

Analyzing Climate Change: The Evolution and Public Opinion

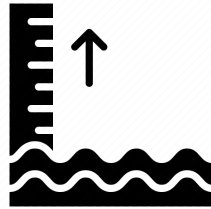
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Motivation: Part 1

Effects



GLOBAL WARMING



RISING SEA LEVEL



FOREST FIRES

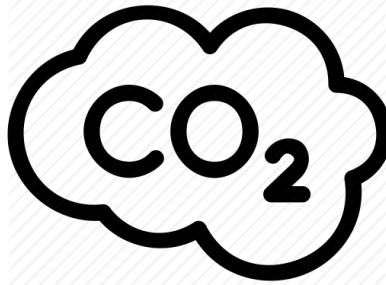


BIODIVERSITY LOSS

Causes



DEFORESTATION



EMISSIONS



FOSSIL FUELS

Motivation: Part 2

- “Climate change is a hoax”
- “There is no scientific consensus”
- Accepting it threatens to make life inconvenient
- We NEED to raise awareness, education
- Transition to more sustainable way of life
- **Audience:** everyone, especially those in denial



Research Questions

Area 1: People's attitudes towards climate change

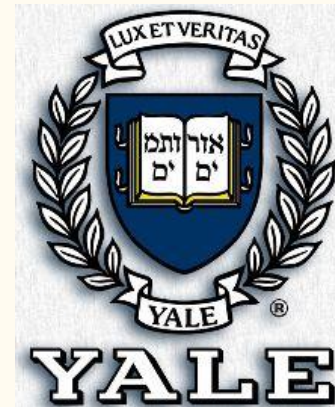
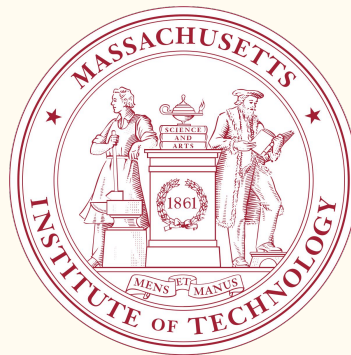
- What factors motivate people's belief systems?
- Political affiliations, state surface temperature, renewable energy generation

Area 2: Global warming

- What will global surface temperature look like in the future?
- How does nonrenewable energy consumption affect the Earth's temperature?

Data

- MIT Election Lab data
- YPCC climate survey data
- Berkeley Earth dataset (Kaggle)
- Energy Information Administration data

