Wildfire Prediction:

A Classification Problem

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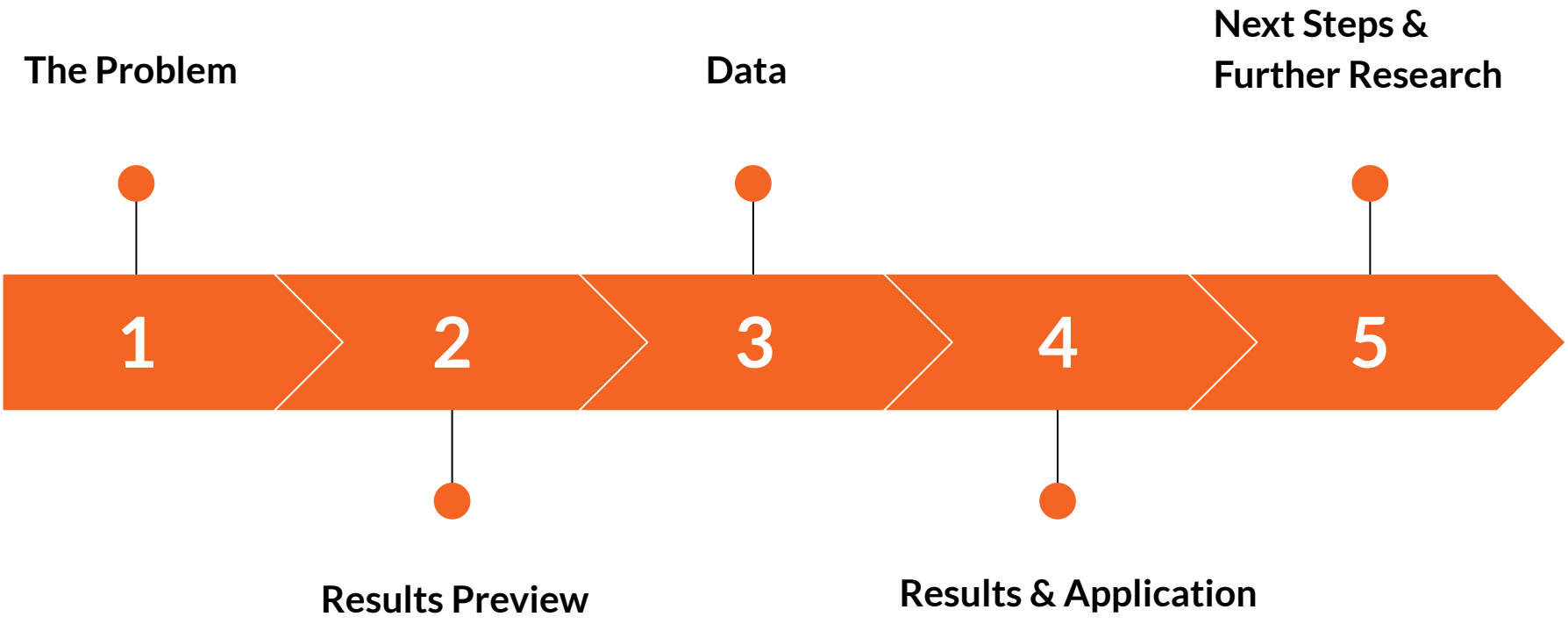
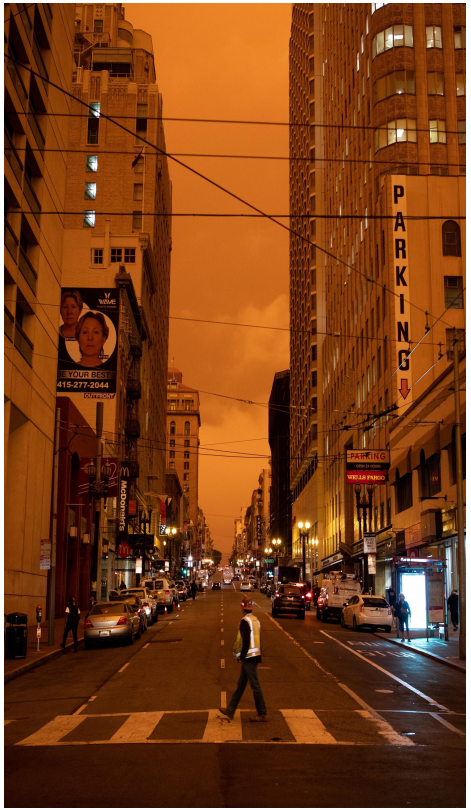

