

DATA 608: Final Project Proposal

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Task

You must submit a proposal for your project by 11/04/18. This proposal must include:

- a link to the data source
- an explanation of what you want to show
- why this is relevant to a current policy, business, or justice issue
- which technologies you plan to use

Your instructor must approve this proposal: you may have to refine this somewhat.

Proposal

The data sources will be:

- Home energy usage data from my own house from August 1st, 2017 through September 30, 2018. After having exported from the device (reference: <http://eyedro.com/how-to-export-to-excel-from-myeyedro/>), the data is now stored in my GitHub repo:
 - <https://github.com/anrcarson/CUNY-MSDA/tree/master/DATA608/FinalProject>
- Global yearly average temperatures:
 - <https://climate.nasa.gov/vital-signs/global-temperature/>
 - https://climate.nasa.gov/system/internal_resources/details/original/647_Global_Temperature_Data_File.txt
- Global energy/fuel usage:
 - <https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T01.01#/?f=A&start=1949&end=2017&charted=4-6-7-14>
- Global CO2 emissions:
 - http://cdiac.ess-dive.lbl.gov/trends/emis/tre_glob_2014.html
 - <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>
- Local weather history to Seattle, WA:
 - <https://www.wunderground.com/history/monthly/us/wa/seattle-boeing/KBFI/date/2017-8>

I want to show:

- A visualization of the relationships between global energy usage, CO2 emissions, and global average temperatures. This motivates why such an analysis is important.
- A visualization showing how home energy usage relates to various factors responsible for my home energy usage increasing/decreasing, including: local temperature, time of day, day of week, month, and appliances/devices in use.

This is relevant to current policy, business, and justice issues because:

- The environmental effects of global warming are having and will continue to have a negative impact on people around the world, in particular, on the poorest and least capable of adjusting to the change through the use of resources. In addition, the higher cost of cleaner alternative energy will be more burdensome to the poorest people and countries. This is a justice issue.
- How global warming is combated is a matter of US and world policy, from reducing carbon emissions to using alternative energy sources.

- Reducing energy usage (when burning of fossil fuels for energy production to sustain energy consumption is contributing to global warming via CO2 emissions) is one way of combating global warming (less energy consumption means less need for fuel production means less CO2 emissions). Hence, it is important for businesses and homeowners to understand what factors increase energy usage and what might be done to reduce energy usage.

Technologies being used for the final project:

- Shiny: I plan for a shiny app to be the basis of my visualizations
- R Markdown/Blogger: for any write up, I will use R markdown or post directly to my professional blog.
 - <https://philanalytics.blogspot.com/>
- plotly, d3, ggplot: while I may have to fall back on ggplot, I intend to use plotly and d3 for my visualizations.