Newton−Raphson vs Nelder−Mead simplex method

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Hi there,

I have a huge dataset (>60,000 data points) and I am writing my own code to fit a GLMM to it. When I maximized the likelihood function, I used Nelder−Mead simplex first to get some idea what the estimates would be like and the algorithm converged with no problem. Then I use Newton−Raphson but now it always diverges. Even I plugged in the result from Nelder−Mead as initial value for N−R, the sum of score vector (over all data points) was far from zero then it started to diverge again (even though when I plot the histgram of score, then looked centered around zero and each one of them is tiny). I did centering and scaling on the independent variables and it helped a bit but not much. My question is: in the model, 6 out 8 independent variables are binary variables, will this affect Newton−Raphson's convergence? Also the scores look skewed and I think that's why they don't sum to zeros. Could anything be done to remedy this? When I plug the result from N−M into the N−R, should I not expect a score vector that is close to zero? Thanks for you attention and I appreciate your help.

Regards

Aaron

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