

Visualizations of School Shootings

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Outline

- Project Recap
- Data Collection, Cleaning and Hydration
- Sentiment Analysis
- Visuals
- Lessons Learned
- Acknowledgements



Project Recap

This project was developed in an effort to understand and track emerging trends among incidents of school violence in the United States.

- GETAR (Global Event and Trend Archive Research)
- Databases
 - URLs and Tweets
- Our Project - Data visualizations





Data Collection

- Why did we need new data?
 - Custom search filters
- GetOldTweets Python script
 - Bypasses Twitter API limitations



Data Cleaning

- Subject matter
 - Basketball references
 - Irrelevant URLs
- Repetition
- Retweets

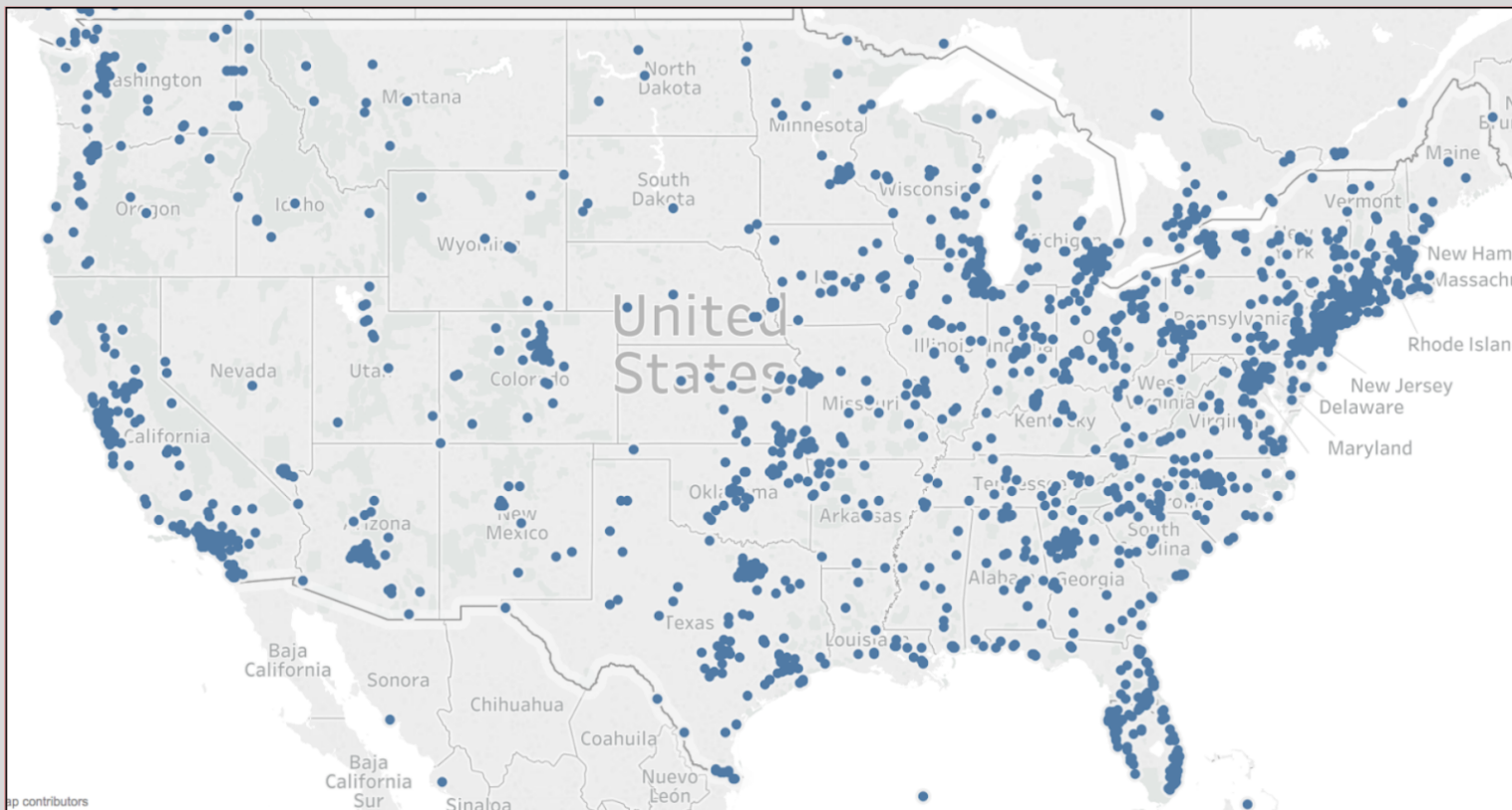


Data Hydration

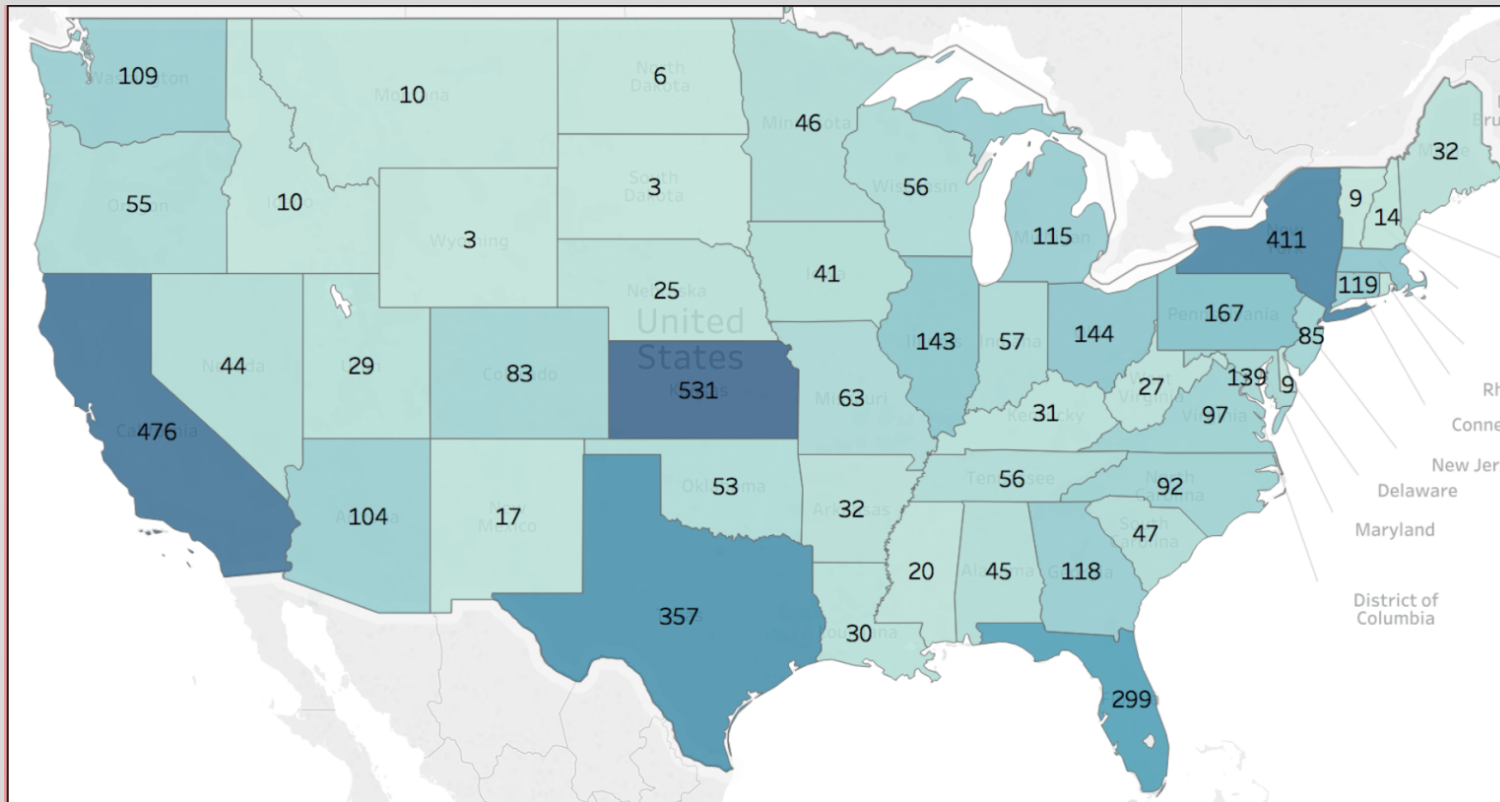
- Hydrator
- Python & Google Maps
 - GPS locations
 - Extracting states



