



SAFETY FIRST: *Classifying Fatality in Traffic Accidents*

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“Washington State has adopted **Target Zero** – a goal to reduce traffic fatalities and serious injuries on Washington's roadways to **zero** by the year **2030**.

“Our goal is zero deaths and serious injuries, because **every life counts.**”



Data



Person



Vehicle



Accident

Model: Decision Trees

Boosted with “CatBoost”

INPUTS:

67 features

48K observations

TRAIN:
38K

TEST:
10K

OUTPUTS:

Feature Importance

Most Harmful Event

Person’s Age

Vehicle Damage

Restraint Use



89%

Accuracy

How often we were right

80%

Precision

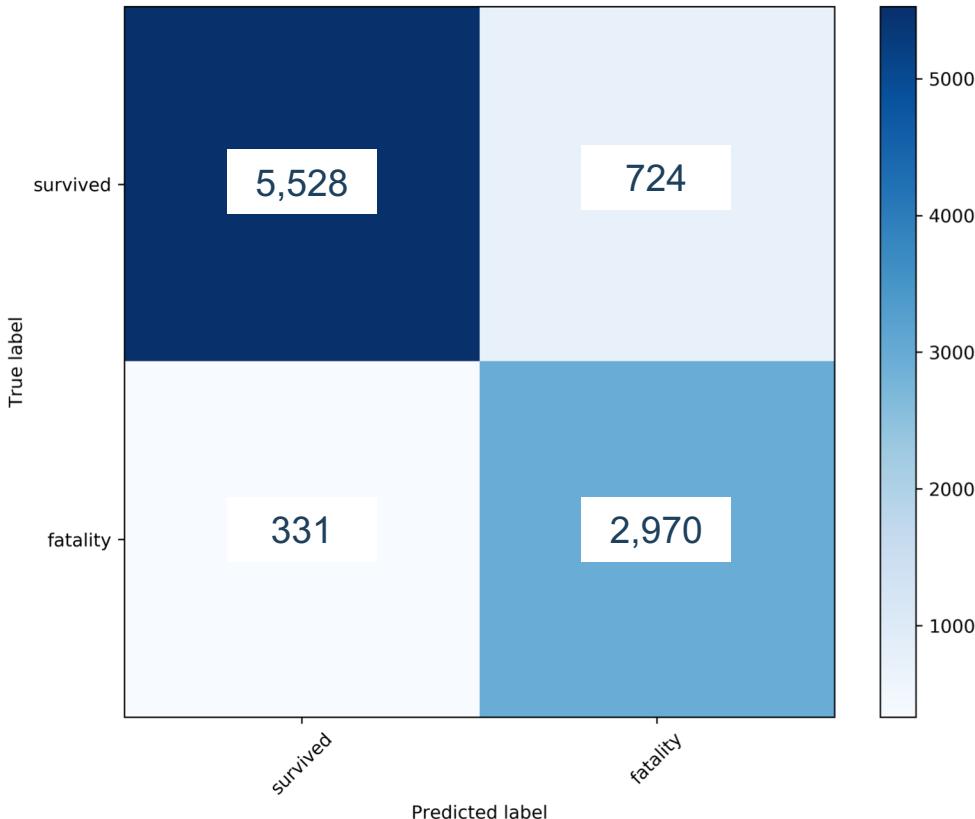
Avoiding false positives

90%

Recall

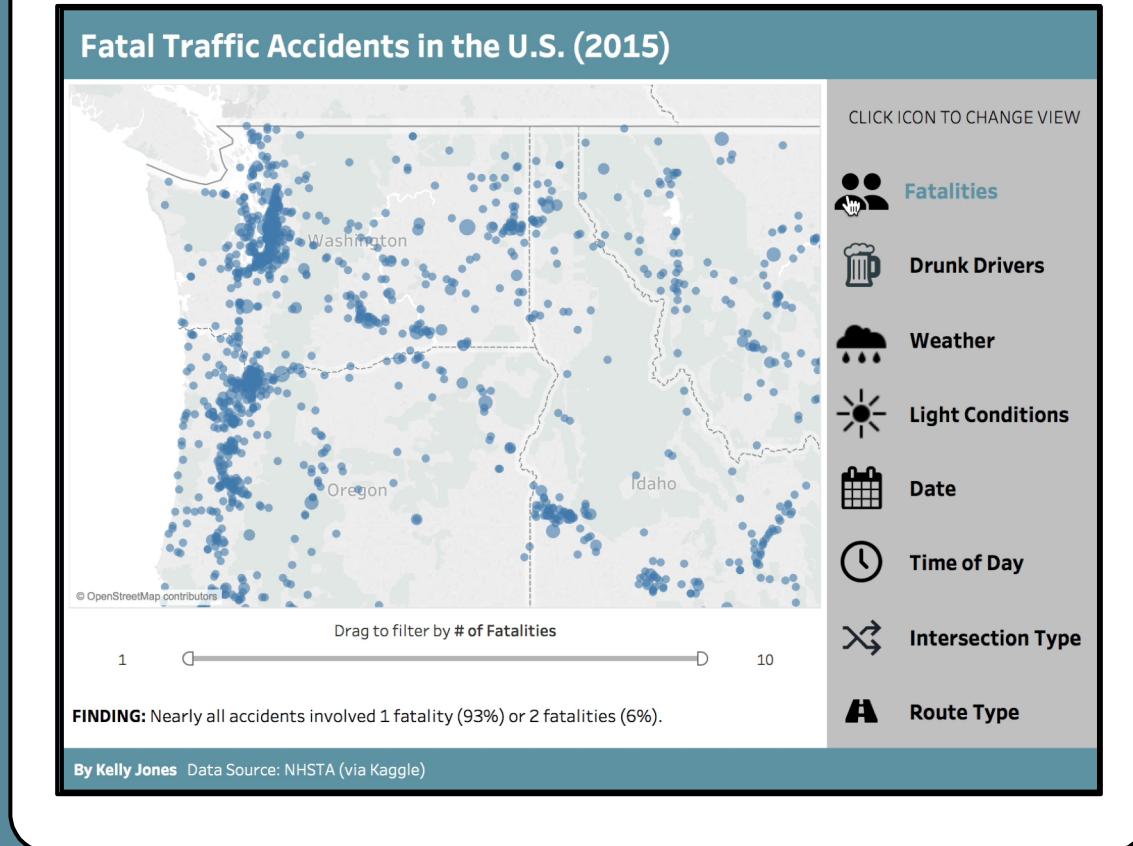
Detecting true positives

Confusion Matrix



2. *Tableau Dashboards*

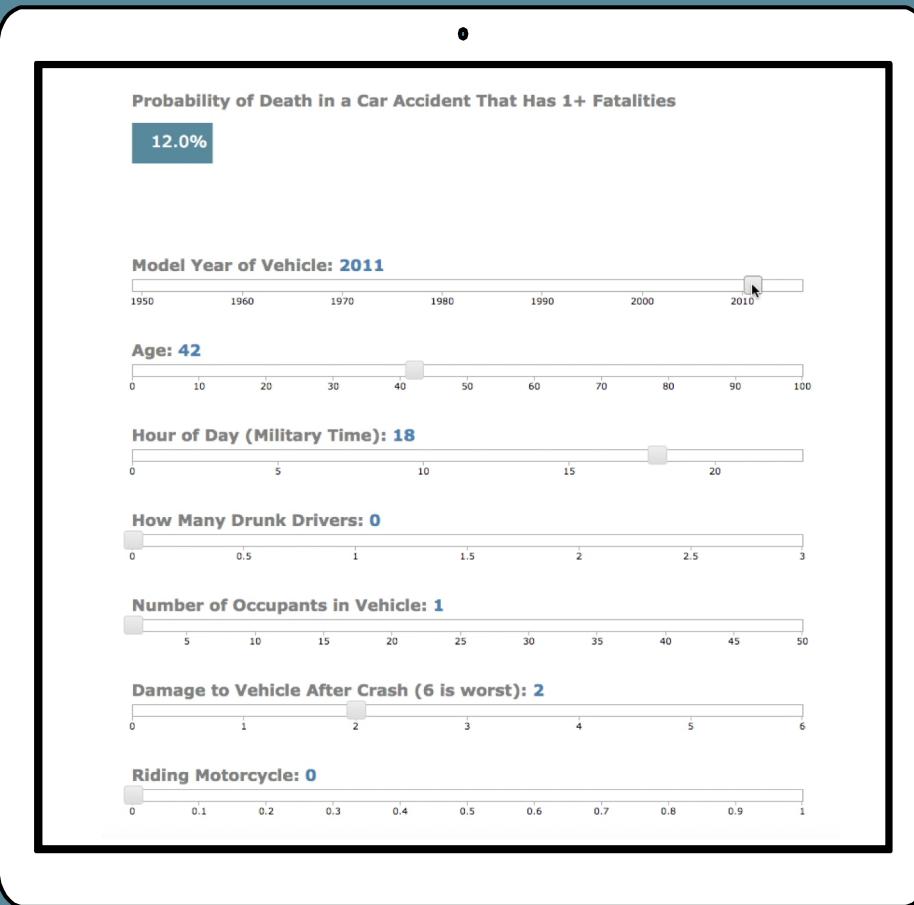
Explore accident data
nationwide



3. *Flask App*

Move sliders to get probability estimate of fatality

Model:
Logistic Regression





Next Steps

Event Sequence (Accident) ◆ Further Feature Importance ◆ Normalized Analysis by State





*THANK
YOU!*