The Problem
Data
Next Steps &
Further Research
1
2
3
4
5
Results Preview
Results & Application

Climate change is exacerbating wildfires

Our goal:

Predict which fires will become “catastrophic,” and aid fire departments in decision making and resource allocation



Our Results

Interpretability

Identified conditions that lead to large fires

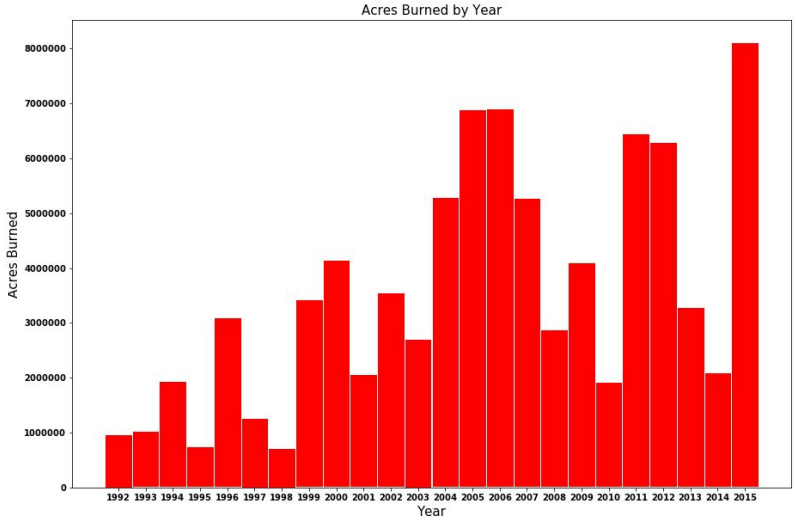
- Remoteness of Location
- Lightning Storms
- Wind Speeds
- Geographic Location

