



Mapping COVID 19 Infection Rates During US Wildfires

By Allan, Amie, Eboni, and Kevin



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Goal

1. Create a web-based application to map out fires/heat anomalies and COVID-19 infection rates in the US.
2. Try to find a potential relationship between fires and COVID -19 infection rates.
3. Try not to kill each other </3



Intro

- USA Fires and Heat anomalies 2020 observations - **Eboni Lee**
- COVID - 19 Infection rates observations - **Kevin Renois**
- Interactive Demonstration - **Allan Setash, Amie Johnson**
- Conclusions - **Amie Johnson**

Fires

- Why collect data on it?
- Relationship to COVID-19?
- Spikes at the beginning of September
 - California
 - Texas

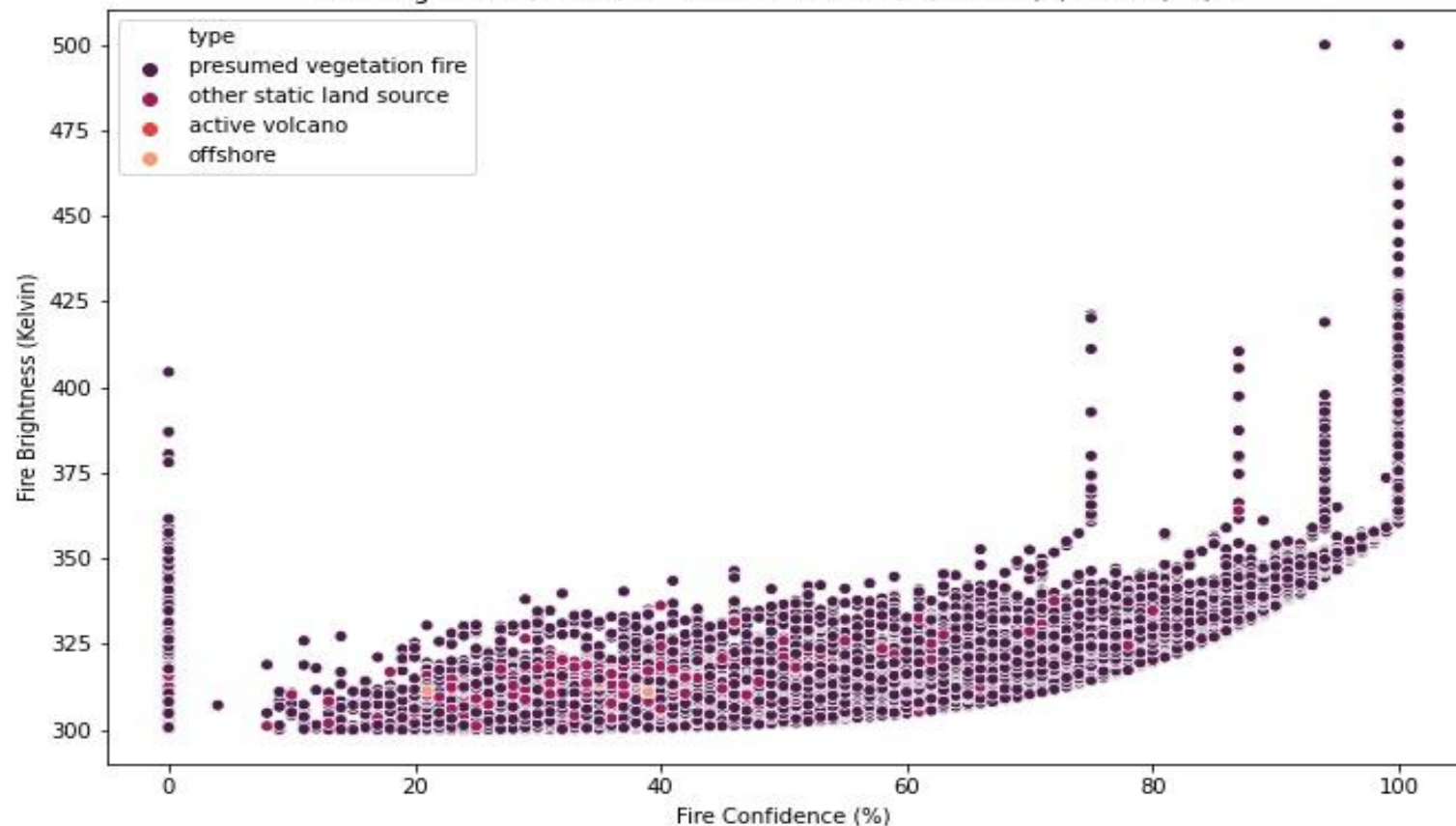




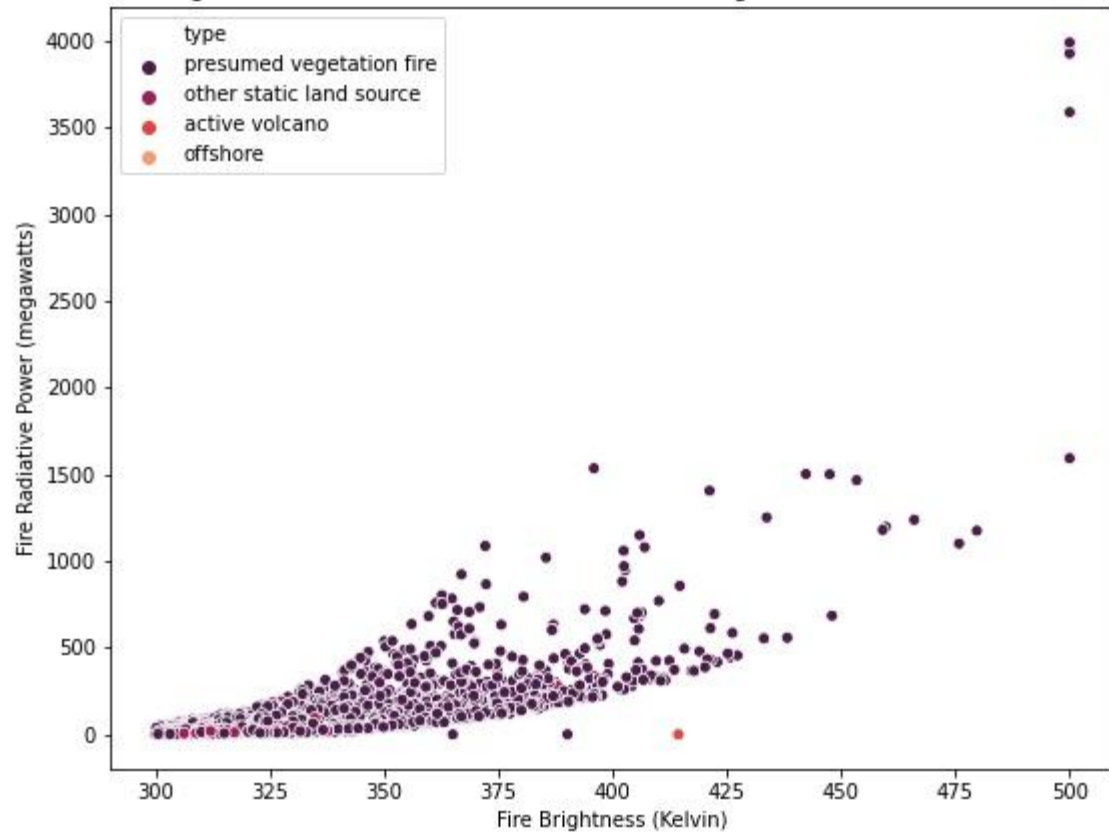
Fire & Heat Anomalies

- Near real-time vs. Standard Quality Data
- Confidence
- Brightness
- Fire Radiative Power

