Project Proposal Guidelines
Statistical Computing (STAT 540), Fall 2015

1. Make sure it is no longer than 1 page, 12 point font.
2. While you can study theory, modeling, an application or do a simulated study, the focus must be on an algorithm. In particular, you must implement this algorithm. You will be expected to hand in the `R code`.
3. Put the title and your name at the top of the page. Capitalize the title, e.g. Comparing Algorithms for Lasso-based Penalized Regression with Least Angle Regression. Below the title you can put your name, STAT 540 Project, Fall 2015.
4. I will look for a clear problem description without too much notation, acronyms, or technical details. You will lose points if you simply put a lot of technical details without explanation. If you can describe the main problem/ideas clearly, it is an indication that you understand things well.
5. Make sure you reference previous work and make sure the references are correct. Do not put in a reference without also referring to it in your proposal. (You cannot have a reference without referring to it in your text!) The reference list at the end does not count against your word limit (but you should not have to go beyond 1 page regardless).
6. Clearly explain what you are doing that is new/different/not in the papers you are referencing.
7. Details: Provide just enough information so I know that you have thought through the problem and have a clear plan. For example: I will apply these methods to a simulated data example with $p = 200$ predictors and $n = 100$ data points, with a quadratic mean function and independent errors. The data set I will use is available from the website .... and has been studied in ....
8. Explain how you will evaluate the algorithms and/or methods. Example: "I will compare Algorithms 1 and 2 on the basis of mean squared error (MSE) and average computational cost for data sets of sizes 100, 2000, and 10,000. I will derive the computational complexity of both algorithms."
9. The proposal needs to be well organized and well written. No typos, spelling mistakes or grammatical errors. If necessary, get help from other students or friends to make sure your written English is correct and easy to read.
10. Write formally, no abbreviations. Use full sentences.
11. Do not mix computing/algorithm (e.g. MCMC, optimization) with modeling ideas (Bayesian, maximum likelihood). Separate the two in your explanations and writeup.