

## Peer Review 01

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**Date:** Sep 18th, 2016

Overall, both R code and mathematical derivation for exercises 01 and 02 are great. They are very clean and easy to follow. I actually went over Google's R style guide, and found that you almost follow all rules. For example, do not use underscores or hyphens in both variable and function names; function names have initial capital letters and no dots. However, there are also some other style requirements that you should follow:

- The maximum line length is 80 characters. It makes readers read your code more easily since they do not need to scroll left and right over and over again.
- Use `<-`, not `=`, for assignment. (Actually I did not follow this rule as well)
- Functions should contain a comments section immediately below the function definition line, including description of the function, a list of the function's arguments, and a description of the return value. (Reference)

In addition, it would be better if you could post visualized results of those code on GitHub.

Also, two specific comments:

- In functions for gradient descent algorithm and Newton's method, you used threshold to constrain the function which is great, especially when the algorithm converges before reaching the maximum iterations. But what if it does not converge after finishing maximum iterations? You have no way to track it... So I recommend to return both betas and log likelihood values in the function so that you can track the convergence of the algorithm.
- In function for stochastic gradient descent algorithm, you put initial betas into it. The downside here is that you cannot change them when running the function. I think it will be better if you could treat betas as an argument of the function.

I also learn one function from your code:

- function `solve`. I always use to compute the inverse of a matrix, but never realize that it can be used to calculate  $x$  in a function  $Ax=b$ .