

Figure 8: Average computation time for 100 evaluations of log posterior, gradient and Hessian.

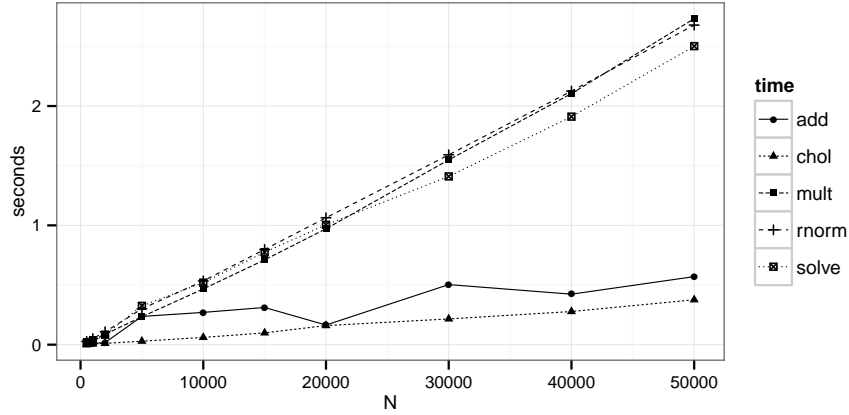


Figure 9: Computation time, averaged over 100 replications, for adding a vector to matrix columns (add); a sparse Cholesky decomposition (chol); multiplying a sparse triangular matrix by a dense matrix (mult); sampling standard normal random variates (rnorm); and solving a sparse triangular linear system (solve)

factors on the Hessian for the MVN proposal density. However, we expect higher acceptance rates as the target posterior density approaches an MVN asymptotically. Since none of the steps in the algorithm grows faster than linearly in N , we are confident in the scalability of the overall algorithm.

5 Estimating Marginal Likelihoods

Now, we turn to another advantage of our method: the ability to generate accurate estimates of the marginal likelihood of the data with little additional computation. A number of researchers have