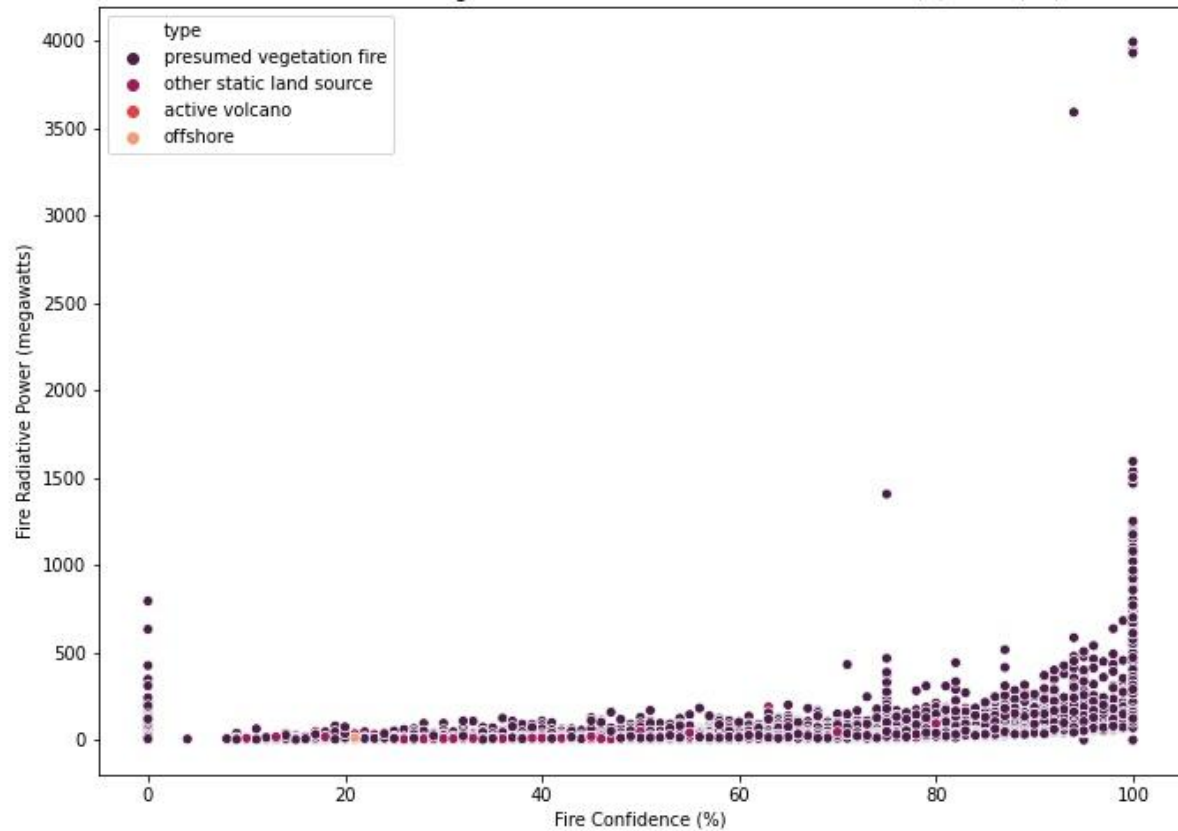
Fire Brightness (Kelvin) vs. Fire Confidence (%) from 1/1/20 to 6/30/20

