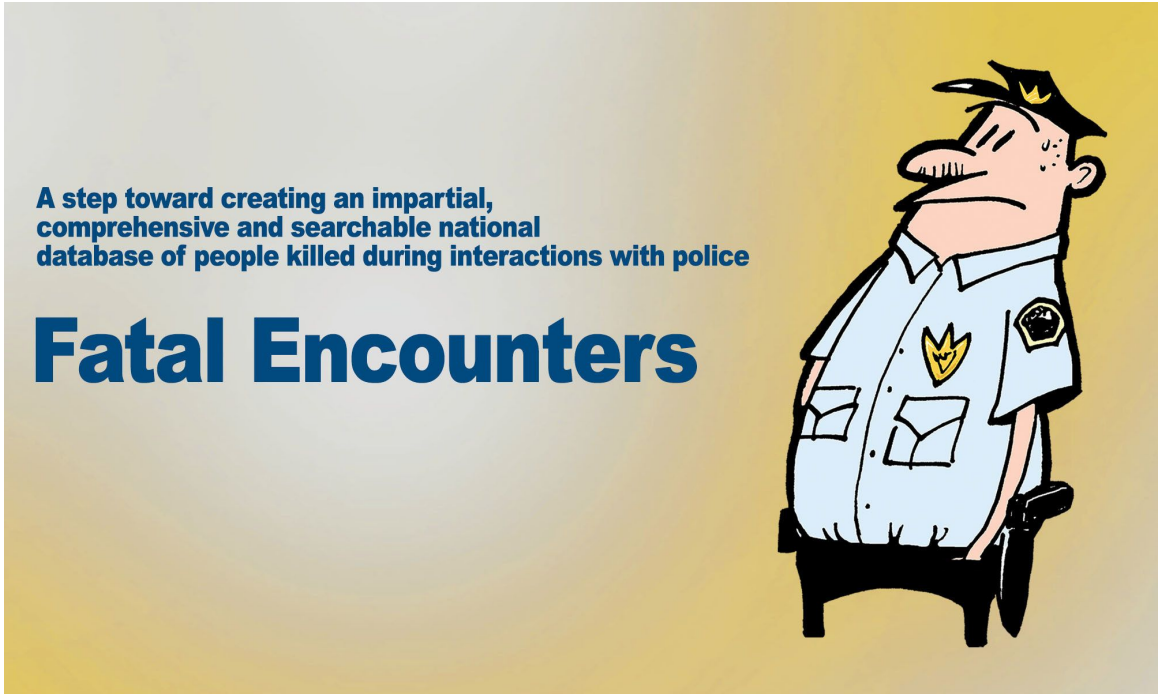


Robert Bintu and Jacob Martin

7/30/2020

Fatal Encounters

Introduction

- Fatal Encounters is a website founded by D. Brian Burghart that attempts to provide transparency fatalities during interactions with law enforcement
- The site objective, “to provide a step toward creating an impartial, comprehensive national database of people killed during interactions with law enforcement”
- It comes from open sourced information gleaned from news reports and public records to chronicle each reported death
- Their team provides the data freely so that others can use it for research purposes of their interest
- It is not a complete database and they recognize they have missed some records, but it is intended to offer names, demographic, dates, and locations of those who have died

Domain Problem Characterization

- Our project objective is to provide an added layer of transparency through data visualization of the records in the database

- Shed light on common trends in the data such as:
  - How many people are died in interactions with law enforcement?
  - What do the numbers look across different states?
  - What do the demographic characteristic of the fatalities look like?
  - What are the commonalities of the reason why people died?

