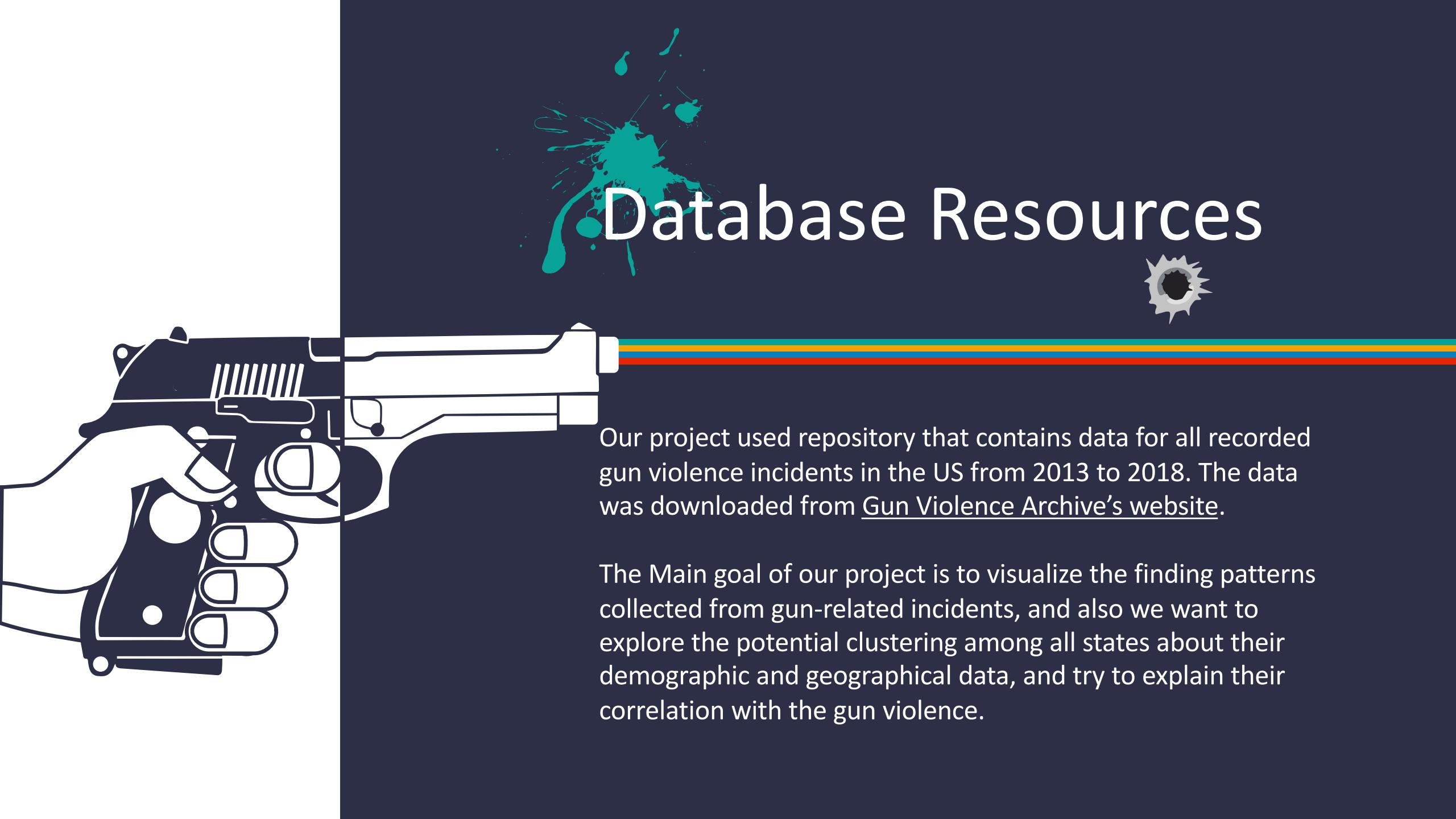




IMPACT AND ANALYSIS OF GUN VIOLENCE IN AMERICA

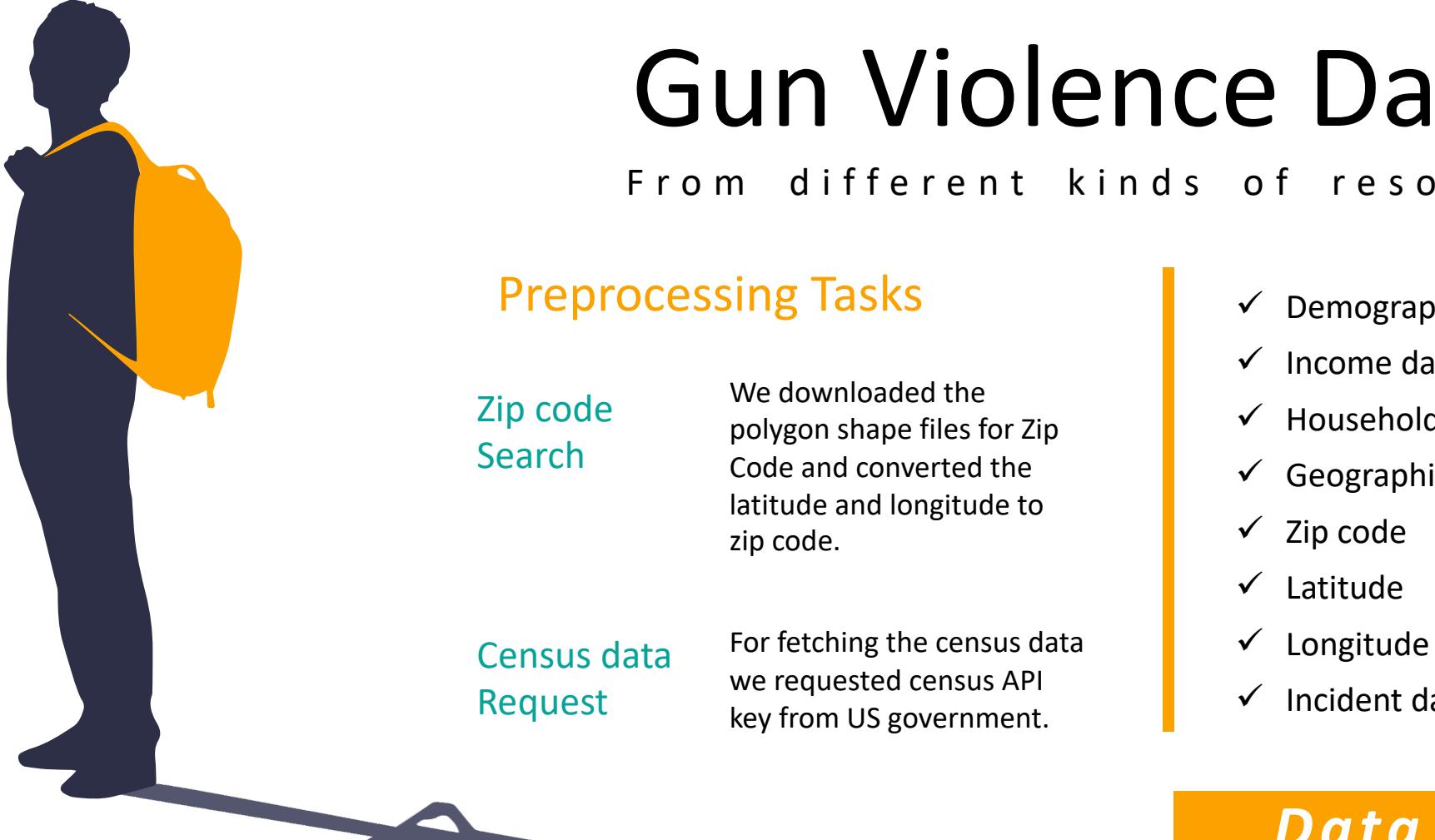
Course 543 Group 20:
Haodong Zheng(zh288), Yujia Fan(yf198)



Database Resources

Our project used repository that contains data for all recorded gun violence incidents in the US from 2013 to 2018. The data was downloaded from [Gun Violence Archive's website](#).

The Main goal of our project is to visualize the finding patterns collected from gun-related incidents, and also we want to explore the potential clustering among all states about