Investigating Police Killings in the US

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Agenda

1. Background/Context
2. Analysis
    a. Data validity across sources
    b. Data visualizations
    c. Machine learning
3. Qualifiers
4. Conclusion
5. Going Forward

Context

It is **nearly impossible to figure out how many people are killed by police each year.** The US government and Federal Agencies (such as the FBI) do not keep comprehensive record of this data.

To help solve this issue, many **news sources** such as the Washington Post, the Wall Street Journal, and the Guardian are **creating their own data sets** to track this data through their own investigations and crowdsourcing

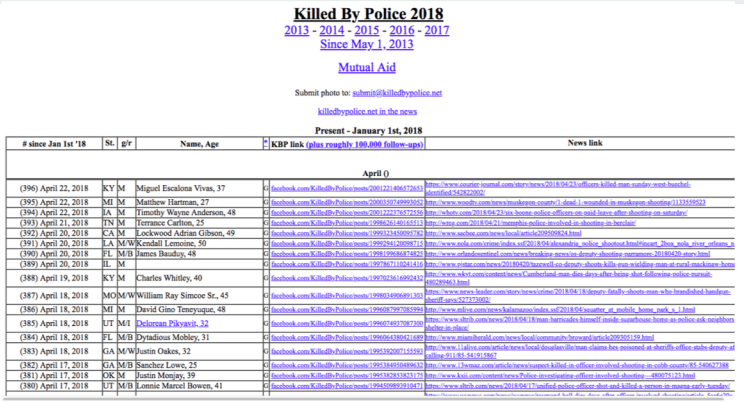
It's important to get **accurate data** on this serious topic and find out why these people are being killed.

Our goal

1. Compare recorded data on police shootings between different news sources
2. Analyze trends in police killings in the US