- Using data visualization, the designed system will:
  - Create an easy to understand visualizations so that others, who do not have data visualization skills, can benefit from the information in the dataset
  - Provide interactive ability to filter out the deaths of specific interest to the user including gender, race, and cause of death
  - Show trends across a state level through geographical mapping
  - Allow visualization of the description text of each incident

Data Abstraction Design

- There were 28,434 observations in the Fatal Encounters dataset
- Data has collection since the year 2000 and includes to the best of their ability, all deaths
- Data collected for 29 parameters (see adjacent table). However project focused on more general information about the subject (e.g. gender, age, sex, links to news, etc)
- We also used a geojson file to create shape polygons for states. Then attached data from our Fatal dataset and state population figures so that they could be visualized

Note: We used the population data from 2010 since that was the most recent census year and because it was in the chronological middle of our dataset.

Fatal Encounters Dataset columns

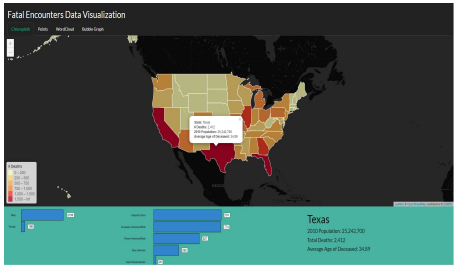
- Unique ID
- Subject's name
- Subject's age
- Subject's gender
- Subject's race
- Subject's race with imputations
- Imputation probability
- URL of image of deceased
- Date of injury resulting in death (month/day/year)
- Location of injury (address)
- Location of death (city)
- Location of death (state)
- Location of death (zip code)
- Location of death (county)
- Full Address
- Latitude
- Longitude
- Agency responsible for death
- Cause of death
- A brief description of the circumstances surrounding the death
- Dispositions/Exclusions INTERNAL USE, NOT FOR ANALYSIS
- Intentional Use of Force (Developing)
- Link to news article or photo of official document
- Symptoms of mental illness? INTERNAL USE, NOT FOR ANALYSIS
- Video
- Date&Description
- Unique ID formula
- Unique identifier (redundant)
- Date (Year)

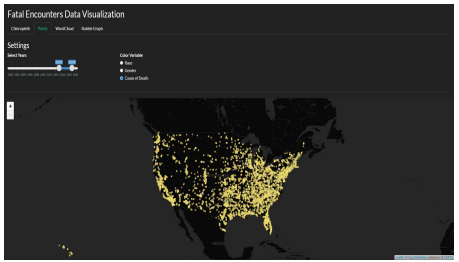
Shiny App Design

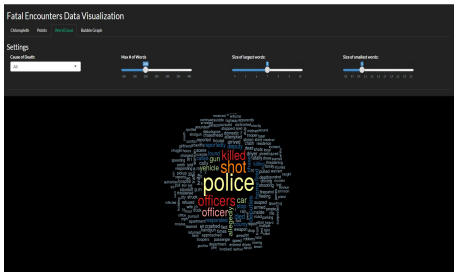
- Visualize the data in their proper geospatial context by employing the choropleth map
  - Each state is a polygon shape with data connected to it. User selects a state from the map they are able to see bar chart breakdowns of two categories
  - Interactive interface that provides insights into the questions of state by state comparison across demographics and gender

- A visualization map that plots points of every death included in the dataset, shown by colored points based on race, gender, and cause of death
  - Includes a slider tool to filter by the year for more user interaction
  - Provides a more personable and interactive displays of specific interest

- Word Cloud of text information
  - Offer flexibility in the custom settings for the number & size of the words







Shiny App Demo

Sources

Fatal Encounters Dataset by: D. Brian Burghart and the entire Fatal Encounters team. They can be found at https://fatalencounters.org/ and the dataset can directly be pulled from their google sheets link at: FATAL ENCOUNTERS DOT ORG SPREADSHEET

State Geometry file provided by: Mike Bostock (https://bost.ocks.org/mike/) and pulled from the Leaflet.js team's example (https://leafletjs.com/examples/choropleth/)

Inspiration for the Point's tab visualization from the Fatal encounters visualization team at https://github.com/adv-datasci/fatalencounters and Visualization by Kenneth Morales