their demographic and geographical data, and try to explain their correlation with the gun violence.



Gun Violence Data

From different kinds of resources

Preprocessing Tasks

Zip code Search

We downloaded the polygon shape files for Zip Code and converted the latitude and longitude to zip code.

Census data Request

For fetching the census data we requested census API key from US government.

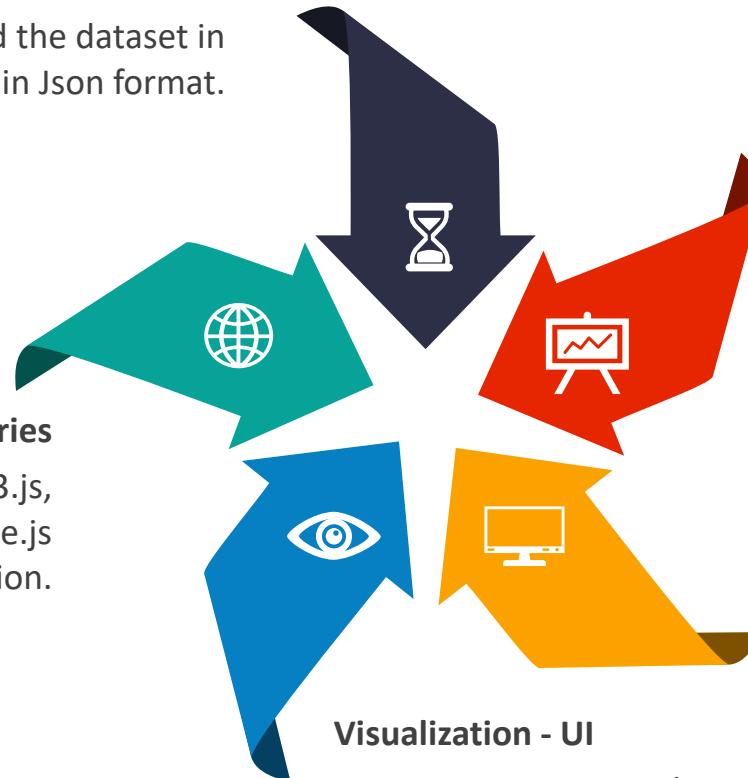
- ✓ Demographic data
- ✓ Income data
- ✓ Household data
- ✓ Geographical data
- ✓ Zip code
- ✓ Latitude
- ✓ Longitude
- ✓ Incident data

