PPHA 30560 - Data Visualization

Instructor: Quoctrung Bui

Remote learning: Tuesdays, 8:00am to 9:20am Central Time

Course overview: This course will focus on the theory and practice of data visualization. You will draw on lessons I've learned from working at the Federal Reserve, NPR and the New York Times. The course will have a policy focus which means there will be an emphasis on time-series, mapping and more analytical charts. Make no mistake, this is just a slice of what data visualization is, but the goal is to teach you forms that will be useful to you in your future endeavors.

This is a very hands-on course and will require lots of statistical and front-end programming. Expect one to two hours of hands-on work a week for students with some familiarity in programming; more if students are new to programming.

Still, the lessons should be thought of as a downpayment. My hope is that after the course, you will be able to refine your skills and make anything you desire.

Assumptions: I'm going to assume that you all know how to work with data. But I'm going to give you tools that will help you be more efficient with your work and to transform it in ways that will be useful for visualization.

Course meeting:

1. Pre-recorded tutorials
2. Live zoom lectures
3. Discussion section
    a. Discussion Section: Fri 1:00pm to 2:00pm CT
    b. TA Office Hours: Fri 2:00pm to 3:00pm CT
    c. Professor Office Hours: Thurs 4:00pm to 5:00pm CT

Grading:

1. Weekly assignments 50%
2. Final Project 50%

Weekly Assignments: I will assign them on Tuesday and they will generally be due by following Monday. They are good practice and will introduce problems you will encounter in your own work.

Final Project: Make a chart that you're proud of. It can either be a remake of something that's already published or be based on an analysis from another course.

Materials: All of the examples and tutorials will be done on a MacOs. The entire class we will be using open-source tools: D3, Inkscape, Javascript, R, RStudio.

Schedule

March 30th: Introduction.

Video lecture: Setting up your environment. R workflow.

April 6th: R and the tidyverse.

Video lecture: Let's analyze some coronavirus data.

April 13th: Sketching, cleaning, static graphics and other tools.

Video lecture: Let's make some static charts, then clean them up.

April 20st: Data visualizations on the web.

Video lecture: Let's get our web environment set up. Let's make a scatterplot.

April 27th: D3. The update pattern.

Video lecture: Let's make things dance on the web.

May 4th: D3. Interactivity.

Video lecture: Let’s play.

May 11th: Why Maps? Overview of map data. Let’s make a map.

Video lecture: Playing with mapshaper.

May 18th: Using D3 to make a map.

Video lecture: Let’s play with projections, and different types of maps

May 25th: Putting all together, Presentation + Discussion

June 1th: Putting all together, Presentation + Discussion