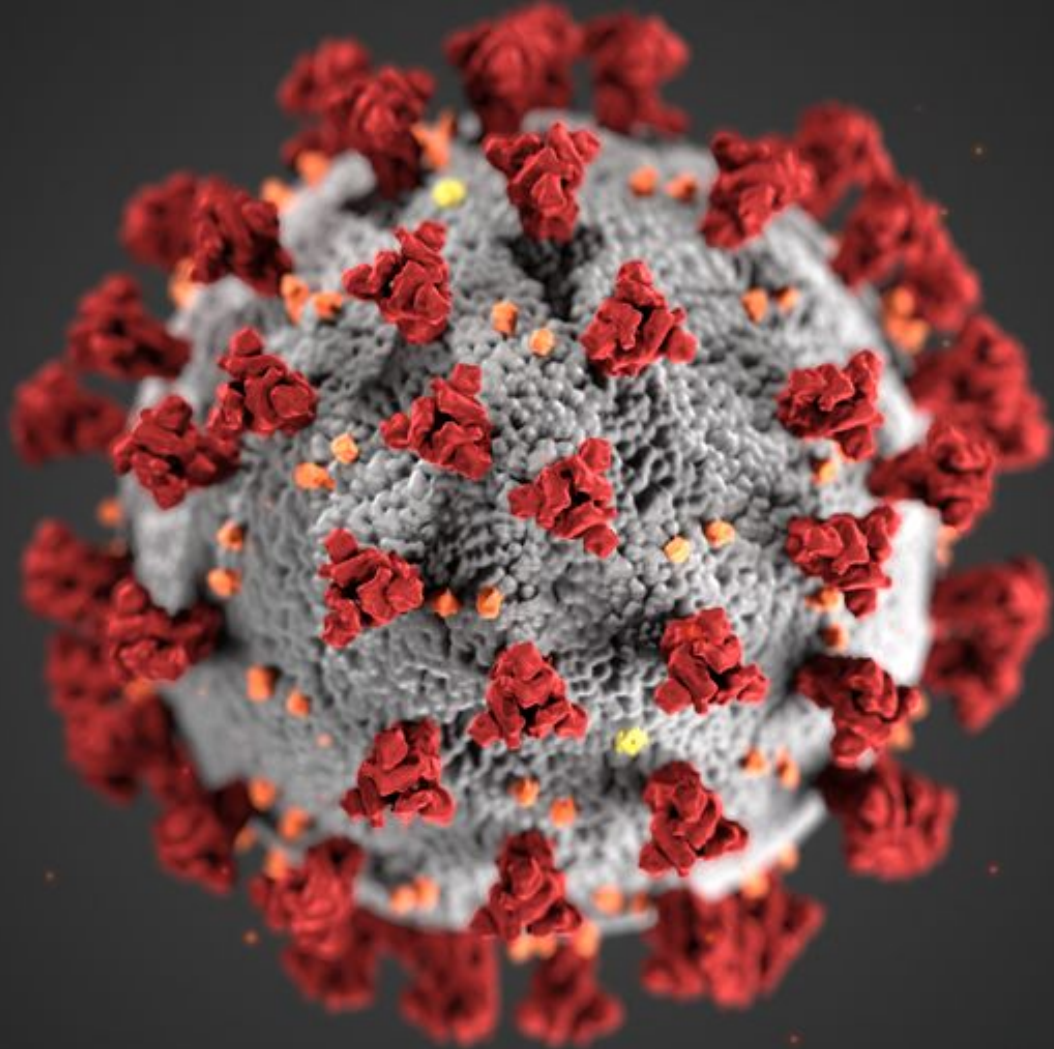


Fire Brightness (Kelvin) vs. Fire Radiative Power (megawatts) from 1/1/20 to 6/30/20



Fire Radiative Power (megawatts) vs. Fire Confidence (Kelvin) from 1/1/20 to 6/30/20