Data Features

Implementation Tools

Database - MongoDB

We used MongoDB to load the dataset in csv format into our sever in Json format.



Additional Libraries

We used additional libraries such as D3.js, DC.js, bootstrap.min.js, crossfilter.js, queue.js and CartoDB to help with the integration.

Visualization - UI

We use HTML, CSS and JavaScript to design UI interface and integrated with Python.

Data Processing and Analysis - PySpark

We used Python and Spark together to analyze Big data, and used Spark's MLlib to create powerful Machine Learning Models.

Backend - Flask

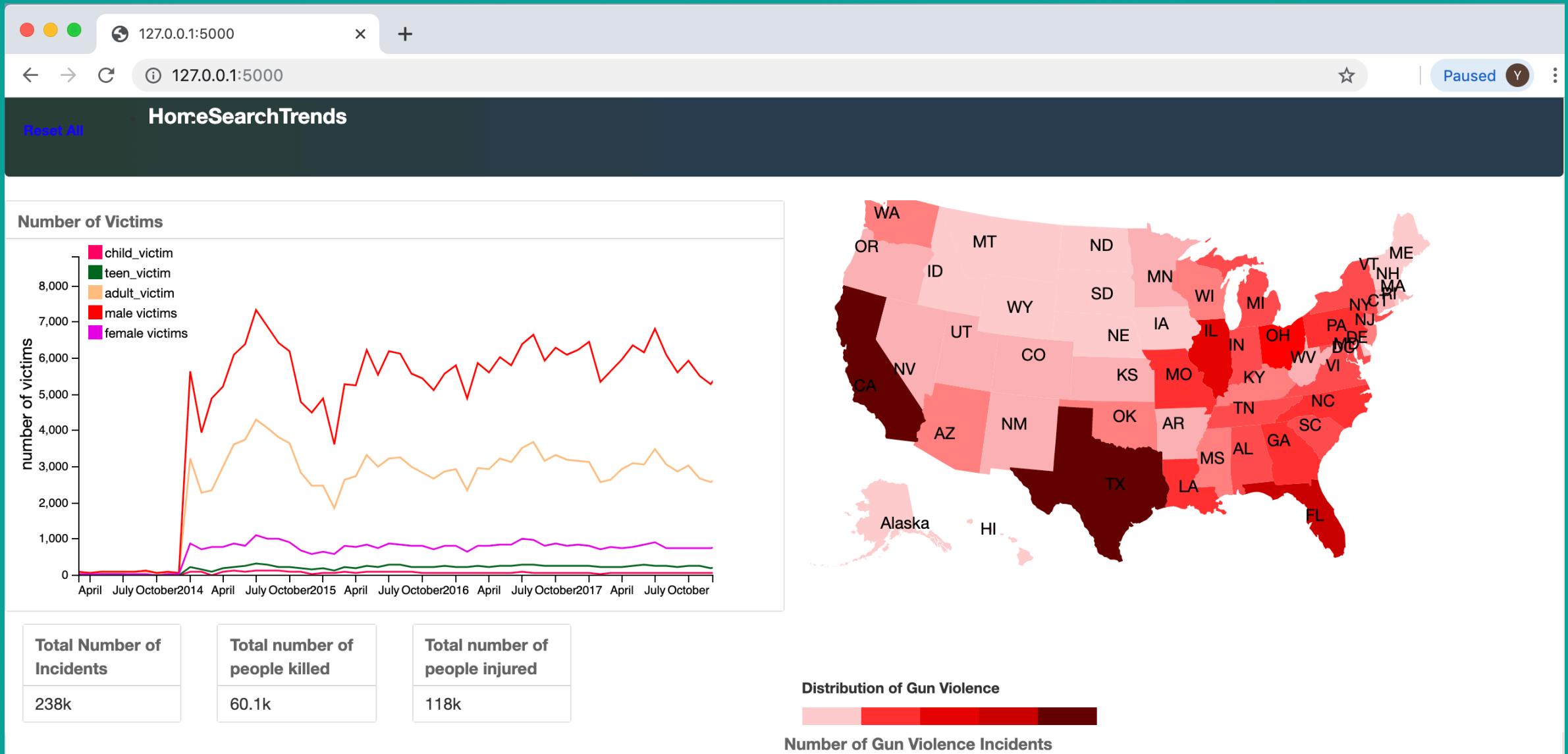
We used Flask which is a micro and lightweight python web framework and added some customized architecture.