Sandy Hook Visuals - User Locations



Sandy Hook Visuals - Heat Map





Sentiment Analysis

- Natural Language Toolkit (NLTK)
- Python
- VT Tweets
 - Avg: -0.151
 - Range: -0.9877 to 0.9622
- VT Webpages
 - Avg: -0.8419
 - Range: -0.9999 to 0.9723



Sentiment Analysis Virginia Tech Tweet

Most Positive: 0.9622

“Congratulations, @chronicle reporter @erichoov ! His incredibly thoughtful piece, The Arc of Her Survival, has won the 2018 Eugene S. Pulliam National Journalism Writing Award. Read the thoughtful profile of a Virginia Tech shooting survivor here: <https://www.chronicle.com/article/The-Arc-of-Her-Survival/239744/#.WqfJzc1rUQM.twitter>”



Sentiment Analysis Virginia Tech Tweet

Most Negative: -0.9877

“Texas church shooting: 26 killed Las Vegas shooting: 58 killed Virginia Tech shooting :32 killed Newton shooting:27 killed Sandy Hook: 27 killed Orlando Nightclub:49 killed Stoneman Douglas High: more than 17 killed All and many more shootings have one thing in common: The AR-15
pic.twitter.com/pc8R65Tvs7”



Sentiment Analysis Virginia Tech Webpage

URL: <http://www.campussafetymagazine.com/Channel/University-Security/News/2010/11/23/Court-Ruling-Allows-Virginia-Tech-Officials-to-Be-Sued-Over-Shooting.aspx>

Most Positive: 0.9723

“...aspects of safety measures including access control video surveillance mass notifications and security staff practices. Take advantage of a free subscription to Campus Safety today and add its practical insights product updates and know-how to your toolkit. Lawsuits School Shooting Virginia Tech Comments...”



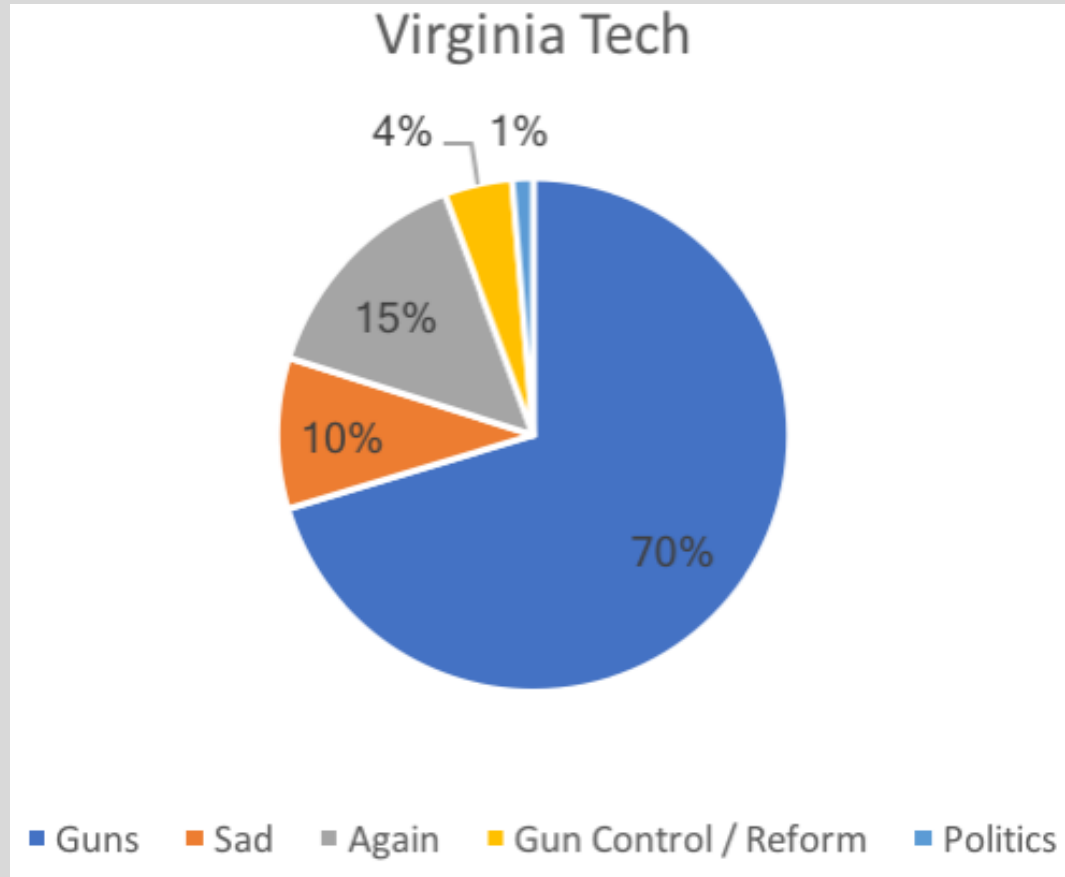
Sentiment Analysis Virginia Tech Webpage

