you need to compute eta_star for this question, because you just need to fit the beta, though you will need them later.

Overall, this is a nice work. Hope I have chance to work with you again. Carry on!