Product Overview



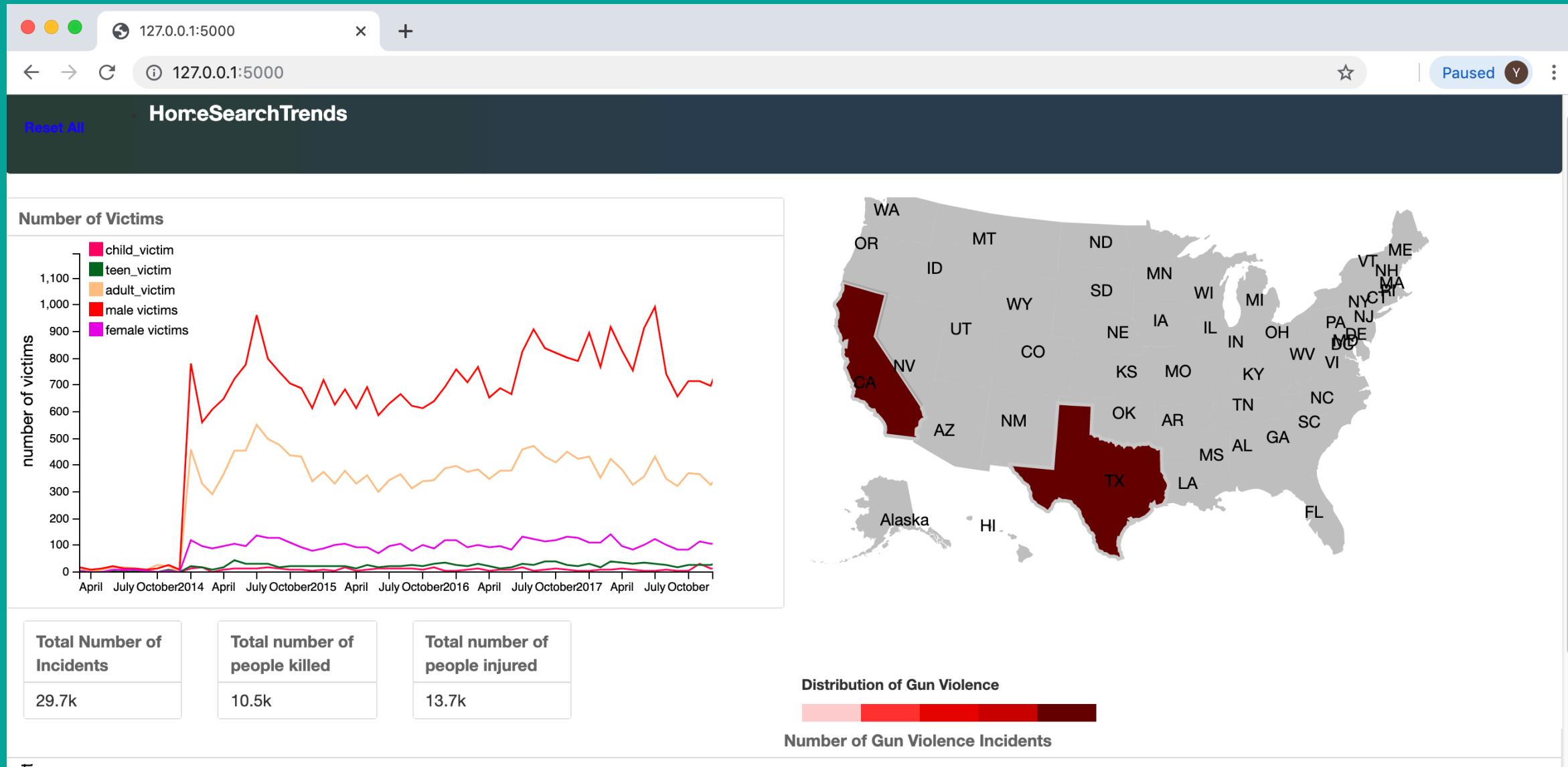
All states selected



Product Overview



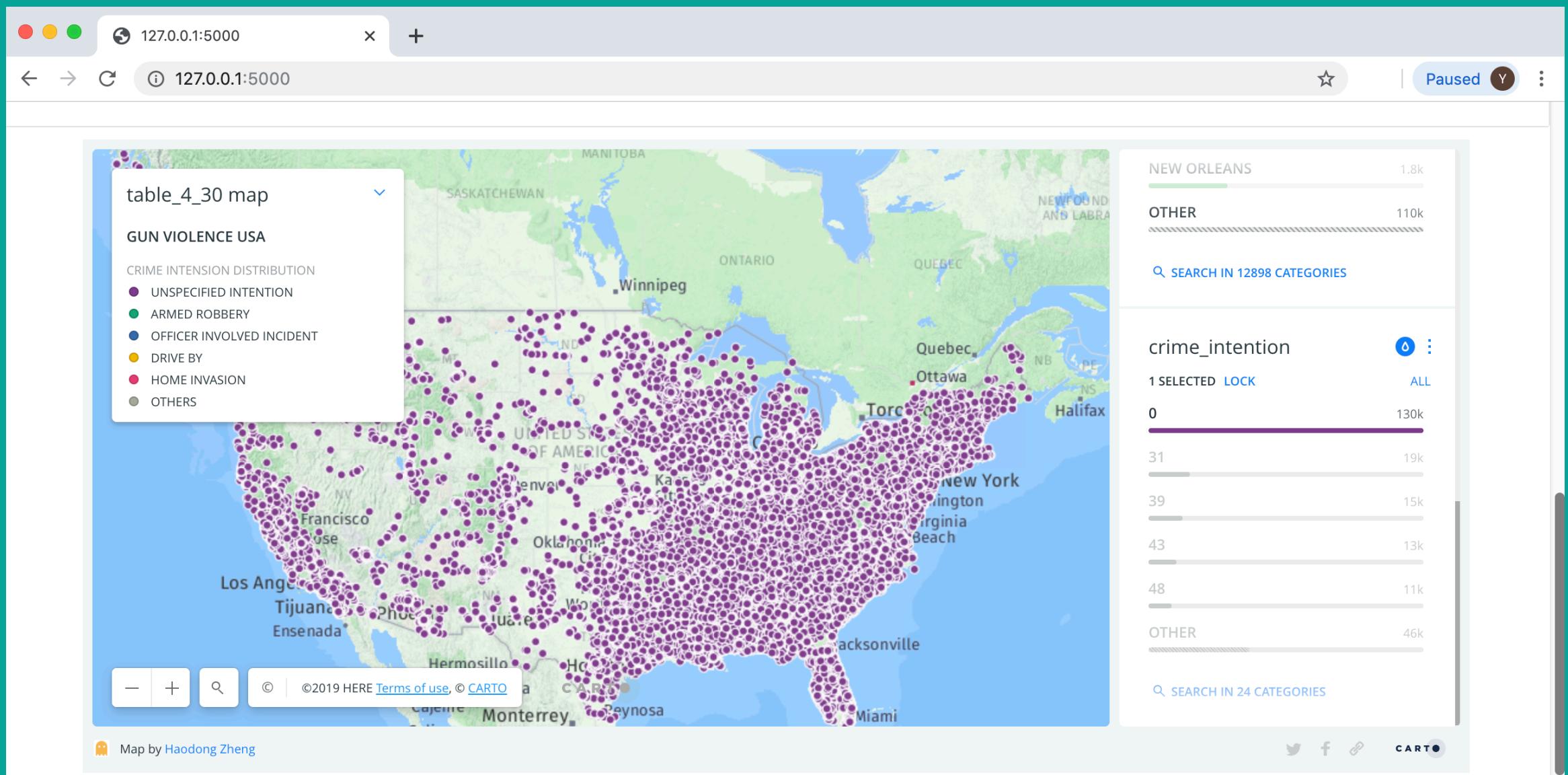