URL: <https://thelede.blogs.nytimes.com/2007/04/16/shooting-at-virginia-tech/comment-page-72>

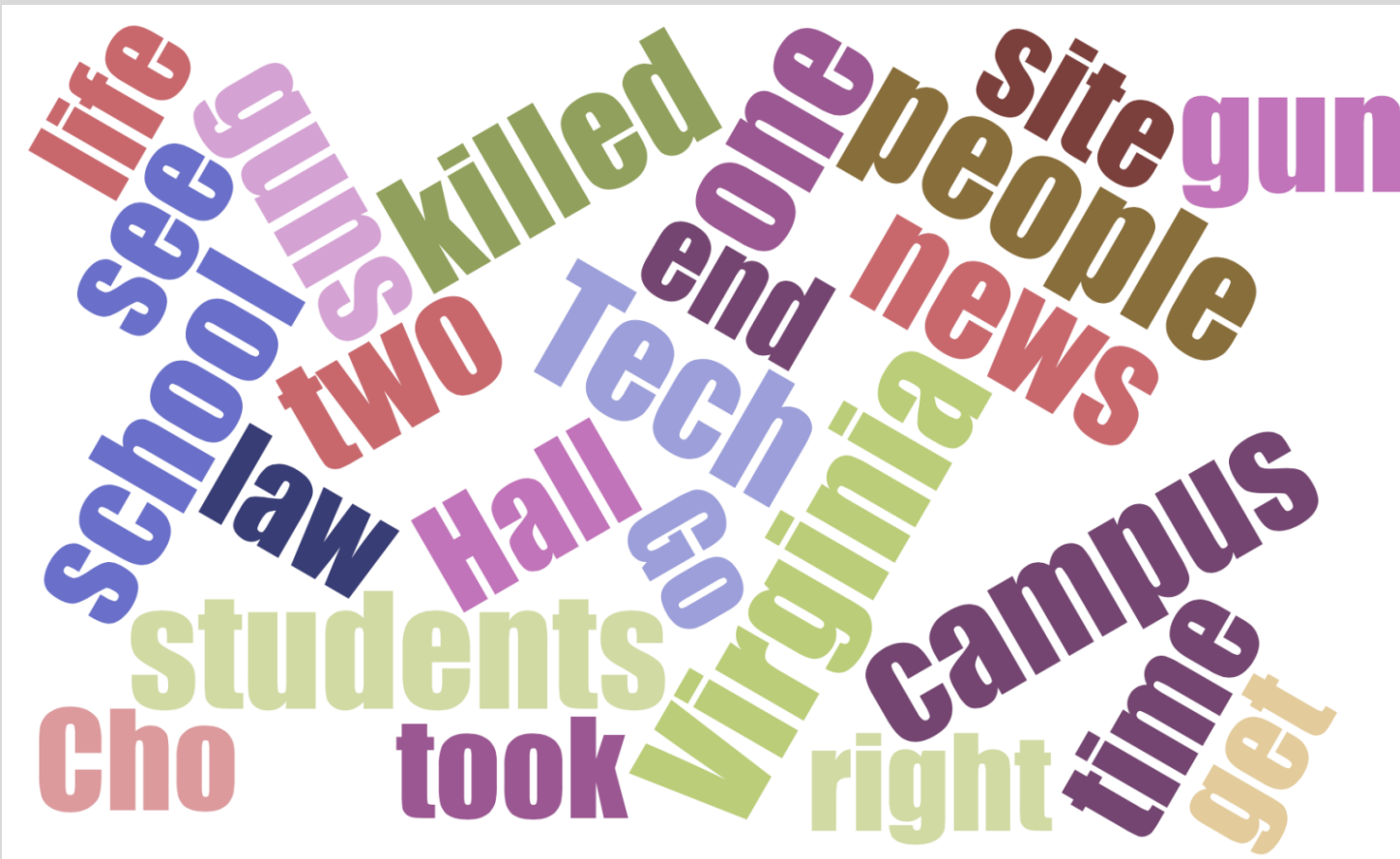
Most Negative: -0.9999

“...This does nothing of course to ease the pain and suffering of all those in Virginia. But gun violence of a certain type has come about and that is largely copy catting from the movies. Add to that the immediate celebrity of any shooter adds glamour to the deranged minds...”

