Emily Hillenbrand
Metis Data Science
Project 3: Classification

Predict Causes of Wildfires

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PROBLEM

During the last few summers in Seattle, we were shrouded by a poisonous, irritating miasma of wildfire smoke for weeks at a time. We saw the air quality index venture well into "very unhealthy", and I know more than a few people who were forced to stay indoors for that reason. On some days, air quality in Seattle--usually uniquely clean and pleasant--was among the worst in the world.

Wildfires are often, if not always, caused by humans. By examining data on wildfires in the United States over time, I hope to create a model that can predict what conditions correlate with different types of wildfires to identify patterns that can aid in response or prevention efforts.

GOALS

1. Build a model for predicting the cause of a wildfire given the size, location, date, and other factors.
2. Identifying the most frequent causes of wildfires of a particular set of conditions can inform where prevention efforts should be focused.

DATA

All data will come from this Kaggle dataset given as a SQLite database:
https://www.kaggle.com/rtatman/188-million-us-wildfires

MILESTONES

Minimum Viable Product (MVP)

A MVP would show the most likely cause of a fire given the fire's location (county, state, or region).

Stretch Goals

After the MVP is made, I can add in other variables like fire size, time of year (e.g. fireworks might be the more likely cause of wildfires near July 4), how much time it takes to stop the fire (might be closely related to fire size), frequency of fires in that region, et cetera.

KNOWN UNKNOWNS

1. Work with a database in SQLite format
2. Identify which location variable is significant
3. Does the most frequent cause of a fire change over time? Is this significant?
4. The dataset only goes to 2015. Is this relevant to the fires that caused the smoke in Seattle in 2015-2018?

ADDITIONAL NOTES

If you are concerned about the effects of wildfire smoke, the City of Seattle has compiled a useful list of steps you can take to prepare and protect yourself.
https://www.seattle.gov/mayor/wildfire-smoke