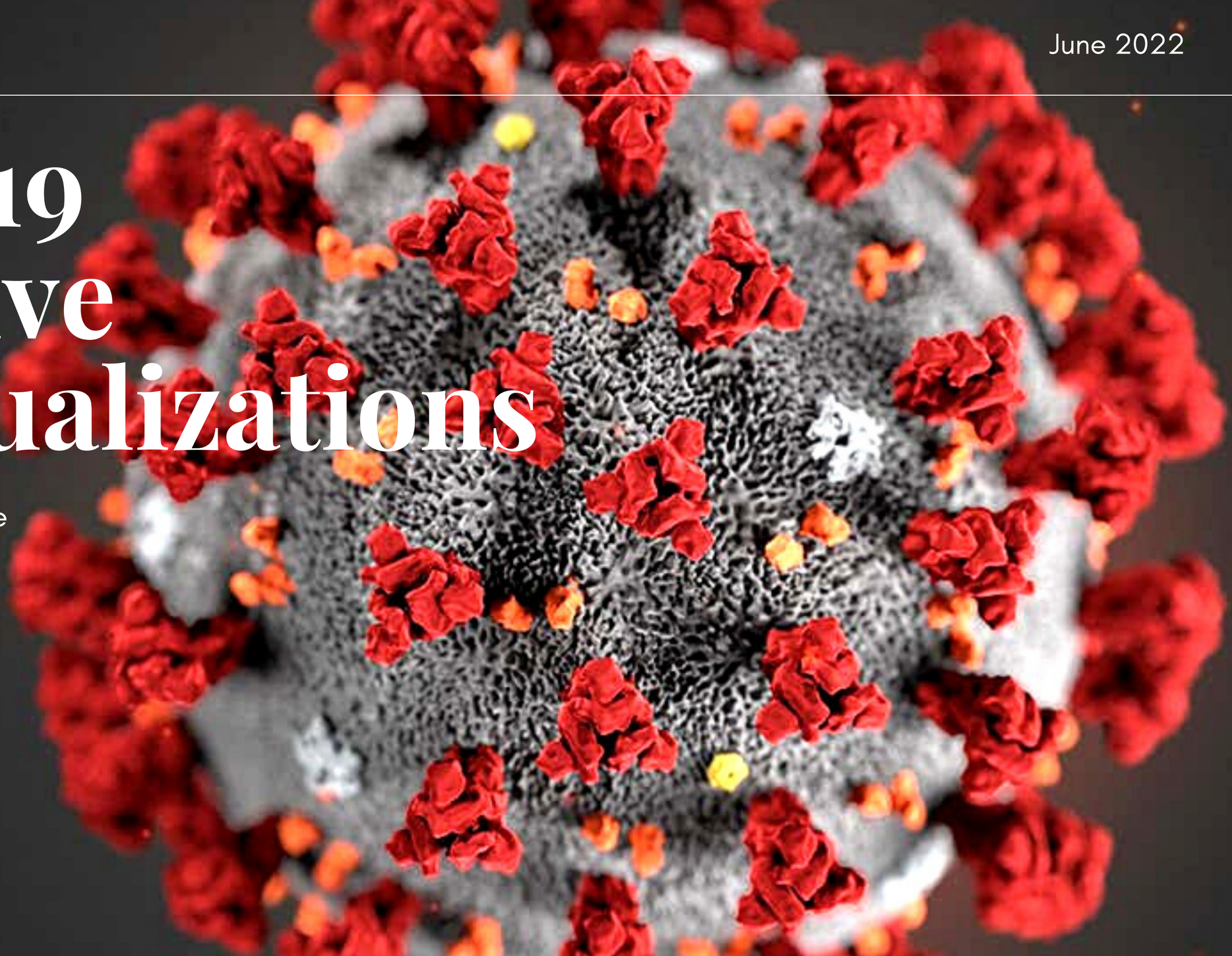
June 2022

COVID-19 Interactive Web Visualizations

Designing an interactive webpage
& data modeling.



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The Process

We began with data sets from cdc.gov and NYTimes regarding COVID-19 death rates and case statistics in the United States.

1 **Data & Data Delivery**

Original data set is "COVID-19 deaths by sex, age, state, year and month" and contains 88,000 rows, 16 columns. Data cleaned and broken down by time frames, age groups, gender, and location.

