Fire Watch – Wildfire & Air Quality Analysis

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Introduction

For our project, we looked into US wildfires and air quality databases to visualize major US hotspots and to forecast air quality. Our motivation is to provide information to those affected by wildfires in an easy to use and meaningful way.

Our Approaches

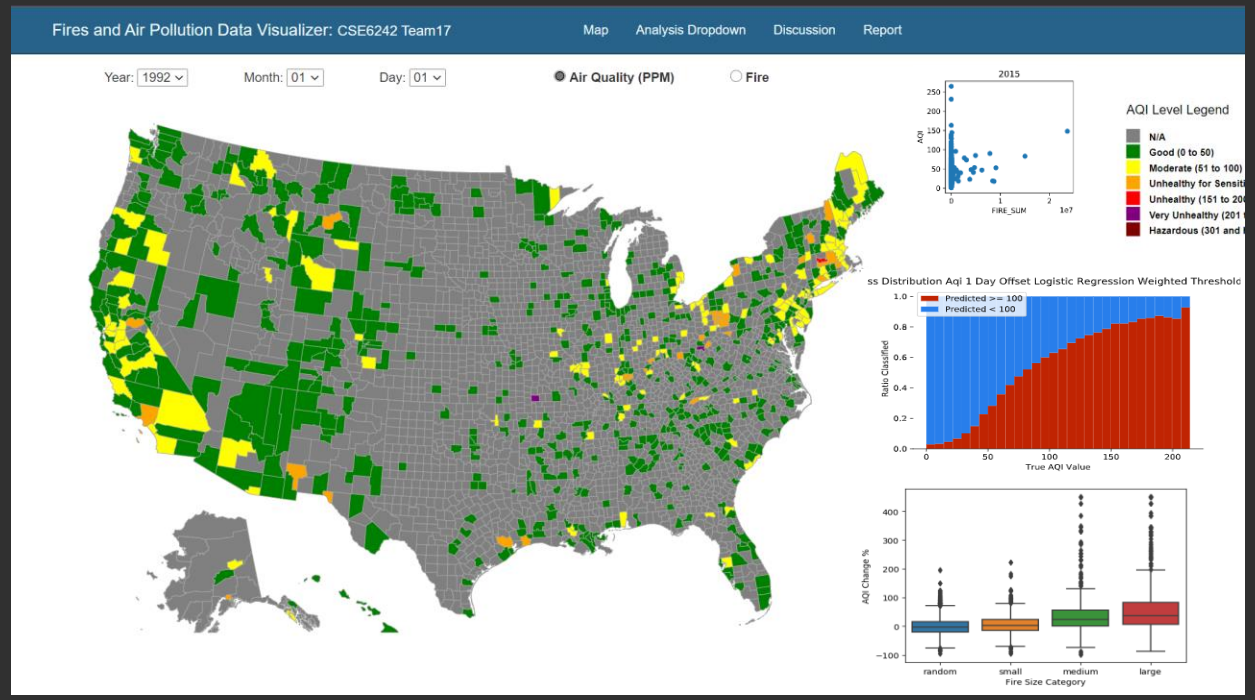
Visualization: Overlayed the data onto a map of the US and displayed past ongoing fire sizes and air quality levels. Dropdowns for time range, a toggle for fire data and air quality data and tabs for analysis result are also presented.

Forecast: Predict hazardous air quality for the next week based on air quality and wildfire data

Correlation Analysis: Visualize AQI vs Wildfires in several aspects to determine if there is a correlation

Data

AQI: United States Environmental Protection Agency
Wildfire: National Wildfire Coordinating Group



Experiments

7-Day Hazardous AQI Forecast: Regression (Logistic Regression)
AQI & Wildfire Correlations: (Scatterplots, Clustering)

Result

1. Large wildfire does show correlations in AQI change
2. Wildfire may not be the main factor predicting AQI
3. However, valid groupings of fires can be obtained with better features.