



The American **WAY?**

An Analysis of School Shootings and
Gun Laws in the United States

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Overview

1

BACKGROUND

History of school shootings in the US

3

CONCLUSION

The main takeaways from the data

2

ANALYSIS

Graphs and models and numbers...oh my

4

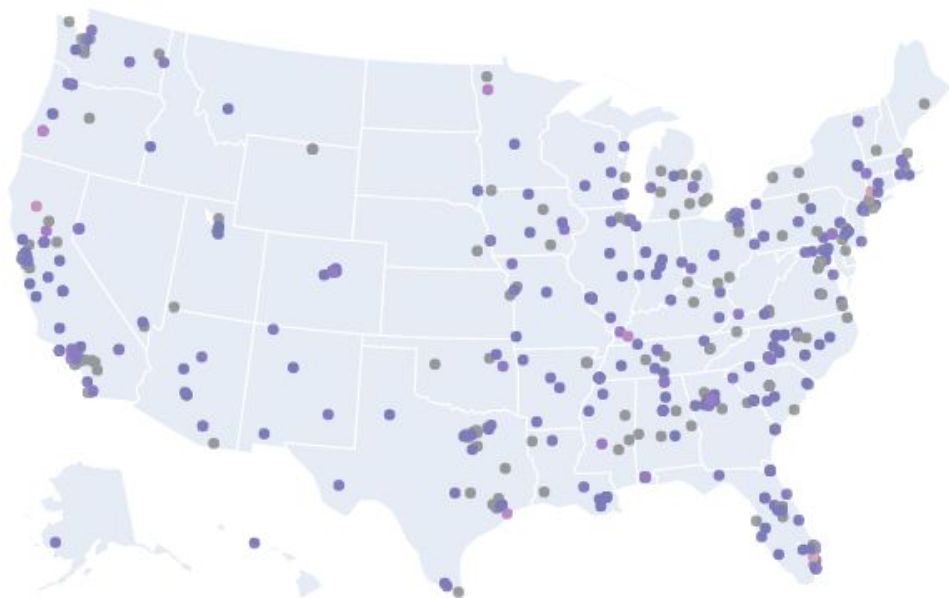
NEXT STEPS

With more time what would be possible...