Customized states selected



Product Overview



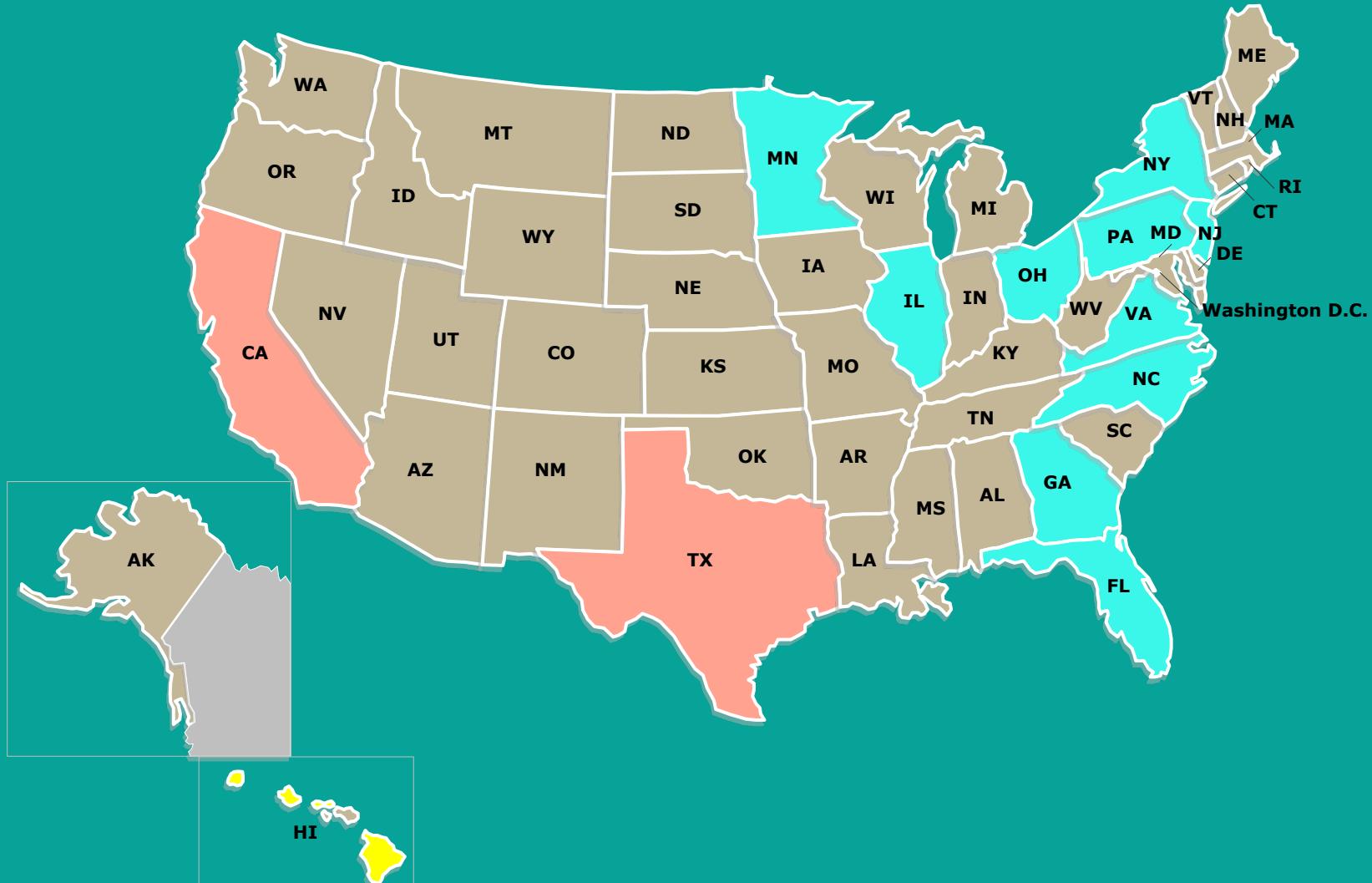
Crime intention selected



