Statistics 5314: Class Project

Proposals due on the class before spring break

For the class project, you will present either a method (or class of methods) based on a published manuscript(s) of your choosing, or your own research methodology on Monte Carlo or simulation based topics that relate to the course material. You will prepare a 5-10 page manuscript (including appendices, but not including the bibliography) that discusses the motivation for the method (i.e., what problems does it solve), the methodology itself, the method's superiority over other published techniques, and it's pitfalls (there is always something). You will need to understand the method thoroughly, have a grasp on widely known techniques that are related, implement the idea, and demonstrate it's effectiveness.

Options:

1. For those of you who present on techniques which have been published and are not your own, you will need to select a paper that has appeared after 1995. The material before 1995 is just too basic. The topic must be original work aimed at methodology development. It is not enough that you present an application study where a technique has been applied. For starters, propose 3 papers, and show them to me. I will help you to decide on which paper you should actually present (based on how likely it is you'll be able to implement the concept, interestingness, and relevance). Proposals due the class immediately before spring break. Please staple the papers together, and provide a brief statement about the topics.

2. For those of you developing your own novel methodology, propose the idea to me and I'll let you know if it's sufficient. Provide a one page summary that details the concepts in your method, and why it's a relevant problem which addresses an important problem.

Written structure

This is a very open ended assignment. Ultimately, I'd like you to treat this as a full blown research project, but many variants of this project are possible. Your report must have:

- an introduction,
- an analysis section outlining the theory, and insight behind the method,
- a results section.