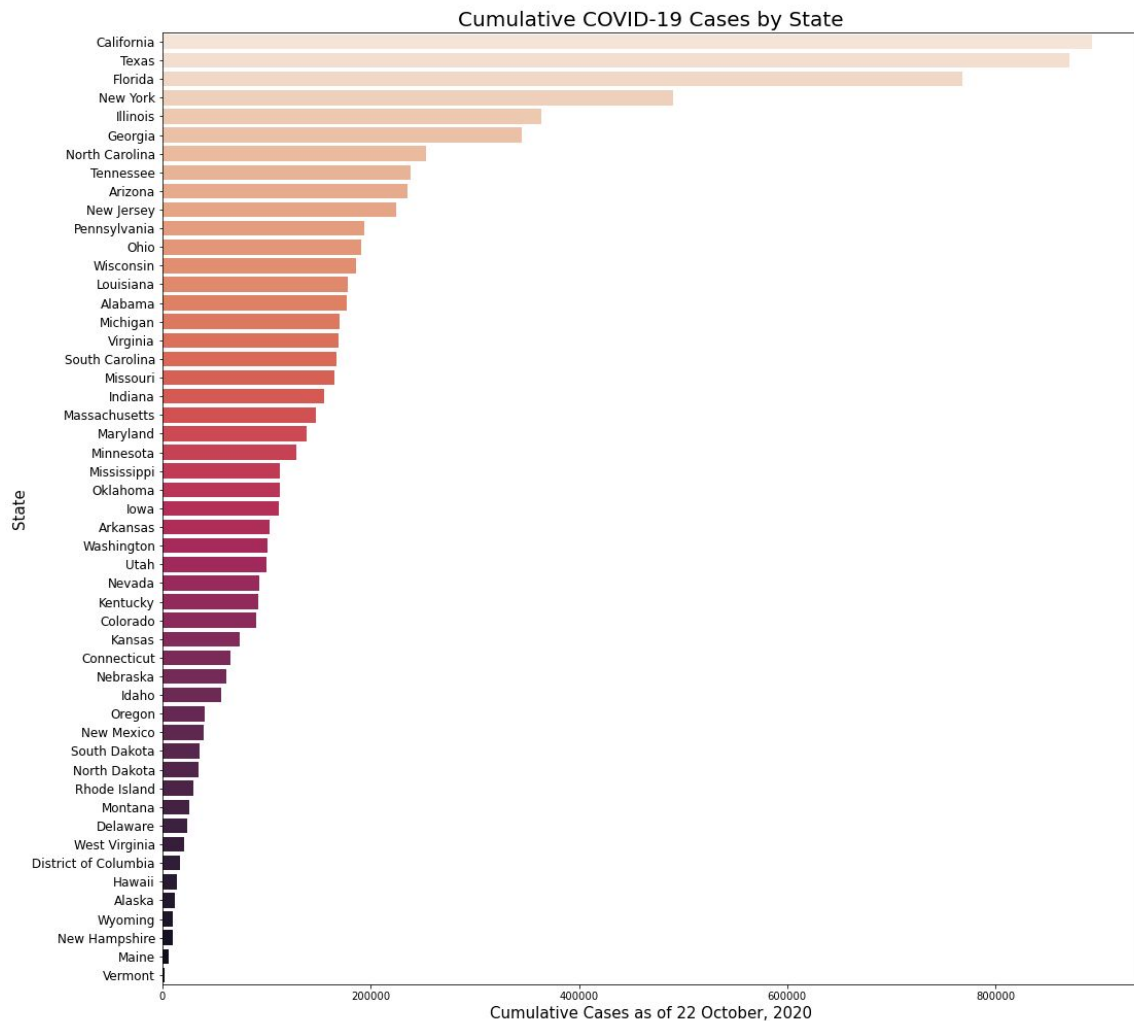




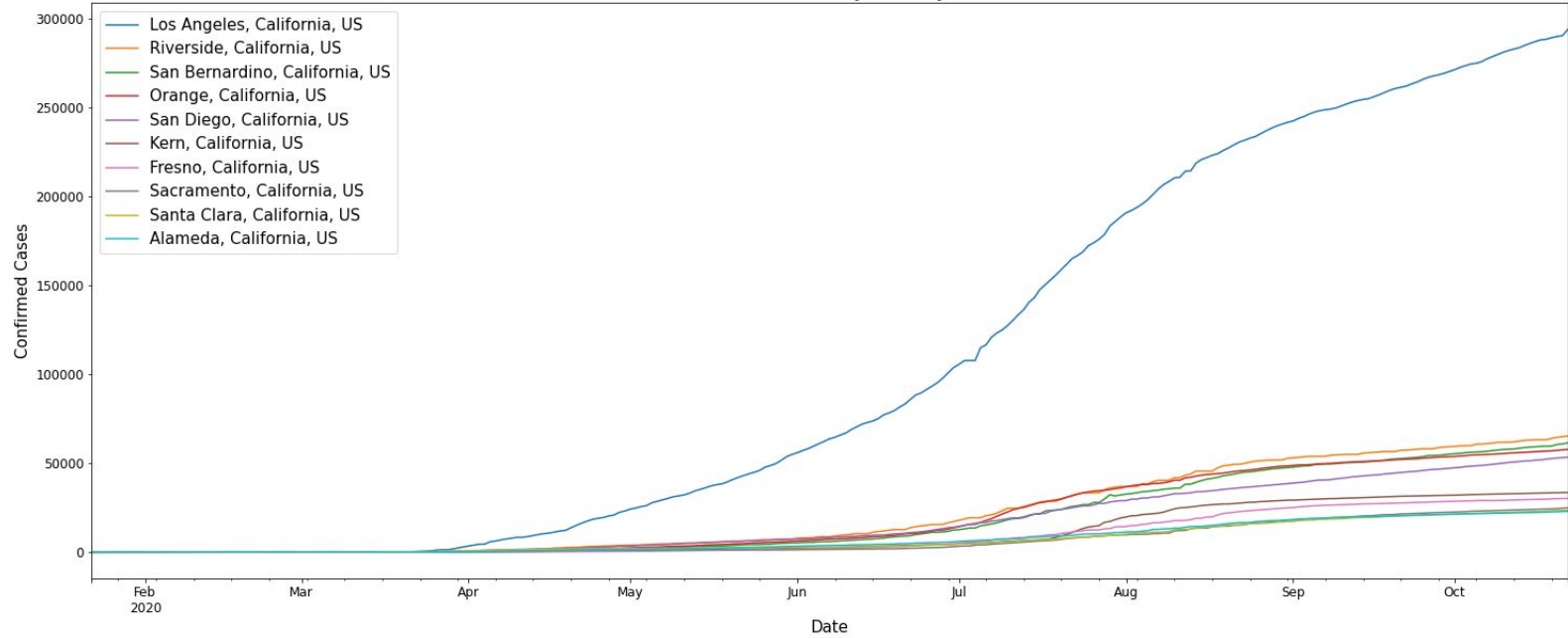
US COVID-19 Infection Rates

Interesting Observations

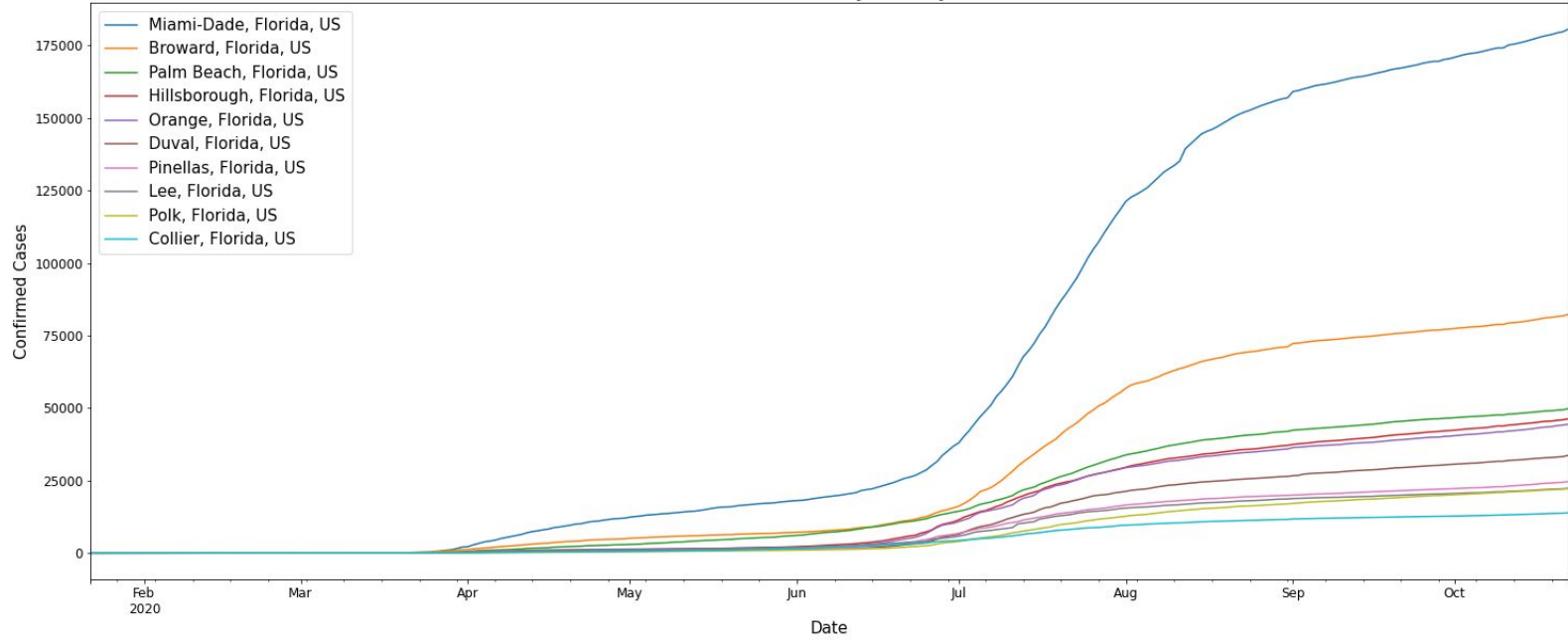
- Highest number of confirmed cases in California, Texas, and Florida
- Sharp increases in daily confirmed cases between the months of July and September



