GEOG 491/891: Special Topics - Spatial Analysis in R

Week 04.02: Term project

Dr. Bitterman

Today's schedule

- Open discussion

- Lab 1 check-in

- Building blocks of reproducible code

Anything to discuss? Questions?

How is lab 1 going?

Preferences for "wild card Friday"?

Term project/paper

- a geoprocessing or spatial analysis task of your choosing

- **must** use R, and it **must** address a "spatial problem"

- emphasize the problem you wish to solve, rather than the number of lines of code

- strongly encouraged that your project *slightly exceed* your programming skill level

Four components/deliverable:

1. Project proposal

2. In-class update (VERY INFORMAL)

3. In-class final presentation

4. Paper

Document is in the GitHub repo in the final_project directory

Deliverable 1: project proposal (50 points)

You must submit a proposal for your projet detailing the following items:

1. What is the topic area and problem of interest

2. Why are you interested in this problem/area

3. How your proposed project will make the task more efficient, more accurate, more consistent, or easier.

4. Why the problem/task cannot be solved using standard "out-of-the-box" tools from ESRI or other GIS software packages/modules.

5. What you expect the outcome of the project will be. Note, you will always provide your code, so think about how you would define "success" for your objective (e.g., a measurement of efficiency, a completed task, completed analysis)

6. Preliminary or sample data

7. Any preliminary work (strongly encouraged)

Deliverable 2: in-class project update (25 points)

You will give a 3-5 minute presentation to the class that will cover:

1. Your objectives, topic area, and/or problem of interest

2. What tools you are using to accomplish the task

3. Your current progress in accomplishing the task

4. Evidence of work

5. Any issues or challenges you have encountered

Deliverable 3: in-class final presentation (75 points)

You will also give a final presentation during the final week of class detailing the full extent of your project work and accomplishements. Graduate students will give a 10-13 minute presentation.

In this presentation, you will at a minimum discuss:

1. Your objectives/problem/task
2. How you accomplished the task - or if you did not, why not
3. Obstacles, challenges, etc. you faced during the work
4. Your results - including a discussion about how you measured success (look back to your proposal)
5. The implications of your work (e.g., for your research, job)
6. Future goals and objectives

Deliverable 4: final paper (250 points)

Your final paper will follow the standard structure of scientific article (e.g., a "mini-study") where you should provide:

1. A short introduction to the topic

2. background on how this problem and methods have been addressed in the work of others

3. A methods section detailing the work you completed

4. A results section that explains, in detail, what you accomplished.

5. A dicussion section that covers the implications of your results, including a critical self-reflection of the project

6. A conclusion that wraps everything up

Other details:

- 8-10 pages exclusive of figures

- At least two figures

- Microsoft Word document or PDF

- 1-inch margins

- Font: Times New Roman, size 12, 1.5 spacing or less

- Cite all sources using a standard referencing format (e.g., Chicago, APA, your favorite journal). However, you may NOT use an end note style.

Caveats:

- Everyone is at a different stage of their career/studies - that's ok
- Everyone has different skill levels wrt GIS, spatial analysis, and R programming - that's ok
- The point(s) is to challenge yourself, learn something new, and help move your studies, career, hobbies, etc. forward
- this is a term project, not a Master's thesis or a Dissertation chapter. Limit your scope and you'll be happier for it

The project proposal is due: 9/27 ON CANVAS (there's a drop box/assignment)

Questions?

Today's task

- Find a buddy (a different one)

- Tell them about your research interests (or your career aspriations, or something else relevant that has a "spatial problem" or a "data problem" component)

- Listen ATTENTIVELY to your buddy

- Ask at least 2 critical questions

- Brainstorm together possible directions for your (and their) project

Review and next class

- Any questions?

- This week's readings/tasks:

  - Chapter 4 in textbook

  - Practice, practice, practice

  - Keep working on Lab 1