

Predicting Wildfire Causes

A dramatic photograph of a forest fire at night. The scene is filled with intense orange and yellow flames rising from the trees, with thick black smoke billowing into the dark sky. The fire is widespread, with many tall, thin trees visible, some of which are completely engulfed in flames. The overall atmosphere is one of a major disaster.

Asmita Gokhale

California Says PG&E Power Lines Caused Camp Fire That Killed 85

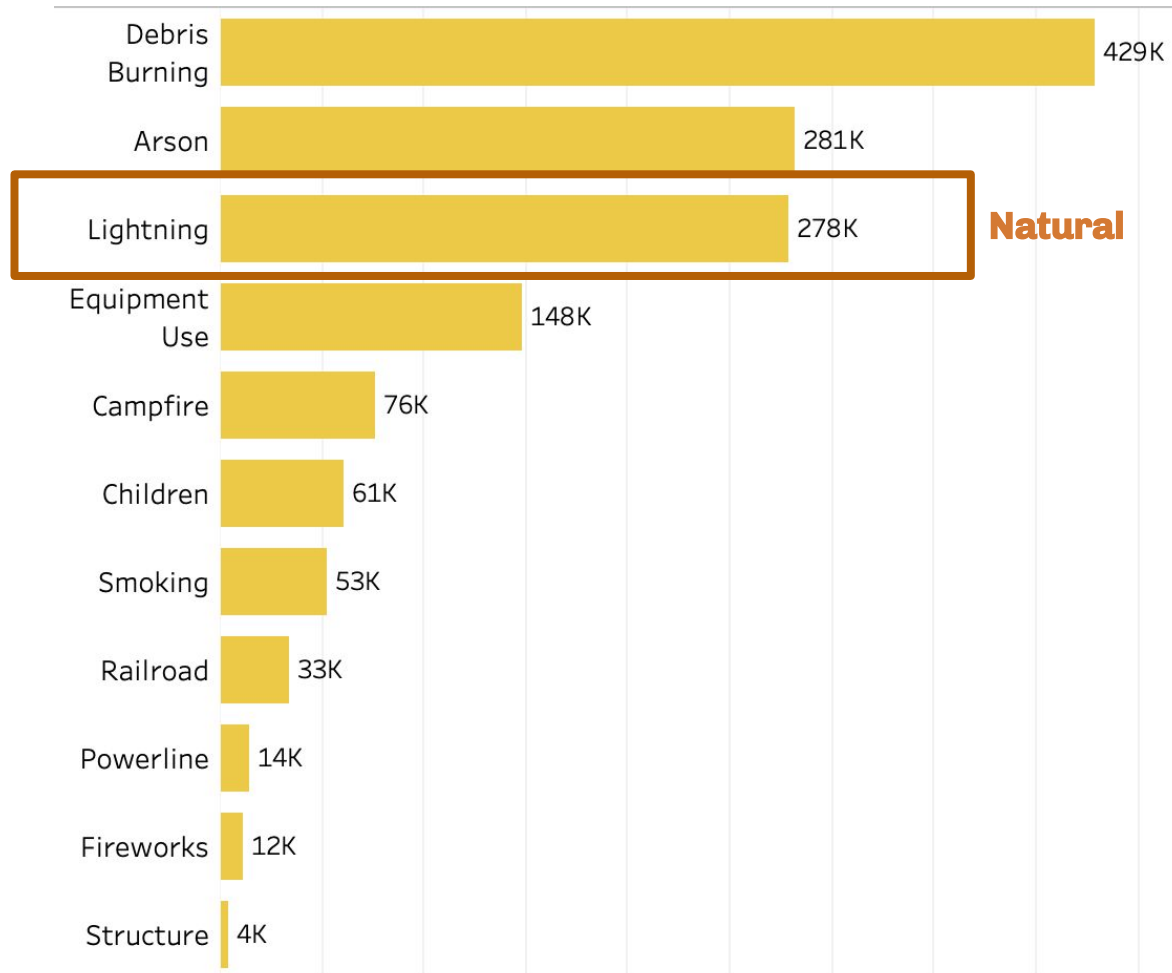


- Nov 2018 Camp Fire caused \$10B in damage
- Investigation concluded that it was caused by transmission lines
- PG&E liable for the damages

US Forest Service wants to investigate causes of wildfires

Data Used

- FPA Fire Occurrence Database (1992 - 2015)
- Multiple causes collapsed to -
 - Natural
 - Human Caused