Product Overview



KNN clustering – k=4 selected



Group 1

Group 2

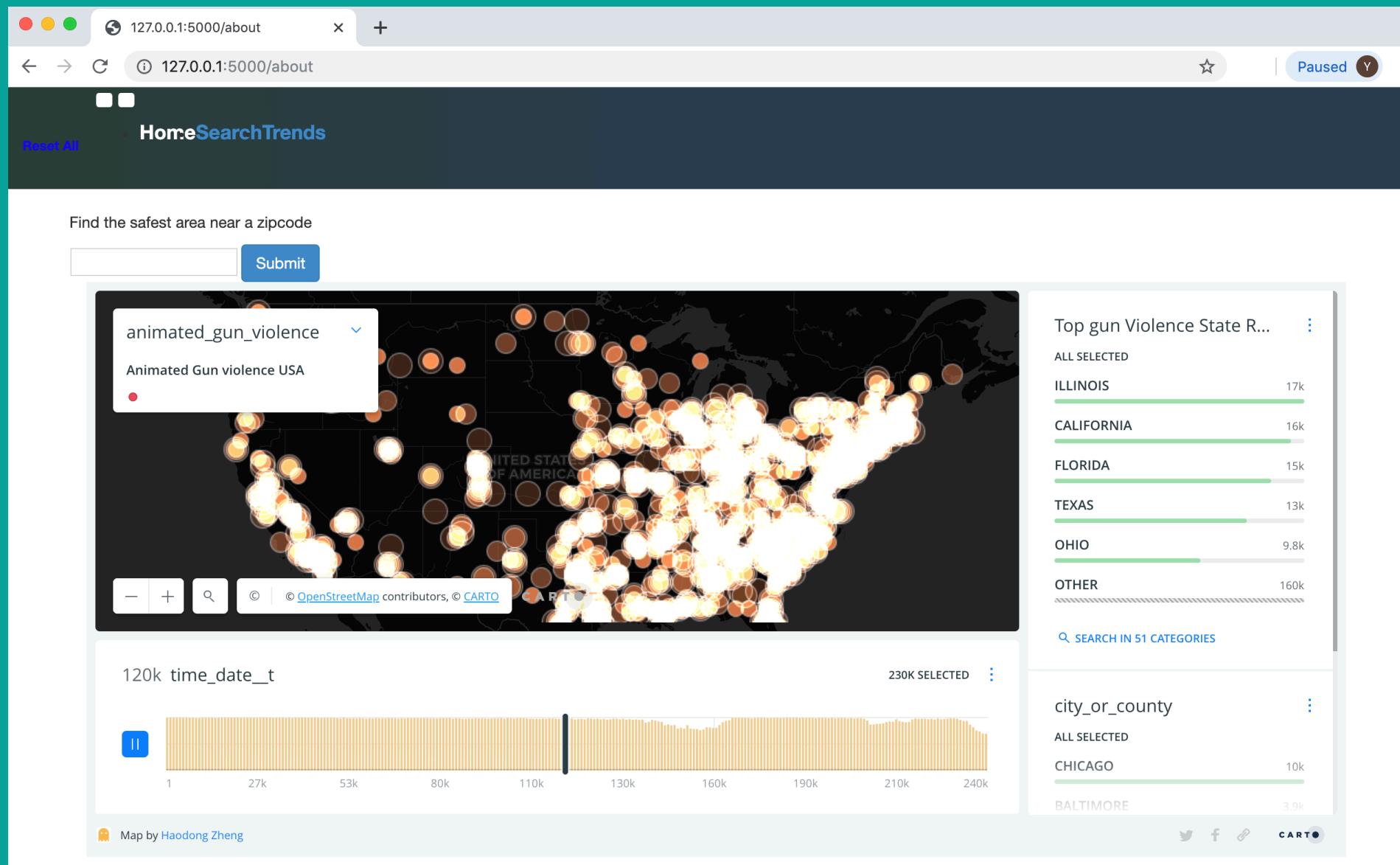
Group 3