Data Sources

1. Killed By Police
2. Mapping Police Violence
3. Washington Post



Killed By Police 2018

2013 - 2014 - 2015 - 2016 - 2017
Since May 1, 2013

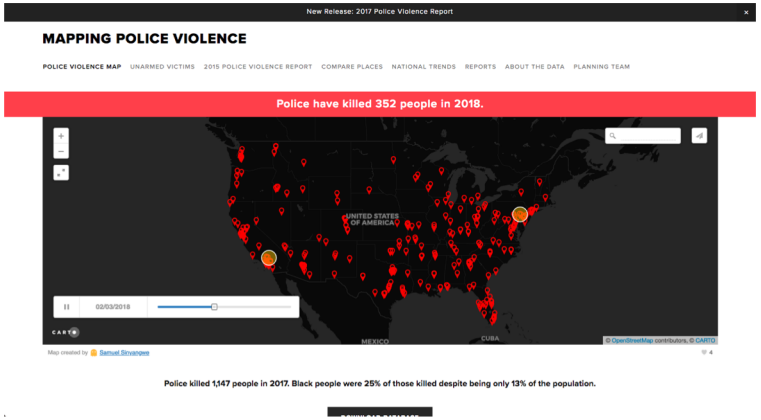
Mutual Aid

Submit photo to: submit@killedbypolice.net

killedbypolice.net in the news

Present - January 1st, 2018

# since Jan 1st '18	St.	g/r	Name, Age	*	KBP link (plus roughly 100,000 follow-ups)	News link
April ()						
(396) April 22, 2018	KY	M	Miguel Escalona Vivas, 37	G	facebook.com/KilledByPolice/posts/2001221406572653	https://www.courier-journal.com/story/news/2018/04/23/officers-killed-man-sunday-went-butchel-identified/542822002/
(395) April 22, 2018	MI	M	Matthew Hartman, 27	G	facebook.com/KilledByPolice/posts/2000350749993052	http://www.woodtv.com/news/muskegon-county/1-dead-1-wounded-in-muskegon-shooting/1133559523
(394) April 22, 2018	IA	M	Timothy Wayne Anderson, 48	G	facebook.com/KilledByPolice/posts/2001222376572556	http://whotv.com/2018/04/23/six-boone-police-officers-on-paid-leave-after-shooting-on-saturday/
(393) April 21, 2018	TN	M	Terrance Carlton, 25	G	facebook.com/KilledByPolice/posts/1998626140165513	http://wreg.com/2018/04/21/memphis-police-involved-in-shooting-in-berclair/
(392) April 20, 2018	CA	M	Lockwood Adrian Gibson, 49	G	facebook.com/KilledByPolice/posts/1999323450095782	http://www.sacbee.com/news/local/article209509824.html
(391) April 20, 2018	LA	M/W	Kendall Lemoine, 50	G	facebook.com/KilledByPolice/posts/1999294120098715	http://www.nola.com/crime/index.ssf/2018/04/alexandria_police_shootout.html#incart_2box_nola_river_orleans_a
(390) April 20, 2018	FL	M/B	James Bauduy, 48	G	facebook.com/KilledByPolice/posts/1998199686874825	http://www.orlandosentinel.com/news/breaking-news/in-deputy-shooting-narrancee-20180420-story.html
(389) April 20, 2018	IL	M		G	facebook.com/KilledByPolice/posts/1997867110241416	http://www.pjstar.com/news/20180420/bazewell-co-deputy-shoots-kills-gun-wielding-man-at-rural-mackinaw-home
(388) April 19, 2018	KY	M	Charles Whitley, 40	G	facebook.com/KilledByPolice/posts/1997023616992832	http://www.nkyt.com/content/news/Cumberland-man-dies-days-after-being-shot-following-police-pursuit-480289463.html
(387) April 18, 2018	MO	M/W	William Ray Simcoe Sr., 45	G	facebook.com/KilledByPolice/posts/1998034906891303	https://www.news-leader.com/story/news/crime/2018/04/18/deputy-fatally-shoots-man-who-brandished-handgun-sheriff-says/527373002/
(386) April 18, 2018	MI	M	David Gino Teneyuque, 48	G	facebook.com/KilledByPolice/posts/1996087997085994	http://www.mlive.com/news/kalamazoo/index.ssf/2018/04/squatter_at_mobile_home_park_s_1.html
(385) April 18, 2018	UT	M/I	Delorean Pikyavit, 32	G	facebook.com/KilledByPolice/posts/1996074937087300	https://www.sltrib.com/news/2018/04/18/man-barricades-himself-inside-sugarhouse-home-as-police-ask-neighbors-shelter-in-place/
(384) April 18, 2018	FL	M/B	Dytadious Mobley, 31	G	facebook.com/KilledByPolice/posts/1996064380421689	http://www.miamiherald.com/news/local/community/broward/article209305159.html
(383) April 18, 2018	GA	M/W	Justin Oakes, 32	G	facebook.com/KilledByPolice/posts/1995392007155593	http://www.11alive.com/article/news/local/douglasville/man-claims-bee-poisoned-at-sheriffs-office-stabs-deputy-at-calling-911/85-541915867
(382) April 17, 2018	GA	M/B	Sanchez Lowe, 25	G	facebook.com/KilledByPolice/posts/1995384950489632	http://www.11wmaz.com/article/news/suspect-killed-in-officer-involved-shooting-in-cobb-county/85-540627388
(381) April 17, 2018	OK	M	Justin Monjay, 39	G	facebook.com/KilledByPolice/posts/1995382853823175	http://www.ksii.com/content/news/Police-investigating-officer-involved-shooting---480075123.html
(380) April 17, 2018	UT	M/B	Lonnie Marcel Bowen, 41	G	facebook.com/KilledByPolice/posts/1994509893910471	https://www.sltrib.com/news/2018/04/17/unified-police-officer-shot-and-killed-a-person-in-magna-early-tuesday/

