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Final Portfolio Essay Reflection
Honors 220 B

Final portfolio. You should pick artifacts for the portfolio that show you have met the course objectives on the syllabus. You should also include a final metacognitive reflection (no more than a page) about your learning in this class. How you structure the portfolio is up to you. You are telling YOUR story of your learning.

I've found this class has permeated all aspects of my life. As we reach the end of this course, I now look at data, statistics, and numbers as the wholly different, extensively profound pieces of the world they are. Moreover, they have an entirely new meaning ascribed to them, a story, and a story I couldn't always picture before. I am used to statistics as the interpretation of data– a thing that shows up as a phrase, table, or graph that summarizes an argument. Previously, I used them mostly in essays, lab reports, or presentations as big numbers saying important things. In Case Studies, I've used them to convey the complex relationships of groundwater, irrigation, and CO_2 emissions regarding crop stubble burning in India. Alternatively, in Mass and Energy Balances, to explain the potentially pivotal role of AI and data collection tools for expanding the Novotny Hypothesis' application in actualizing renewable goals within the global Water-Food-Energy Nexus. And even in Microbial Principles to demonstrate the capabilities of the Calvin cycle in CO_2-sequestering microalgae. My academic life as an engineering student is inundated with data– sourcing, cleaning, graphing, and turning it into these critical statistics for arguments and explanation. However, I feel that I had never truly *seen* data.

One of my first and most prominent exposures to data visualization was an artist book, "Book of Hours," by Julie Chen & Keri Miki-Lani Schroeder, contextualizing existence and documenting the pandemic years. The pages in the book reveal dots- red blips in the timeline of 2020-2021- reporting COVID-19 deaths. The exponential dots grow hauntingly month by month, with accompanying words from news headlines like "spike," "lockdowns," "siege of Capitol Hill," "explosion in Nashville," "charged with abuse of power," etc. The book was the first point where visualizing data, actually picturing it, actually seeing the story, became an art form for me.

Not an art form in the sense of existing for the sole purpose of creating art, but rather as a goal to always attempt to use data to its full boundless, multidisciplinary potential. The potential that DuBois showed the world. "Book of Hours" prompted me to take this class and embark on the profound sociological and statistical journey of W.E.B. DuBois, his visualizations, and his compassion.

Statistics have the capability to say something to say more than words really can. And yet, humankind had safeguarded their meaning to the "intellectual elite," whatever that means. And then DuBois shows up, and he pulls the world, in one powerfully intimate moment that was the Paris World's Fair, into this riveting, comprehensive, visual diegesis of social life, change, causes, consequences, and functioning of human society, from the perspective of Black Americans. He changes the way everyone thinks about data, about a plexus of social problems, and about what really is the whole story. His portraits and the surrounding work from Atlanta University are multifaceted and invite the viewer to any level of engagement. For instance, you can look at a piece on "Assessed Valuation of All Taxable Property Owned by Black People in Georgia" and see the economic growth and a swirl of multi-million dollar figures. You could see that and nothing else and still have an eloquent confrontation with civil misconstructions and historic negationism of the financial standing of Black citizens in Georgia. Or, you could see it the way Jason Forrest did in his publication, "Exploring the Craft and Design of W.E.B. Du Bois' Data Visualizations (Part 3)"– an arguably imperfect data visualization which depicts the largest value as the smallest area on the outskirts of the image, with color choices that further weaken the message and the piece's conceptual understanding– all in all, a "graphic puzzle designed to lure a curious audience and challenge perceptions." Which is precisely what it is, what all his pieces are to me.

Portraits that engage with you as much as you engage with them.

I see the piece as this buoyant, artistic confrontation of past histories and social misconceptions, balancing global economic positioning and the emphasis on where we are versus where we started– this beautiful captivation of Black resilience and economic scale.

So, it's works like this, works that encourage finding all of the story– all of the angles to engross and intermesh yourself with– that have truly altered the way I see data, statistics, and numbers. Even in a streamflow analysis examining climate resilience between the Hoh (an uninterrupted river ecosystem) and the Elwha (an anthropogenically interrupted one), I felt the impact of DuBois and this class. Instead of looking to depict typical dampened average streamflow levels, I looked for the story that wasn't being told. I looked to the annual peak streamflow to represent the ecological manipulation the Elwha had undergone. I looked for the data that could tell you something at face value, but that could mean even more if you chose to deepen your engagement with it.

This expansion of perspective, effort, and immersion in the world is an invaluable skill set I am so grateful to have gained through this course's instigation of truly learning data literacy.

But I feel sorry for my investigative method, in a way. I pried mere fragments of powerful statistical stories for analysis or understanding. By contrast, I wish I could go see these visualizations and take the time to engage with them, fully, as they were meant to. To limit a story to one sentence, a statistician's (or, in this case, a sociologist's) time and effort to one variable in a narrative of many feels… well, it feels the same as shrinking a line of collaborators and contributors to a diminutive "et al." in citations. It feels like ripping your favorite classic novel into simply the dog ear you used to mark a transformative page. It tells you there's something important there, but with only the dog ear as a clue, how are you supposed to fully grasp the work? But it gives you a launching point.

So, that's why, as the 'visual' part of my final portfolio to this class– both as an ode and an apology– I pulled snippets from each of my pieces that help convey the tiniest portion of the overall chronicle I have undergone during this course– fragmented sentences of a much larger story.