School Shootings in the US



1

California has
the most with
77 since 1990

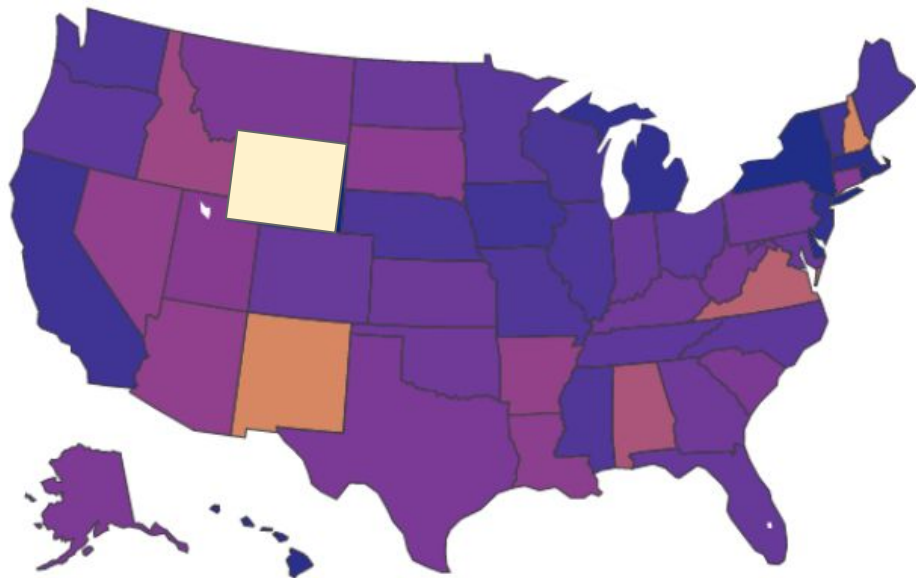
2

North Dakota
has the least
with 0 since
1990





Number of Guns Per Capita



