Part 2 - An Extension Plan

The Course Project

The course project consists of five parts:

- Part 1 - Common Analysis sets the stage for the subsequent assignments. In Part 1 you conduct a base analysis. All of the students in the class will conduct the same analysis, but with a slightly different data subset.
- Part 2 - Extension Plan will require you to ask a human centered data science question that extends the work in Course Project Part 1 - Common Analysis.
- Part 3 - Presentation will require you to give a modified (shorter) PechaKucha presentation of your completed project.
- Part 4 - Project Repository, creation of a fully documented repository and also requires the submission of a written project report.
- Part 5 - Peer Feedback, complete semi-structured evaluation and feedback on in-class presentations of your peers.

Extension Plan

In this assignment you are to plan an extension to the analysis that you performed in Course Project - Part 1. The overall result of your extension plan is to help inform the city council, city manager/mayor, and city residents about the potential future impacts of smoke on their community. In Course Project - Part 1 you should have developed an initial prediction model for smoke. You should take that model and modify it to estimate a specific social or economic impact on the city. For example you might choose to focus on:

a) Health care - Increase, decrease or steady state of hospitalizations, death or other disease.
b) Economics - production, worker absences, lost sales, etc. for the city's primary industries.
c) Services - impacts on service industry, restaurants, lodging, impacts on tourism, services that cater to tourism, etc.
d) Education - impacts on student learning outcomes, days in/out of school, "smoke days" vs "snow days", etc.
e) Community differences - differential impact based on demographics, housed vs unhoused, etc.

If you identify another specific social or economic focus that you would like to address, you can choose that too, but you should discuss that with a member of the instructional staff early to make sure it fits the human centered goals of this extension.

While it is not specifically a human-centered concern, you could potentially improve your smoke impact model by accounting for the azimuth between every fire event and your assigned city. If you don't immediately understand that statement and how to factor it into your smoke impact estimate, then don't do it.

When you finish the work of this extension, your results should be able to inform the city council, city manager/mayor and city residents what they might need to plan for in the coming years. In Course Project - Part 4 you will write up a report that should inform policy making by decision makers in your assigned city.

Given that your extension is defined by you, the overall goal for the **extension plan** is for the instructional staff to understand what it is you are planning to do. Further, to the extent we are able, the instructional staff's goals for understanding your extension is to make sure that you define an extension that prioritizes people, economic, social, societal concerns (aka, is human centered) and can be completed in the allotted time. Your extension plan can help us understand what you want to do by covering the following items - although these are by no means meant to be prescriptive:

1. **Motivation/problem statement:** Why are you planning to do this analysis? Why is it potentially interesting and useful, from a scientific or practical perspective? What do you hope to learn? Your motivation statement should explain how/why the problem is important to the community your analysis is designed to serve.
2. **Impact focus:** What is the focus? You can pick one of the five possible focus areas or propose a specific focus of your own.
3. **Data or model to be used**: What additional data do you plan to use, and why? Summarize what is represented in the dataset, **provide a link to the dataset**, and specify license/terms of use. Alternatively, if you plan to leverage an existing model - what is it and where is it published? What do you need to do to adapt the model to your current smoke impact model or to accommodate the specific dataset from Course Project Part 1?
4. **Unknowns and dependencies**: Are there any factors outside of your control that might impact your ability to address the supplementary questions? The purpose of this section is to get you thinking, in a practical sense, about your ability to answer the supplementary research question in the time allotted.
5. **Timeline to completion**: You should list each of the milestones and significant tasks you will need to complete the extended analysis. You might need to: collect data, build a model, test or analyze the model, visualize the results, and document your process. Think of the tasks that you need to complete. You should then provide a timeline that would allow you to complete the analysis on deadline. Keep in mind that you have a presentation (Course Project, Part 3) and final report (Course Project, Part 4) to complete as well. You'll need some time for those activities.

Requirements

Your study plan should include sections necessary for the instructional staff to understand your extension, what you plan to do, and how you will complete the work. Our rough estimate is that you should be able to **cover all of these items in 4-5 pages**.