Interactive Dashboard



We want to capture all human caused fires

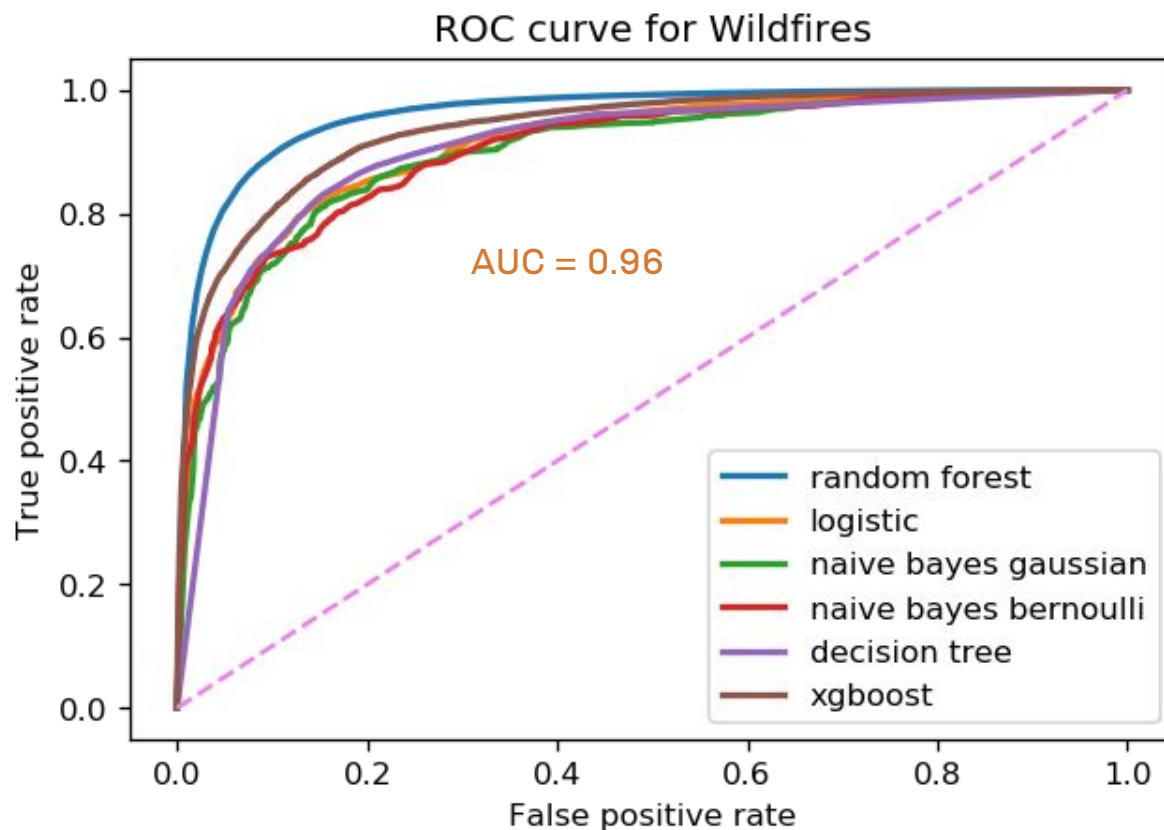
**Even if some of them turn out to be
natural fires**

**i.e. optimize for
Recall**

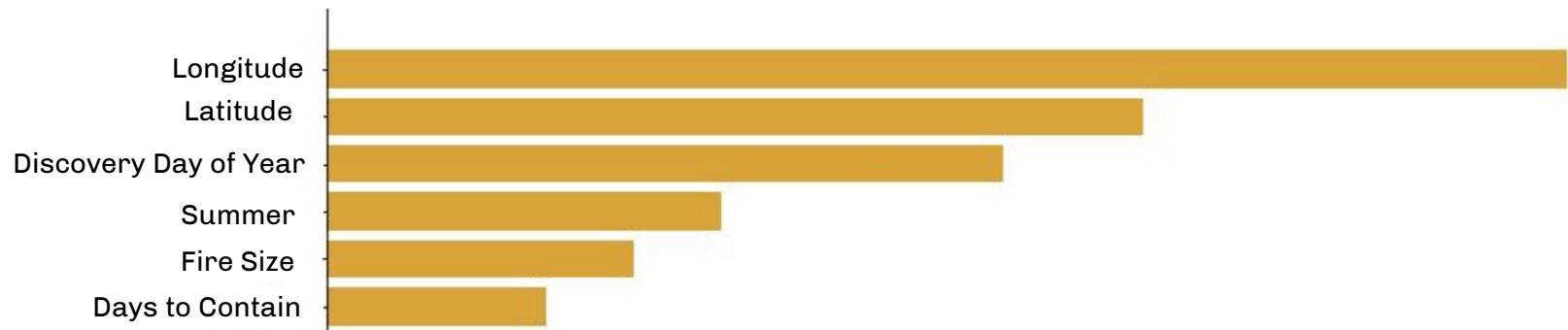
Model Selection

- Logistic Regression
- Naive Bayes
- Decision Tree
- **RandomForest**
- XGBoost

Recall = 0.99 @ 0.90 Precision
(Threshold = 0.20)



Top Features - Random Forests





**CausePredictor app will help
USFS prioritize which fires to
investigate**



Questions?