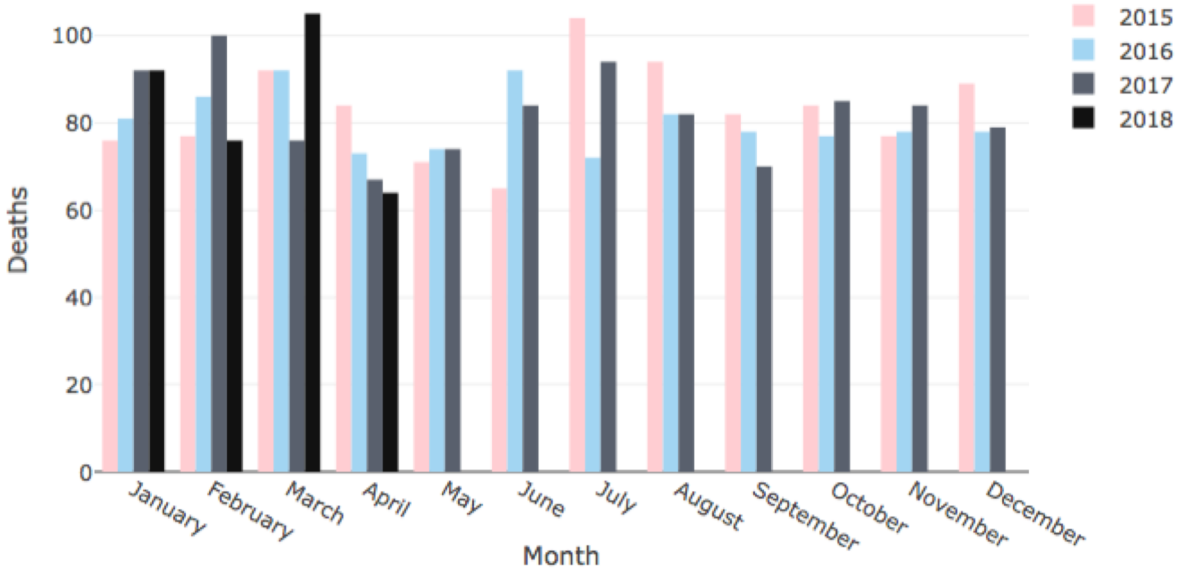


Analysis: Data validity across sources

1. Entries in each dataset since 2015
    a. Killed by Police: 3148
    b. Mapping Police Violence: 3702
    c. Washington Post: 3208

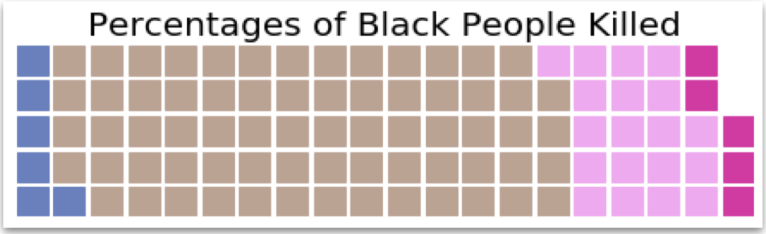
2. Entries common across all 3 datasets: 2739
    a. Fuzzy string comparison using Levenshtein distance
    b. Why are so many names missing?

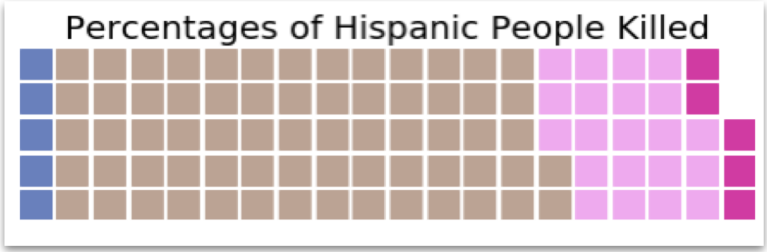
Police shootings by month from 2015-18

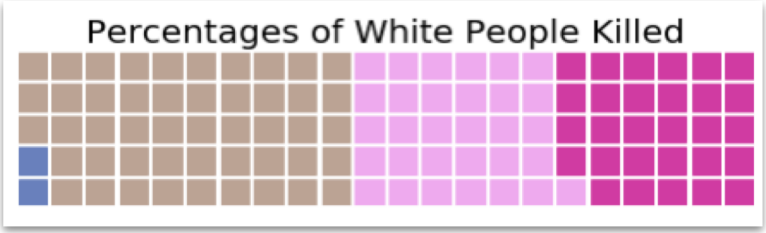


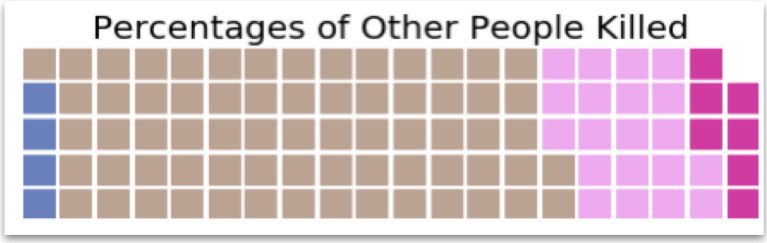
Age vs. Race

Under 18
Gen Y (18-38)
Gen X (39-53)
Baby Boomers (54 and up)