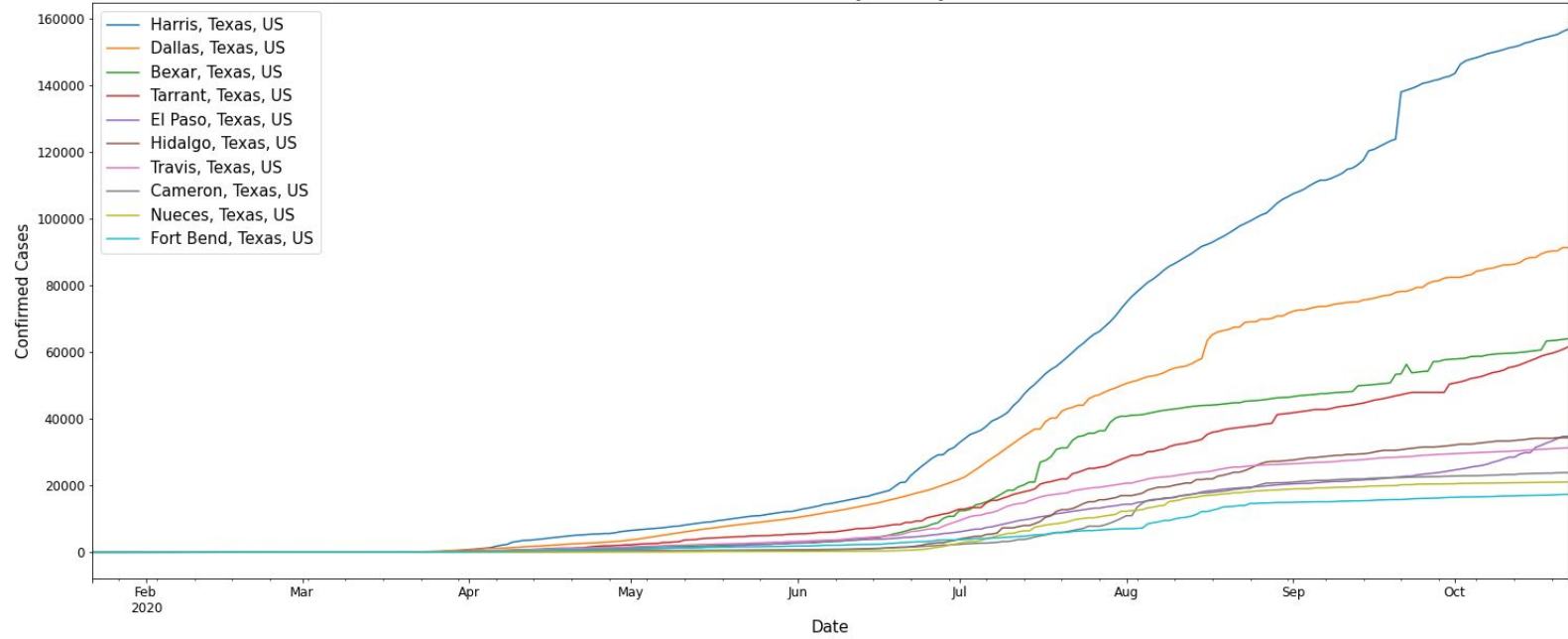
COVID-19 Cases by County - CA



COVID-19 Cases by County - FL



COVID-19 Cases by County - TX

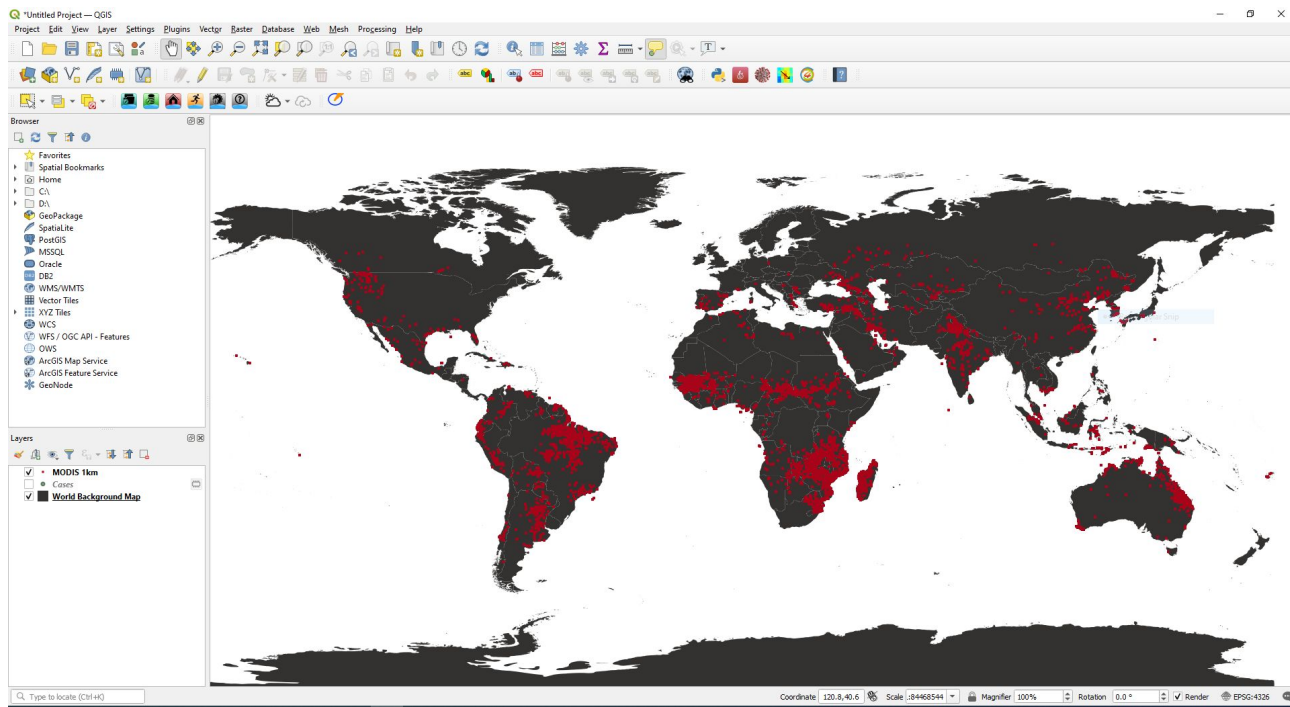


Map-maker, map-maker, make me a map!



The false hope of using QGIS

- Easy to find active fire plug-in
- QGIS allows you to host maps on their own site
- Mapping COVID and putting it all together into flask proved difficult
- Folium is more user friendly and customizable for newbies



Plugging Folium into



Flask

web development,
one drop at a time

- Using the [Folium maps](#) from Eboni and Kevin, along with the cleaned CSVs and GEOPandas data, plugging it all into flask proved easy!
- Using Kevin and Eboni's code, I was able to recreate their heatmaps in VS Code. Then I put that inside of a simple web app, returning some basic HTML and embedding the map inside of that.
- We only created the one page for the web-app. If given more time, we wanted to add extensions to provide graphs based on user input.





Conclusion

- There seems to be a relationship between wildfires and positive Covid-19 cases 14 days later in the US.
- We expected the opposite - possibly poor evacuation measures.
- In the future, we would recommend having stricter regulations surrounding COVID-19 or any pandemic in counties of the US experiencing wildfires or any other natural disaster.