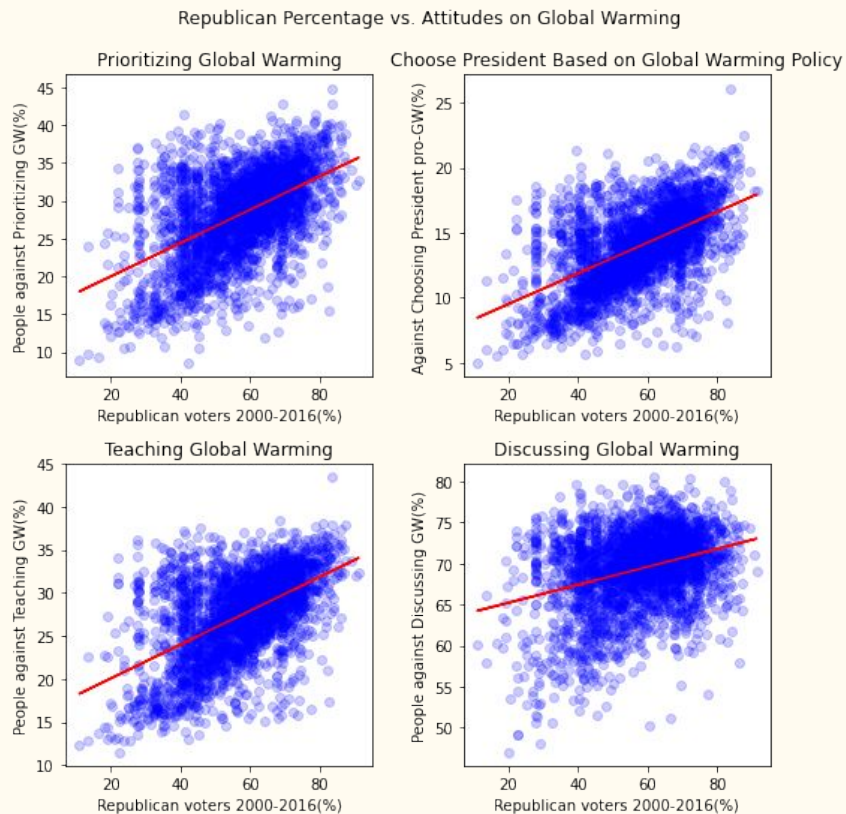


Techniques Used

- Data Engineering
- Visualizations
- Hypothesis Testing
- Time Series Analysis (ARIMA)



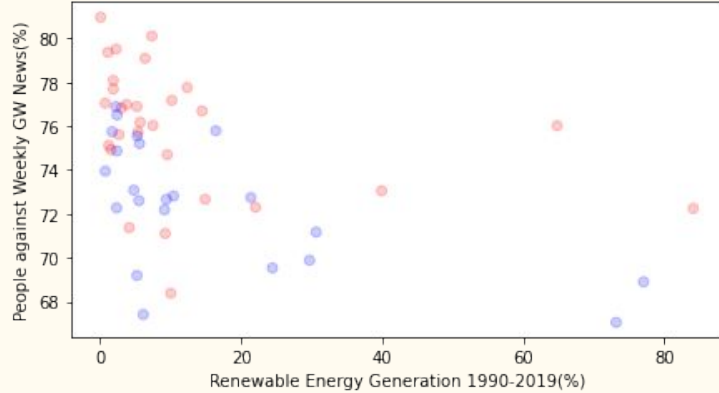
Discoveries!



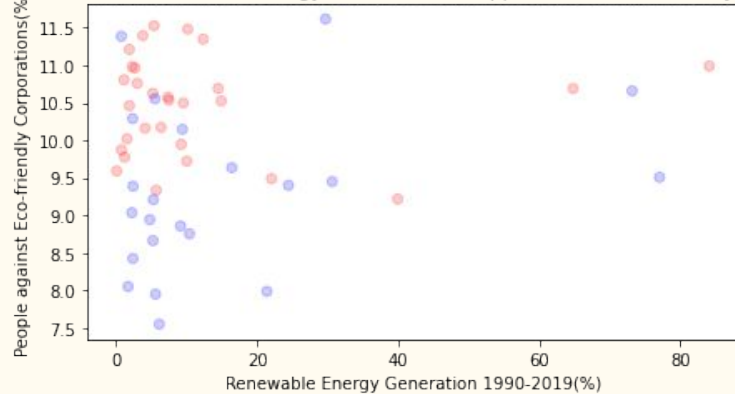
- Effect of political affiliations on views about climate change
- County-wise analysis
- Hypothesis: Republican counties likely to have greater survey percentages opposing ideals of climate change and policies to mitigate global warming, than Democratic counties
- $p\text{-value} = 4.33e-44$
- Can reject null hypothesis with 95% confidence

Statewise Effect of Renewable Energy Generation on Global Warming Attitudes

By State Effect of Renewable Energy Generation to Weekly Global Warming Related News Opposition