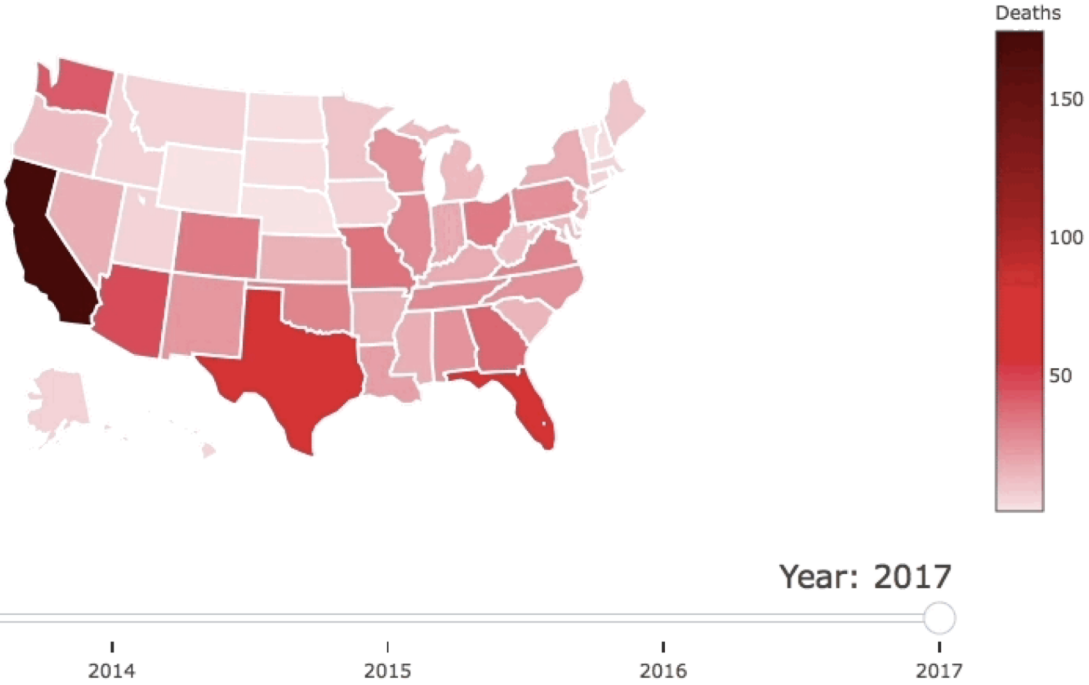

Percentages of Black People Killed


Percentages of Hispanic People Killed


Percentages of White People Killed


Percentages of Other People Killed

US police killings by state from 2013-17



Machine Learning: predicting gender

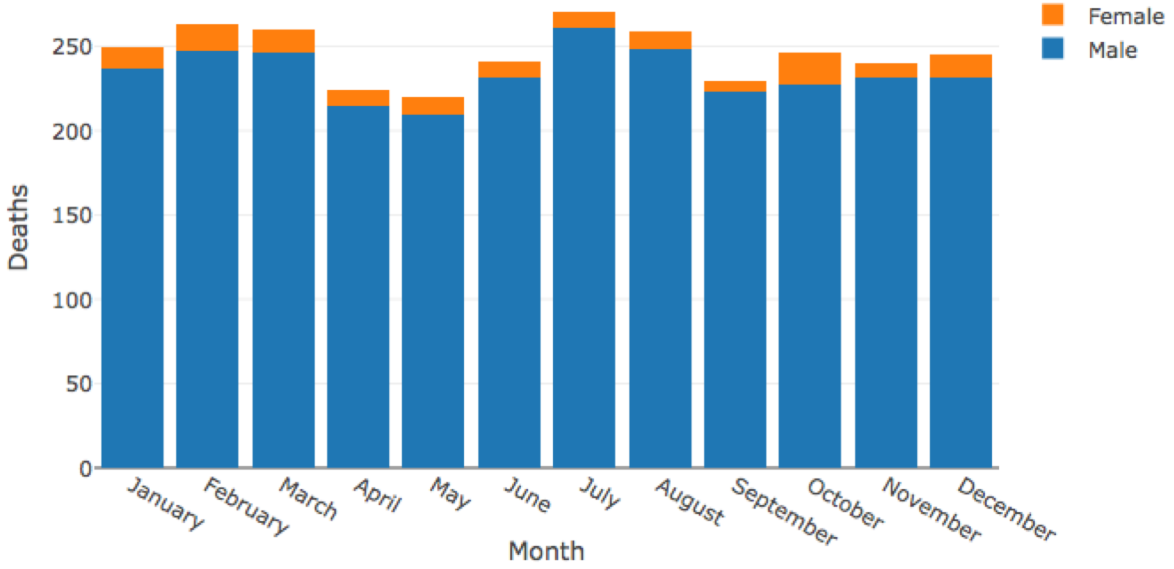
1. **Model variables:**
   a. State, race, manner of death, month and year of death, age group (under 18, GenY, GenX, Baby Boomers, 75 and above)

