***Project 2 - Carbon Footprint***

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# Domain

The data domain will be web-accessible studies and datasets regarding carbon footprint and emissions statistics, broken out by country as well as individuals vs. industries. The following bibliography is a list of data and statistics to be used as starting points.

**Bibliography**

Biewald, L. (n.d.). *Deep Learning and Carbon Emissions*. Towards Data Science. https://towardsdatascience.com/deep-learning-and-carbon-emissions-79723d5bc86e

Bouley, C. (n.d.). *A Simple Linear Regression Model*. Towards Data Science. https://towardsdatascience.com/a-simple-linear-regression-model-f2a53ed61a21

United States Environmental Protection Agency. (n.d.). *Greenhouse Gas Inventory Data Explorer*. United States Environmental Protection Agency. https://cfpub.epa.gov/ghgdata/inventoryexplorer/

United States Environmental Protection Agency. (n.d.). *Sources of Greenhouse Gas Emissions*. Greenhouse Gas Emissions. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

Willis, S. (n.d.). *Concerning Climate*. Towards Data Science. https://towardsdatascience.com/https-medium-com-stephaniewillis808-concerning-climate-5a6b923eb8eb

# Data

There are a number of datasets I’d like to investigate. Basically, what I am going to attempt is to compare the carbon footprint of individuals vs. industries, and across countries. One primary source for data is the EPA’s Greenhouse Gas Data Explorer (noted in the bibliography above). In fact, the EPA has a number of pages with inventories and statistics. In addition, there are sites with emissions calculators that might prove to be insightful.

# Research Questions

1. What are the carbon footprint metrics for major industries?
2. Can these be differentiated by country?
3. What are the trends over time (years, decades)?
4. Can a reasonable carbon footprint be calculated for an individual?
5. How much will that vary by country?
6. Can we come up with an equivalent number of humans for a give industry?
7. Stated another way--for instance--how many humans equal an airliner? A cruise ship? A coal fired power plant?

# Why analyze these data

I’m all for doing my part to reduce my personal carbon footprint. But if my “sacrifice” for say, a year, is negated by a handful of flights of a jumbo jet, what’s the point?

# Benefits

Well, maybe the point is, to use that comparison above, is to hold industry accountable to sacrifice as much as every human who decides to sacrifice. We can’t do this without factual metrics and analysis.

# Method

There will be little, if any, application of Machine Learning; Instead, I will be leaning more in the direction of statistical and possibly predictive analysis.

# Potential Issues

As I review different sources of data and information, one concern I have is most of what I’m finding is somewhat dated. Although the EPA data runs to about 2019, most of the other sources I’ve investigated only run to about 2017.

# Concluding Remarks

The very first semester project I did for this program, back in DSC 500, was titled, “Shining a Light on Global Warming and the Blindness of Politics”. On my poster I included a picture of my granddaughter, Zoe, who was only six at the time (she is 9 now, and my bff). This is what I wrote for my Conclusion (or, why should you care?)



Not caring is tantamount to standing idly by while power and big money systematically destroy the planet. Actually, I’m not sure it’s my place to tell everyone why they should care. I can tell you however, why I care. This is my six-year-old granddaughter. Long after I’m gone I hope she has a planet left where she can thrive.

I think that, at 61, my position in life is probably quite different than my classmates. My interest in Data Science is really, what good can I do, once I retire, with the years I have left? The answer to that is above. I can do my part to make things better, using what I’ve learned in this program. I’ve always had a big mouth; this is my opportunity to put it to good use.