2 **Back-End (ETL)**

Python Flask-powered API created to store data in MongoDB.

3 **Visualizations**

Choropleth Map created using Leaflet.js, interactive bar chart with dashboard, and animated line graph created with chart.js. Webpage designed using HTML, CSS, and JS.

Examining COVID-19

Analyzing COVID-19 death rates and prevalence across the US through interactive dashboards.

DEATH RATE MAP OF USA

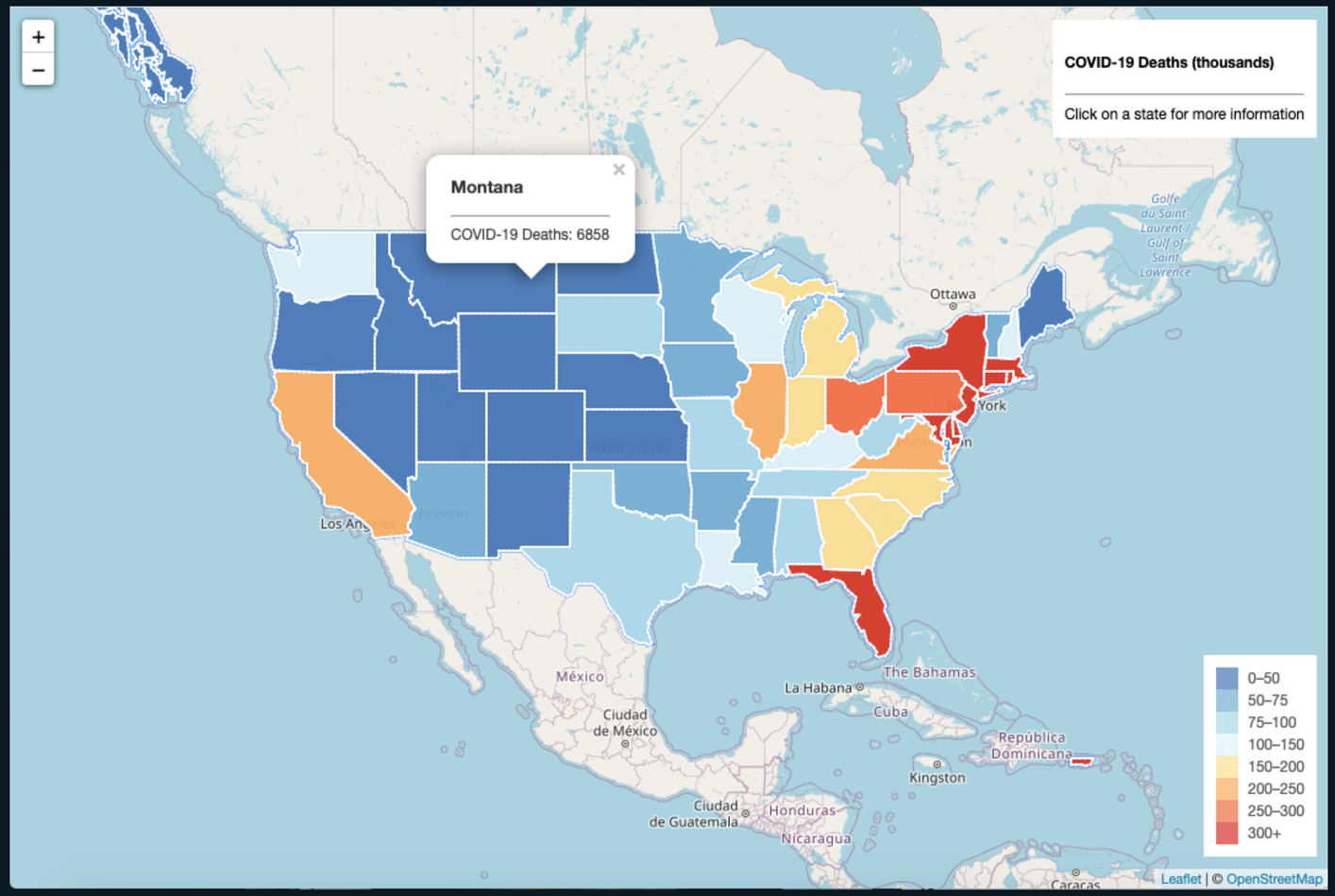
DEATH RATES BY AGE, STATE & YEAR

COVID-19 VS. INFLUENZA DEATHS

Choropleth Map

North America

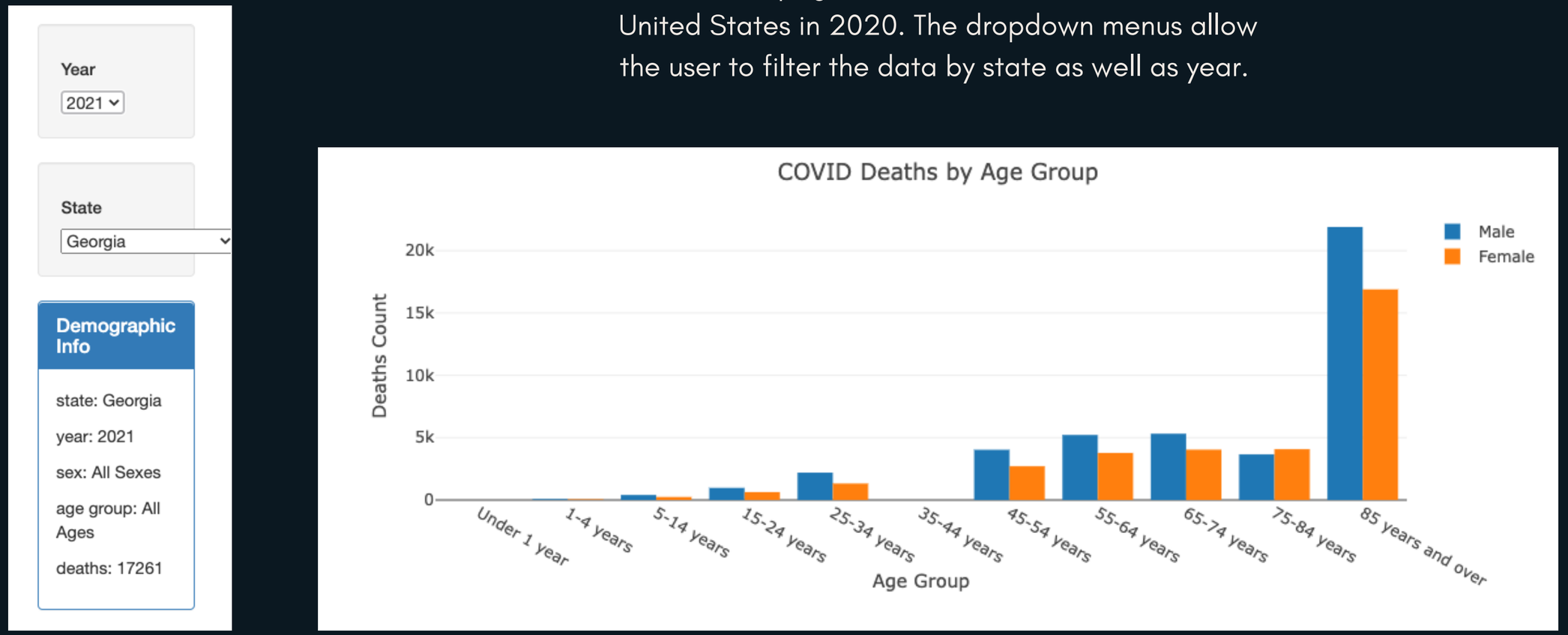
Using Leafet.js, a choropleth map was created visualizing the COVID-19 death rates across the United States. The dark red colors indicate a higher death rate, while the cool blue tones signify less than 50,000 deaths.



