

Predictive Climate: Data Estimating Future Weather Patterns

A DS 4002 Case Study by Enmanuel Baez



Background:

Imagine that last year you were planning to celebrate your birthday the upcoming weekend, on the Lawn. You love being outside with your friends, basking under the sun, and throwing the frisbee around. You wouldn't have it any other way! Your big day finally arrives, you excitedly look outside the window looking forward to the blue skies and the rays of sunshine. Sadly, you instead are met with cloudy gray skies. Your birthday plans get canceled and now you are stuck at home, thinking to yourself "I should've checked the weather, thought of something else to do!"

Weather forecasting has been a tool used for hundreds of years, allowing civilizations to adequately plan for upcoming climate. Anemometers, radars, satellites, and even wind vanes have been utilized to tell people what to expect from upcoming weather. However, for this case study, you will be tasked to use a different tool to predict climate. You will be using data! Hopefully this way you will be able to better plan for your next birthday celebration.

Deliverable:

You don't want a repeat of what happened last year. You want to make sure you select an appropriate activity for your birthday celebration this year. For this, you need to know what to expect for your birthday, happening this weekend! To achieve this, you will use National Centers for Environmental Information to form. You will form a multivariable regression analysis on a weather parameter of your interest to see how well other independent variables are able to predict your studied variable, through the comparison of p-values. You will also create plots and charts to present this information to stakeholders. This will not only allow you to observe trends in the data, but provide supportive/counterfactual evidence for your statistical findings. Write a detailed summary of the steps you took for the project along with an explanation of your results.