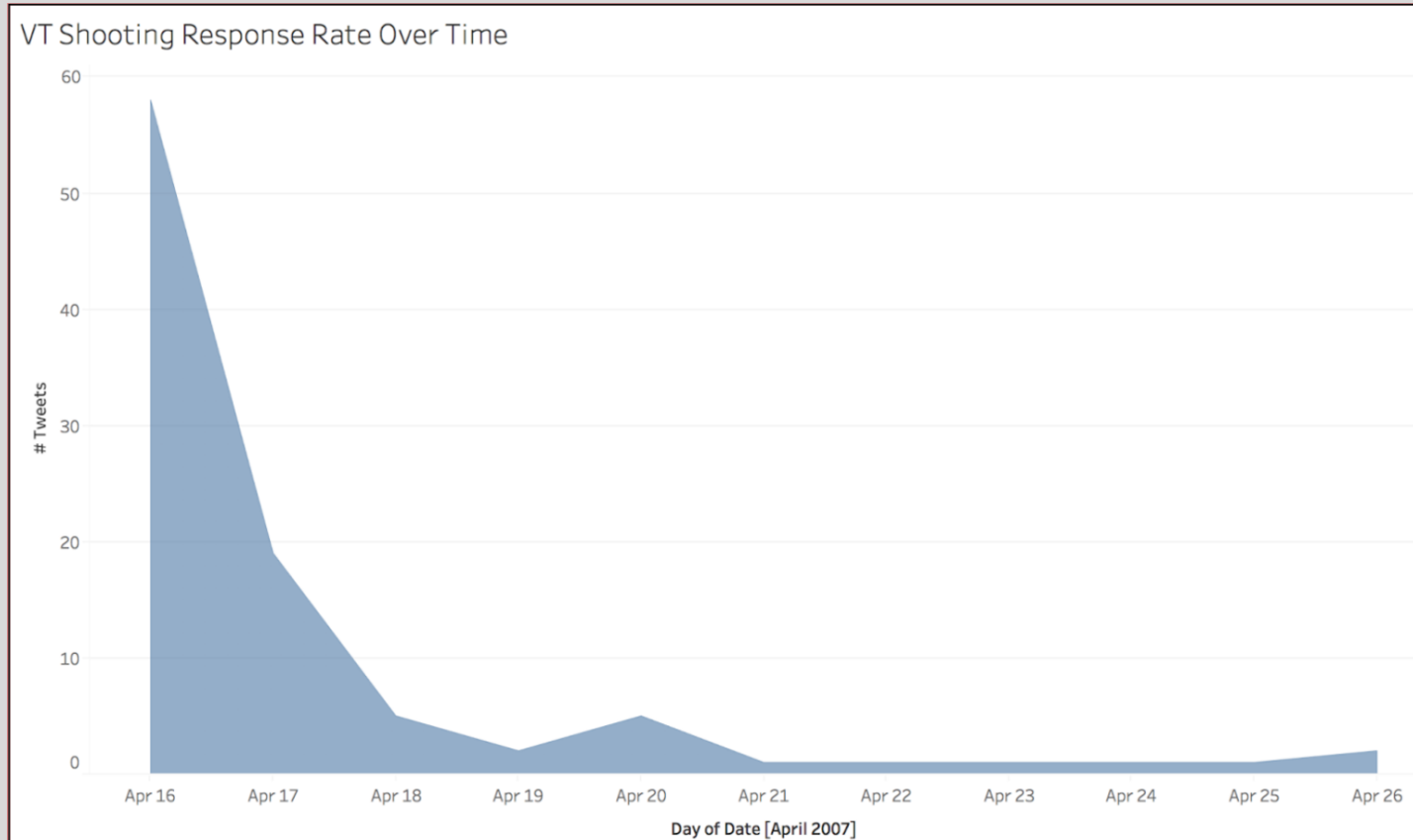
VT Visuals - Keyword Pie Chart



VT Visuals - URL Word Cloud



VT Visuals - Tweets Over Time





Lessons Learned

- Data validation and cleaning
- Managing large sums of data
- Creating meaningful visuals



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