Group 4

Product Overview



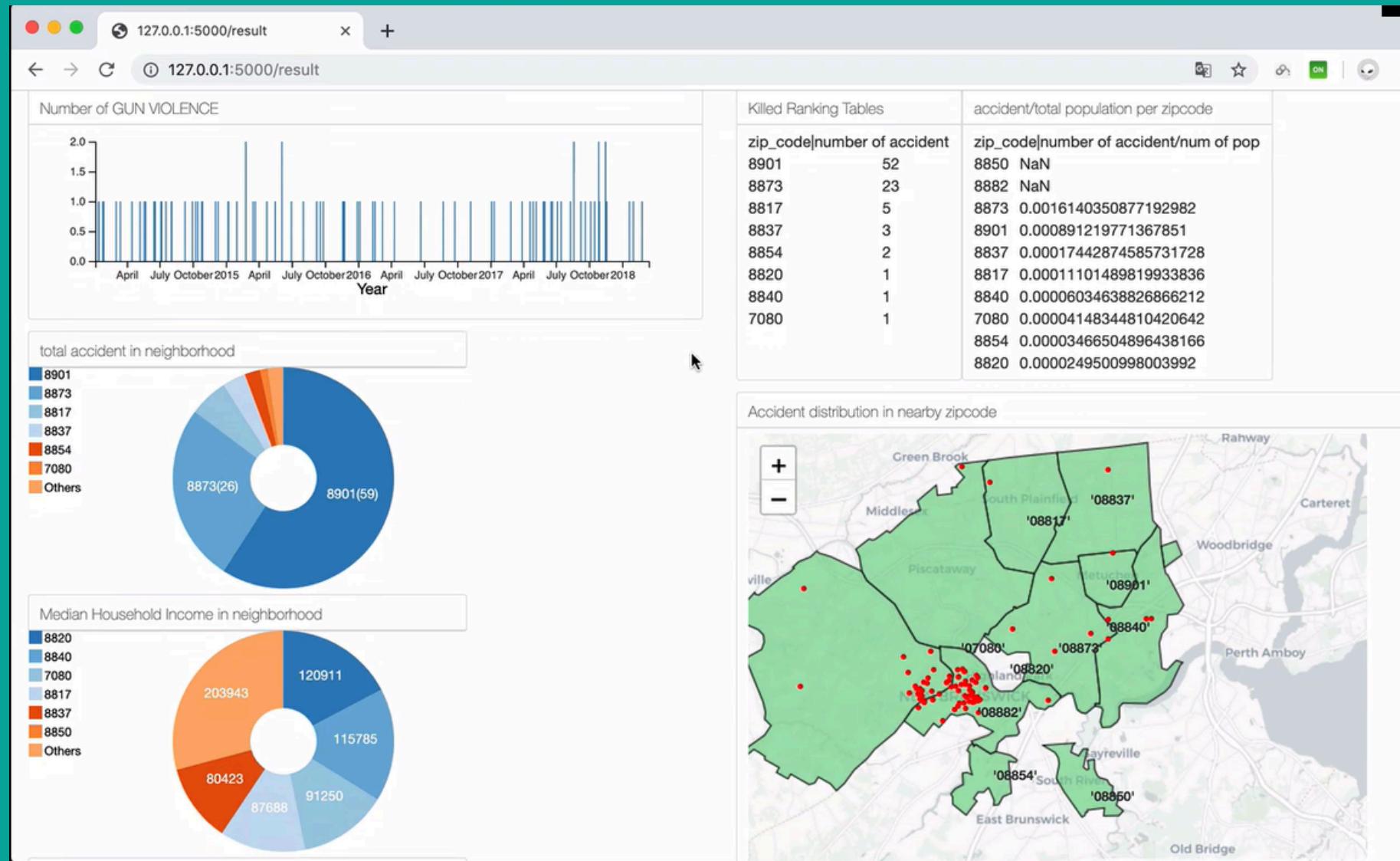
Specified time period selected



Product Overview



