Applied Regression Analysis, Fall 2016

Final project

The final exam will be a project on a topic selected by the student. The topic can either be a regression analysis of an important and challenging data set or methodological work on a topic of interest regarding regression analysis. They are to result in a thorough but concise, professional quality technical research paper.

Project abstract — Due Friday, November 11, 11:55pm

One-page proposals are due, turned in through Sakai, by the deadline stated above. These spell out briefly the main goals of the study and your basic approach. Pick a subject that interests you! IMPORTANT: The problem you choose should not be something that you have already done! For example, if you have already done or are currently doing some simulations, modeling, or any other research project at work (or with me), you should not use this as the basis for your project. Some part of your instructor’s reaction to your project will also inevitably reflect the originality of your topic, so choose it with some care. This project need not be computationally expensive nor require a huge time investment in data collection. But it does need to show careful planning, good logic and the analysis concepts discussed in the course. If you are having trouble identifying a topic, please see the instructor as soon as possible.

Final paper — Due by the end of your Final Exam time block

The final product of the project will be a typed research paper, in PDF form, turned in through Sakai. The paper should include:

- Motivation for studying this problem.
- A description of data and/or methods to be used.
- Discussion of the major findings.
- A statement of the implications of your study.
- A discussion of further questions raised by your study.

Here is an example list of section headings in a scientific paper. Use this as a guide:

- Abstract
- Introduction
- Data
- Methods
- Results
- Conclusion
- References

Grading

Grades for these projects will be assigned based on the following:

- Quality and novelty of the analysis and/or methodology, 50%.
- Professional appearance and clarity of the paper, 20%.
- Thoroughness and accuracy of the report and analyses, 30%.
A non-exhaustive list of potential data sources:

- Chicago city data portal
- Metro Chicago Data
- Redfin Housing Market Data
- County health rankings
- US Census data
- National cancer institute
- DHS Program - Demographic and Health Surveys
- Illinois Department of Public Health
- Centers for Disease Control and Prevention (CDC)
- Google flu trends
- Storm events
- Airdata from the EPA
- NCDC climate data
- Climate model output
- NBA.com
- Gas prices
- Bigfoot sightings