Predictive Power

Created models to accurately predict size of fires

- F1 = 0.82
- Precision = 0.98
- Recall = 0.70

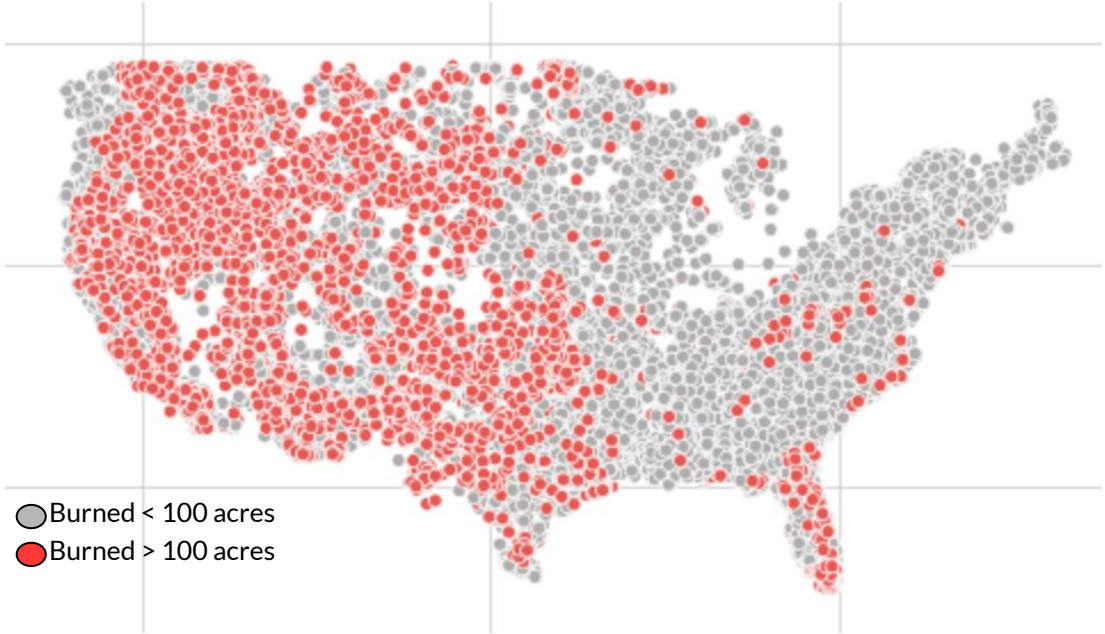
The Data



Retrieved From

- Forest Service Research Data Archive
- NOAA National Centers for Environmental Information

Our Process

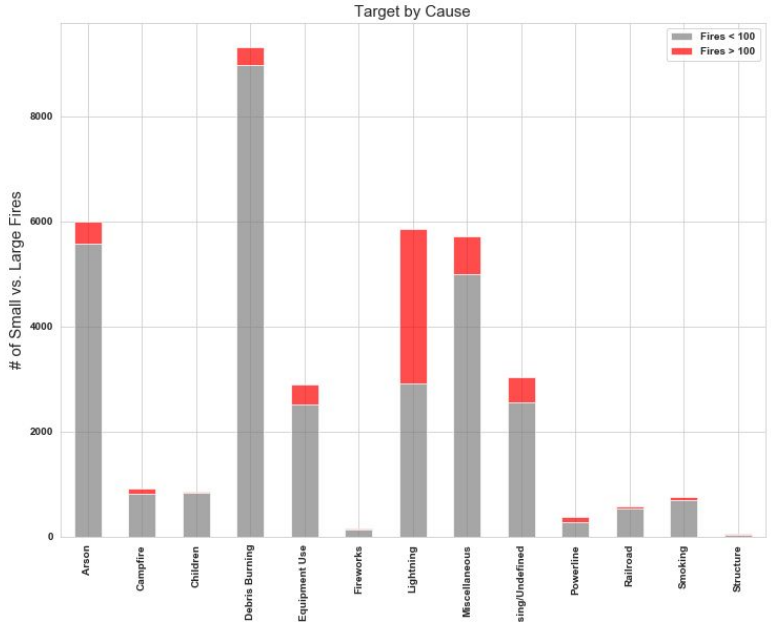


Wildfires in US, 1992-2015
(Not pictured, AK, HI, & PR)

Feature Engineering

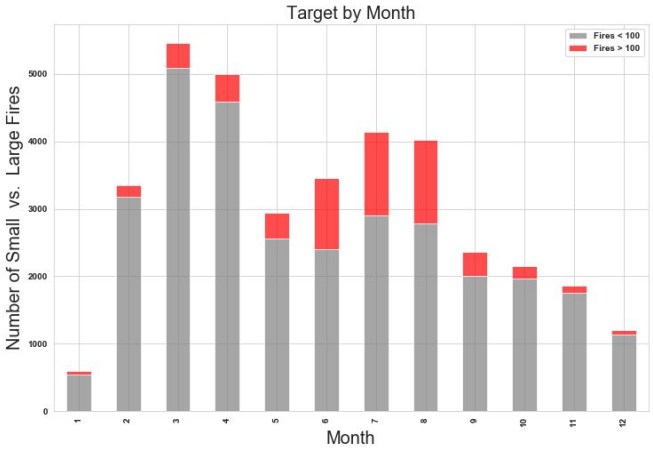
- Categorical Dummies (Vegetation, State, Month)
- Remoteness
- Location in US
- Wind Speeds
- Humidity Levels

Results



1) Catching a fire early will reduce risk of a fire getting out of control

2) Climate during start of fire



Next Steps & Further Research

More Data

- Nearest Road
- Nearest Fire Tower

More Clear Features

- Meaning of some features

Focus On Western United States

Thank you!

Questions?

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