1. **Findings:**
   a. Month (23%) was the most influential factors in predicting the gender of the person killed, followed by year (14%) and if they were shot (3.5%)
   b. The model predicted the correct gender 93% of the time

Confusion Matrix

Predicted:	F	M	T	All
Actual				
F	1	54	0	55
M	21	806	1	828
T	0	1	0	1
All	22	861	1	884

People of Each Gender Killed (2015-2017)



Machine Learning: predicting armed

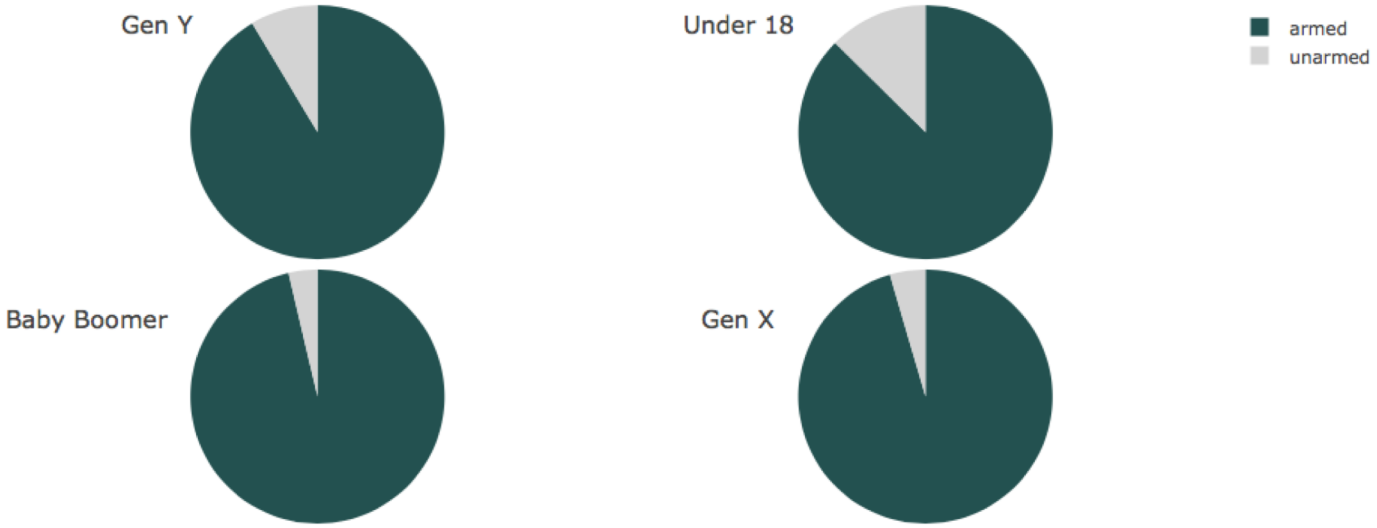
1. **Model variables:**
   a. “Face value” of a person
   b. Age, race, gender, signs of mental illness, threat level, whether or not they are fleeing

1. **Findings:**
   a. Age (70%) was the most influential factors in predicting if the person was armed, followed by threat level (3.6%) and if they were Black (3.2%)
   b. More false positives (predicted armed when actually unarmed) than false negatives
   c. The model correctly predicted if the person was armed 91% of the time

Confusion Matrix

Predicted:	armed	unarmed	All
Actual			
armed	576	12	588
unarmed	48	2	50
All	624	14	638

Age breakdown of armed/unarmed



Conclusions

- Identified trends
  - Gender in relation to month killed
  - Armed or not in relation to age groups
- There are many more variables that could play a role in a person's death (time of day, location/neighborhood, criminal history)

Going Forward

- Compare with national crime statistics
- Find out why some names are not reported across all data sets
- Obtain an arrests data set and compare traits of people killed and not killed

Questions?