

Create a short 1-page project proposal that covers the following:

1. Project Title:

- ❖ Machine Learning To Predict Annual CO2 Emissions

2. Team Members:

- ❖ Khoi Duong

3. Project Description/Outline:

- ❖ According to the Paris Climate Agreement of 2015, the global goal is to limit the overall increase in global temperature by 1.5°C or less from the average prior to pre-industrial times. Determining how to calculate the starting temperature is controversial, but for the sake of argument, we took the average temperature in our dataset for 1850, which was around 14.87°C or 58.76°F. An increase of 1.5°C would be 16.37°C or 61.47°F.

4. Research Questions to Answer

- ❖ When will the temperature rise to a dangerous level of 16.37 °C /61.47°F?
- ❖ When will Earth reach the concerning temperature?

5. Datasets to Be Used

- ❖ Data Sources:
 - <https://www.kaggle.com/berkeleyearth/climate-change-earth-surface-temperature-data#GlobalTemperatures.csv>
 - <https://sealevel.nasa.gov/understanding-sea-level/key-indicators/global-mean-sea-level/>
 - [https://population.un.org/wpp/Download/Files/1_Indicators%20\(Standard\)/EXCEL_FILES/1_Population/WPP2019_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx](https://population.un.org/wpp/Download/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2019_POP_F01_1_TOTAL_POPULATION_BOTH_SEXES.xlsx)
 - https://ourworldindata.org/grapher/co-emissions-per-capita?tab=chart&country=USA+CAN+USA+OWID_WRL
 - <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

6. Rough Breakdown of Tasks

- ❖ Compared data on temperature, sea level, CO2 emissions, and population from 1993-2015.
- ❖ Create analysis explaining trends of population, CO2 emissions, temperature, and global mean sea level.
- ❖ Leverage machine learning to create a forecast
- ❖ Used sklearn and Prophet along with visualizations.