About Final Project

Instruction

- You are expected to starting working on a real data analysis project individually with the tools and techniques we've learned. The project will be asked to be written as a short report.

- Email me a brief description of dataset including your research questions and attach the dataset before **11pm, Apr. 22ed (Sunday).**

- All statistical analyses must be performed in R software.

- The deadline to submit the written report and the R script is **11pm, May. 1st (Tuesday)** No late submission will be accepted under any circumstances. Submit via emails.

- Your report must be a **Word** document or a PDF file with at most 10 pages. Here are the required report structure and components:

  1. **Summary**: include research question, main methods and final conclusion.
  2. **Introduction**: What is the context for this problem? What kind of data were gathered? What do you hope to learn?
  3. **Methods**
     - Data visualization
     - Explain the modeling strategy and models in details
     - Results and conclusion.
  4. **Results and Discussion**: What is the final model? What is your conclusion to the research question based on the final model? Any limitation of the model?

- If you would like to do something other than real data analysis, please discuss with me. For example, you can study the algorithms and write codes for the spatial estimation and prediction without using the existing functions in R package, such as details codes for MLE, Bayesian MCMC. Or you can write models and codes for $3D$ spatial data model.

Grading

Evaluation of the final project is based on the following components:

1. Brief description of dataset including your research questions submitted before **11pm, Apr. 22ed (Sunday).** (5%). **No points will be received after deadline.**

2. Written Report and R script (95%): I will grade the report by evaluating whether the research question is well proposed, whether the analysis is appropriate, and whether the report is well organized and is written neatly and accurately,

About the data

Some possible sources of data from the web:

http://geodata.grid.unep.ch/

http://sedac.ciesin.columbia.edu/

https://glovis.usgs.gov/

https://nationalmap.gov/

https://www.census.gov/geo/maps-data/data/tiger-data.html

https://data2.nhgis.org/main

https://dnr.nebraska.gov/data

https://www.nebraskamap.gov/dataset?f%25255B0%25255D=type%3Adataset

http://snr.unl.edu/data/geographygis/index.aspx