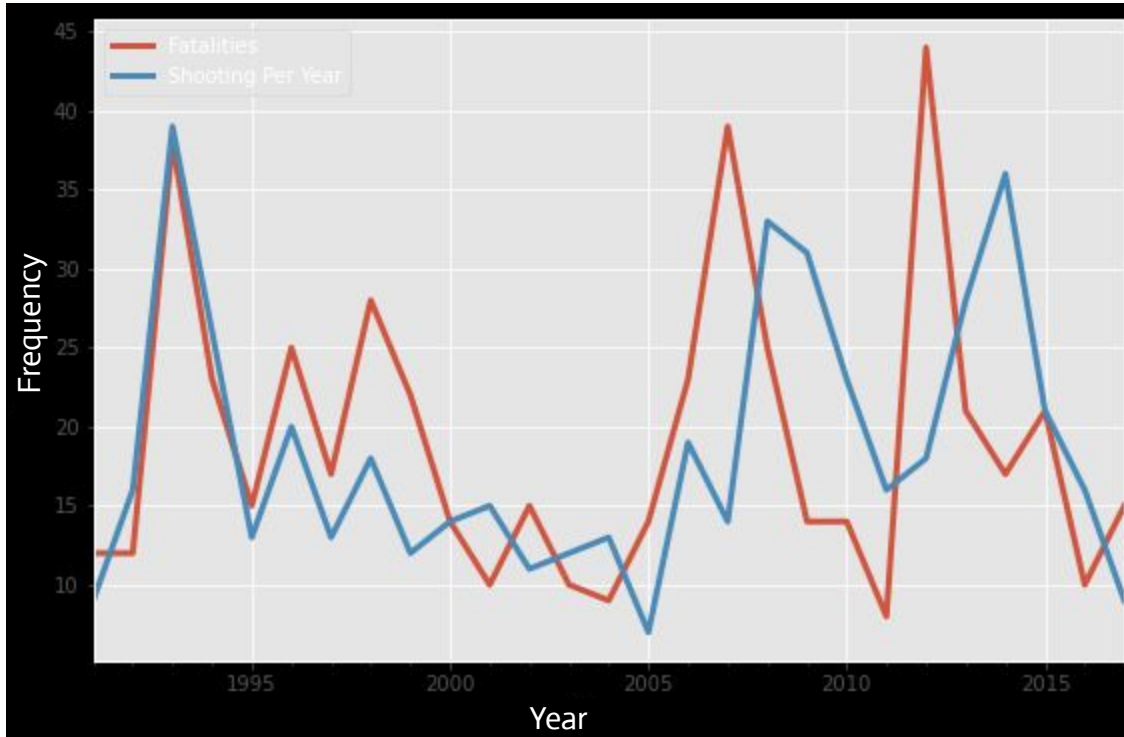
of guns per capita



The Data

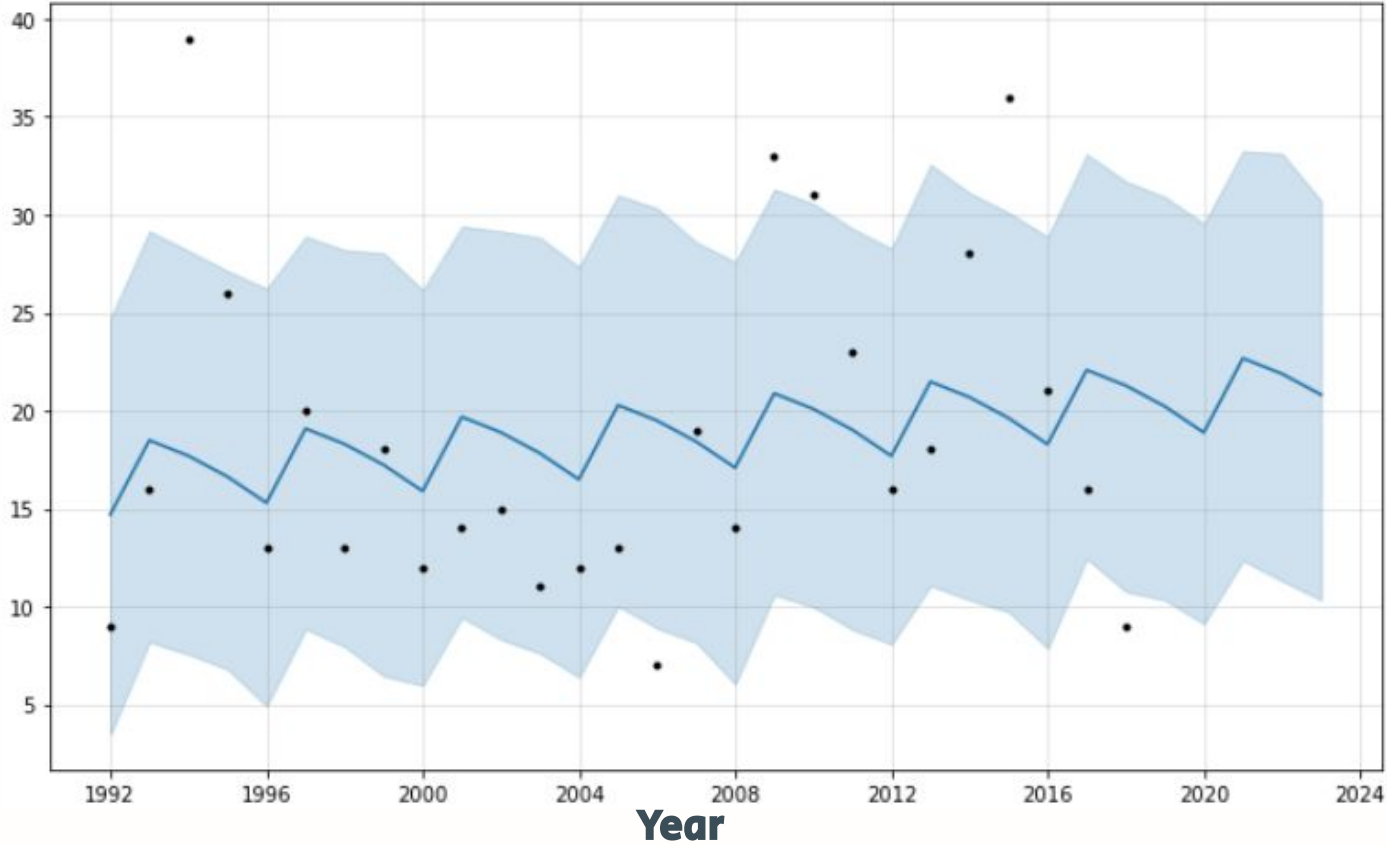
- Two datasets:
 - US School Shootings since 1990
 - US Gun Laws from 1991 - 2017