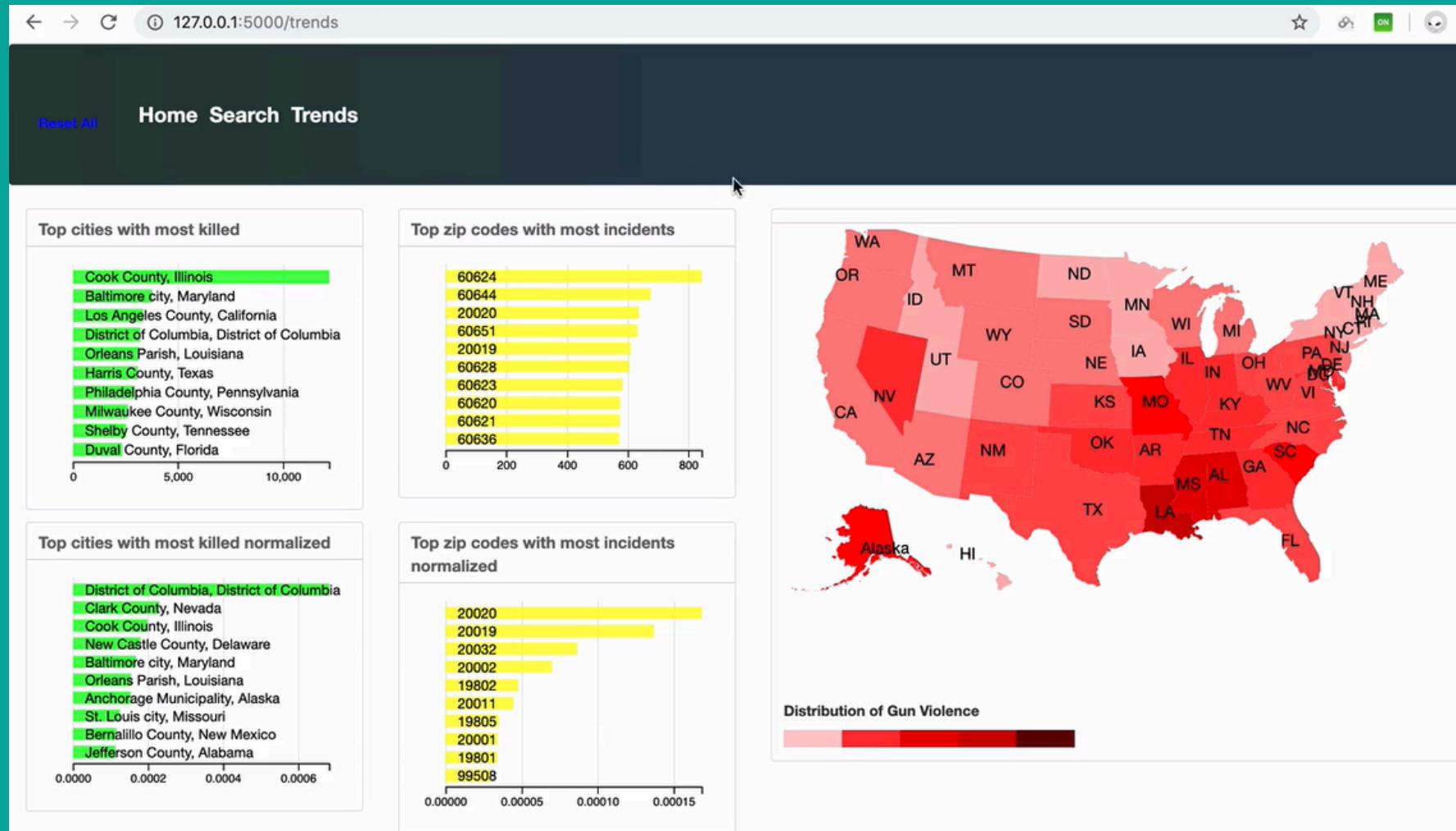
Specified area selected



Product Overview



Trends selected



Thank you for Listening!

