STAT4893W Independent Project Guidelines

Once you have your topic approved for the independent research portion of your capstone project, you may begin working on it.

Your research needs to:
- investigate a statistical topic in some depth
- reference pertinent articles in the literature (at least 3)
- collect/find data and
- analyze and interpret the results using the methodology that is the subject of your topic.

There are four distinct parts to this project: the Idea, the Annotated Bibliography, the Draft, and the Final.

The Idea: See list of possible ideas, separately. Please email me your idea as soon as possible, preferably by this Friday. I'd also like to discuss these with you in person, perhaps during next Monday's office hours.

The Annotated Bibliography: Find at least 5 original, peer-reviewed papers related to your final paper project. For each paper, please cite using APA guidelines and write a paragraph summarizing points and ideas from the paper that you feel will be important to your final paper. This should include at least one quote and at least one paraphrasing of ideas. These should be properly referenced. Using only the abstract from the paper is not acceptable.

The Independent Research Paper (Draft and Final)

You should write *at least* 10 pages total, 12 pt. font, double-spaced, 1" margins. Follow the writing guidelines presented in class including APA format.

The writing style for the independent project is different than for the consulting project. For the independent project you can assume that the reader has a working knowledge of basic statistics, but please avoid using upper-level statistical terms without explanation.

The structure will be dependent on the topic chosen, but no matter what the topic is, I do expect there to be several sections delineated by titles. Common sections will include:

Introduction and Background:
- What motivated you to study this method? Why are you interested? Focus on the reason this technique was developed.
- What kinds of statistical problems is it good for analyzing?
- Review and discuss at least three statistical papers that define the technique, i.e., literature review.

<u>Methods and Materials</u>:
- Brief description of the data
- How is it being collected?
- What variables are being measured and analyzed?
- Is there anything special about the data such as autocorrelation?
- Brief description of the technique including statistical model
- Illustrate the technique using your data

<u>Results</u>:
- Summary and interpretation of your analysis
- R code (or any other software you use) may be placed in the Appendix. Use `Courier font` to present R results to maintain R formatting.

<u>Discussion and Summary:</u>
- What do you think of the technique?
- Is it a useful methodology?
- Relate your results to other closely related techniques currently being used
- Discuss potential issues and further research

<u>References</u>
- Should be the academic sources in your annotated bibliography, plus anything else you
- Use APA formatting

<u>Appendix</u>

Grading: I will be grading on both understanding of statistical concepts and clarity of writing, so be sure to explain . For all concepts, I do expect you to work alone and do original work. <u>Your project needs to represent your work and not that of someone else</u>. I do have access to paper-writing services on the web and will file an academic misconduct report for student who uses one of these services.

Due dates:

Idea, preferably emailed by this **Friday Feb 26.**

Annotated bibliography is due **Friday, March 11** in Moodle.

Draft is due **Friday, March 25** in Moodle. Your analysis should be done, and some attempt should have been made to write it up. Please have it to me by the 25th so I can look it over and supply feedback.

Final draft is due **Friday, April 22** in Moodle.