US School Shootings: Fatalities and Number of Events



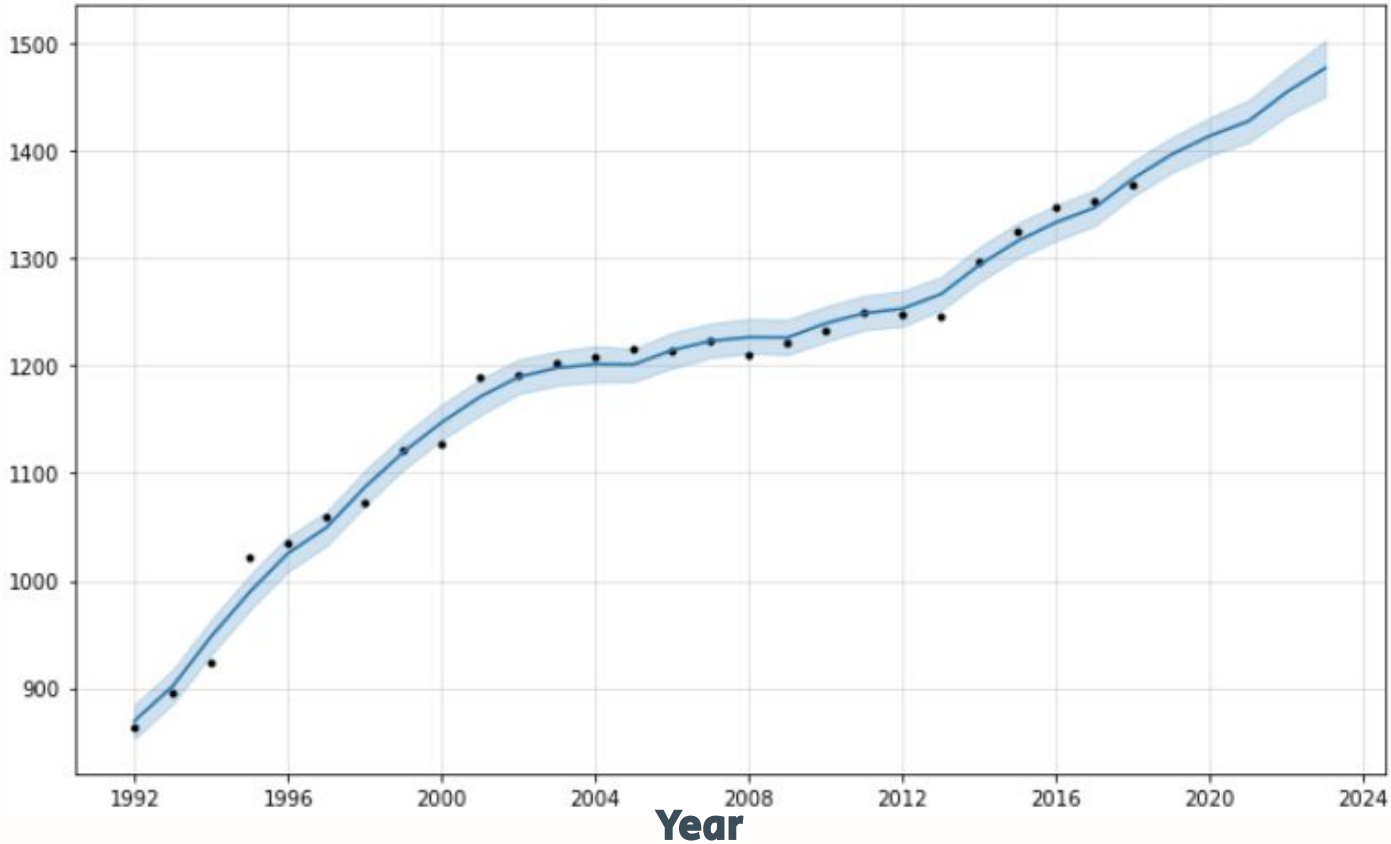
Time Series Prediction of School Shootings

Number of Shootings



Time Series Prediction of Gun Laws

Number of Laws





Analysis

How do gun laws predict the number of shootings?

- Gradient Boosting R2 score predicted 71%

Most Important Features:

- | | |
|---------------------|---------------------------------------|
| 1. locked | 6. preemption |
| 2. campuses | 7. personalized |
| 3. recordsall | 8. opencarrypermitl (l for long guns) |
| 4. preemptionnarrow | 9. opencarryl (l for long guns) |
| 5. preemptionbroad | 10. mcdvsurrendernoconditions |






Analysis

How do gun laws predict the number of shootings?

- Gradient Boosting R2 score predicted 71%

Most Important Features:

1. Locked: All firearms in a household must be stored securely (locked away) at all times
 2. Campuses: Criminal liability for negligent storage of guns if child uses or carries the gun
 3. Recordsall: All private sellers and licensed dealers are required to keep and retain records of all firearm sales
- 





PUTTING IT ALL TOGETHER

- Both number of gun laws and school shootings are predicted to continue increasing
- The model suggests guns laws focused on keeping firearms locked in the home and out of children hands as well as records of sales are the most important
- The issue is simple, but the factors are complex





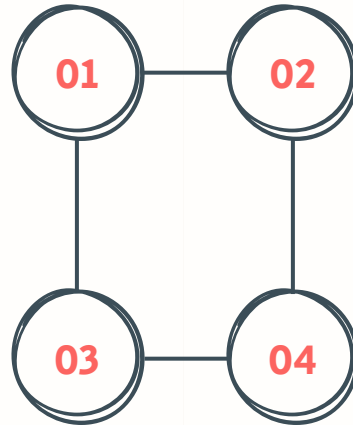
Next Steps and Future Plans

LOOKING GLOBALLY

How does data for the United States compare with the rest of the world? How does culture impact a country's school shootings?

OTHER FACTORS

Time of year, school type, shooter age, race, wealth, mental health, etc.



SHOOTINGS IN GENERAL

Are any common threads with mass shootings (fatalities greater than 3)? Any unique indicators for schools to be aware of?

UPDATED DATA

What impact has the pandemic had? Will have?





TECH STACK



python™



pandas



scikit
learn



plotly



NumPy

matplotlib

PROPHET

GeoPy





THANKS!



Do you have any questions?

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