Interactive Bar Chart

COVID-19 data filtered by Age, Sex, and State

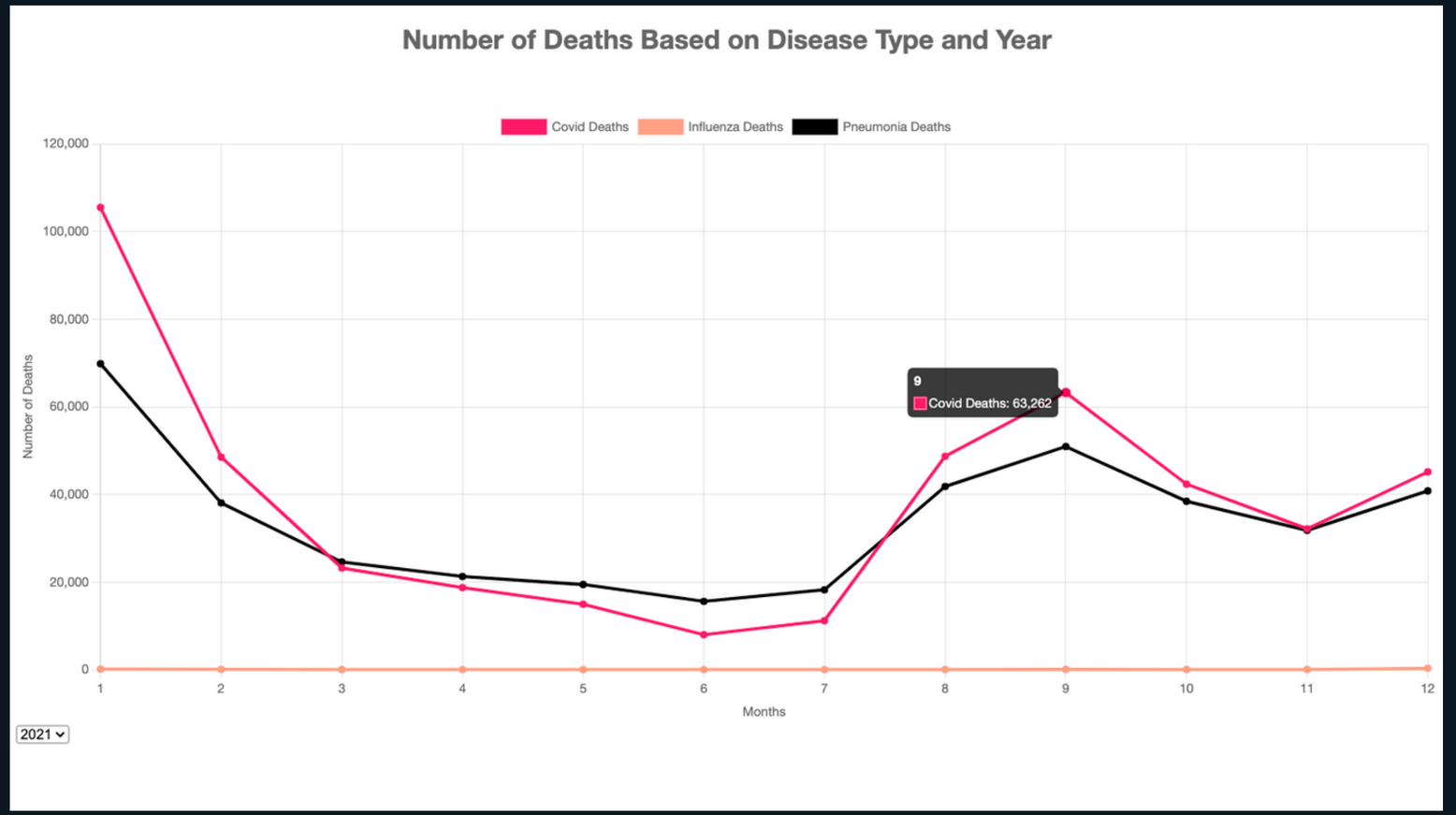
The home page defaults to total deaths in the United States in 2020. The dropdown menus allow the user to filter the data by state as well as year.



Line Graph

Number of Deaths by Disease and Year

Using chart.js, this visualization animates upon loading and when the user changes the year. It clearly illustrates that deaths from the flu are far from the COVID-19 death toll. Since COVID is primarily a respiratory disease, it is expected that pneumonia deaths follow the same trajectory.



In Summary

Our work seeks to provide insights into the spread of COVID-19 across age groups, gender, and location in the United States.

Considerations for Further Investigation

Analysis of the death rate pre/post vaccine roll out, comparing US data to world data, and potential for machine learning models to predict COVID death risk based on an individual's demographics are all areas for potential exploration.

END

Thank You

Please visit the Git Hub repository to further explore this project.

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