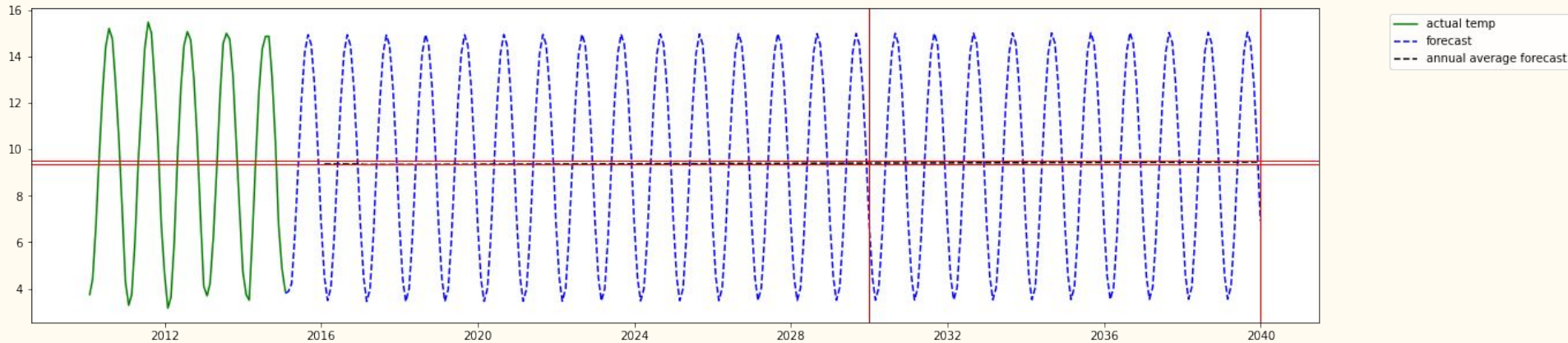


By State Effect of Renewable Energy Generation to Opposition of Eco-Friendly Corporations



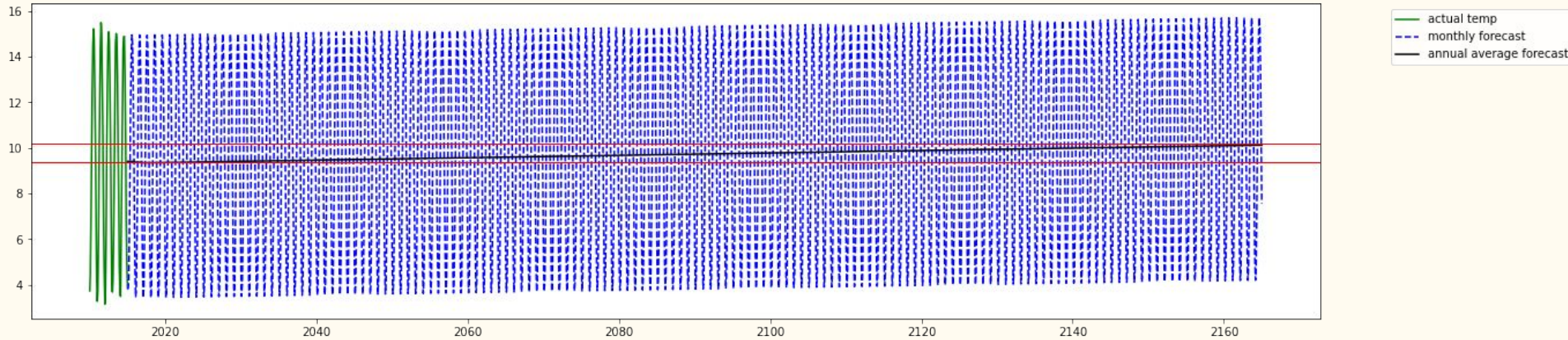
- Red states display higher percentages of people voting against eco-friendly corporate practices
- There are significant overlaps and outliers
- Equal distribution of both red and blue states with high and low renewable energy generation
- Seemingly vague downward trend in graphs, nothing conclusive

Time Series Analysis



- Black line forecasting temperature might seem non-increasing
- In fact, it is: projected increase in temperature is 0.12 degrees Celsius

Time Series Analysis: 150 years later



- Black line forecasting temperature shows obvious increase
- Projected increase in temperature is almost 1 degree Celsius: 10.2 deg Celsius
- **Call to Action: Educate yourselves and other on climate issues! Act sustainably!**

Thanks!



Image Sources

- [Sea level rise](#)
- [Global warming](#)
- [Forest fire](#)
- [Biodiversity](#)
- [CO2 emissions](#)
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- [Head in sand](#)
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