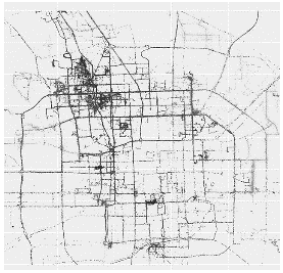
Assignments 7 + 8

(7) Descriptive and Inferential Statistics + (8) Your Permutations



Descriptive and Inferential Statistics

Directions:

Please describe how you will test to find some sort of confirmation for a hypothesis, description of a phenomenon, or some other analysis you want to perform. For example: Are you finding the difference between categories (including before and after)? Are you finding a correlation? Are you testing to see if something is likely to have come from the same sample as something else? You can also include descriptive statistics about the data as a table or in writing, but the inferential statistics are mandatory.

Your statistics can also be spatial statistics: descriptive statistics (like standard distance) or inferential statistics (like Moran's I).

Step 1: To do: Write a paragraph or more describing what you want to test and descriptive or inferential statistics you will use.

1. Do you have a hypothesis (what is it?)?
2. How will you test it?

Here are some considerations:

Think about T-tests, OLS regression, ANOVA, Kruskal–Wallis Tests, Kolmogorov-Smirnov Tests, Chi Squared Tests. You can also think about simulation methods (like Monte Carlo methods) that create distributions of data using some random inputs and compare your values to the simulated values. You can also use spatial statistics like Moran's I, Geary's C or LISA.

Your Permutation (Sensitivity Test)

Step 2: To do: In another paragraph, describe what kind of permutations you might be using as part of a sensitivity test. Are you changing the buffer size? Are you re-sampling? Are you using data from different dates? Are you 'jittering' your data? Are you using different interpolation methods, or different methods of cell assignment?

Step 3: Consider the following methods: (a) cross-validation, (b) ground-truthing, (c) computing error. (This isn't really a sensitivity test, but it is still useful to think about.)

Step 4: To do: Important: *At the end, remember to say what software you will use to conduct the analysis.*

Checklist:

- I described some statistics I will use. I gave this paragraph a heading like "Analysis Methods" (or something similar).
- I described a permutation/sensitivity test that I will perform. I gave this paragraph a heading, like "Sensitivity Test" (or something similar).
- I listed the software I will use.
- *Maybe I did something optional, like give some summary statistics of my data.*

To turn in: Please turn in your methods and description of statistics in as a word document or PDF on Canvas. You can turn in one document.