

Supercharging Your Mapping Apps

with



Gatsby

Colby Fayock

Lead UX & Front End Engineer

Element 84

@colbyfayock



June 2019



**RETAIL
SPACE
AVAILABLE**
571.382.1290
rappaportco.com

KINGSTOWNE

BARK=BOX

 **instacart**

 **LOOTCRATE™**

amazon


 **PillPack**

Uber Eats

SAUCEY

THRIVE
- MARKET -



Collierville COVID-19 Restaurant Guide

Below is a list of Restaurants open for Carry-Out or Delivery in Collierville during the 2020 Coronavirus Pandemic

The list is constantly being updated/changed. Please check back periodically.

All

Local

Regional Chain

National Chain

Restaurants:

Bangkok Alley

901-854-8747

Food: Thai, Asian, Sushi

Services: curbside pickup

Website

Local

Bazaar

901-861-7218

Food: Casseroles, Pasta, Sauces,
Tea

Services: Free Local Delivery

Local

Bella's Pizzeria

901-861-2544

Food: Pizza, Pasta, Salads

Services: curbside, delivery

Website

Local

collierville-eats.netlify.app

@colbyfayock

What do you mean a map?



Philadelphia
Pennsylvania

Partly cloudy · 76°F
12:46 PM

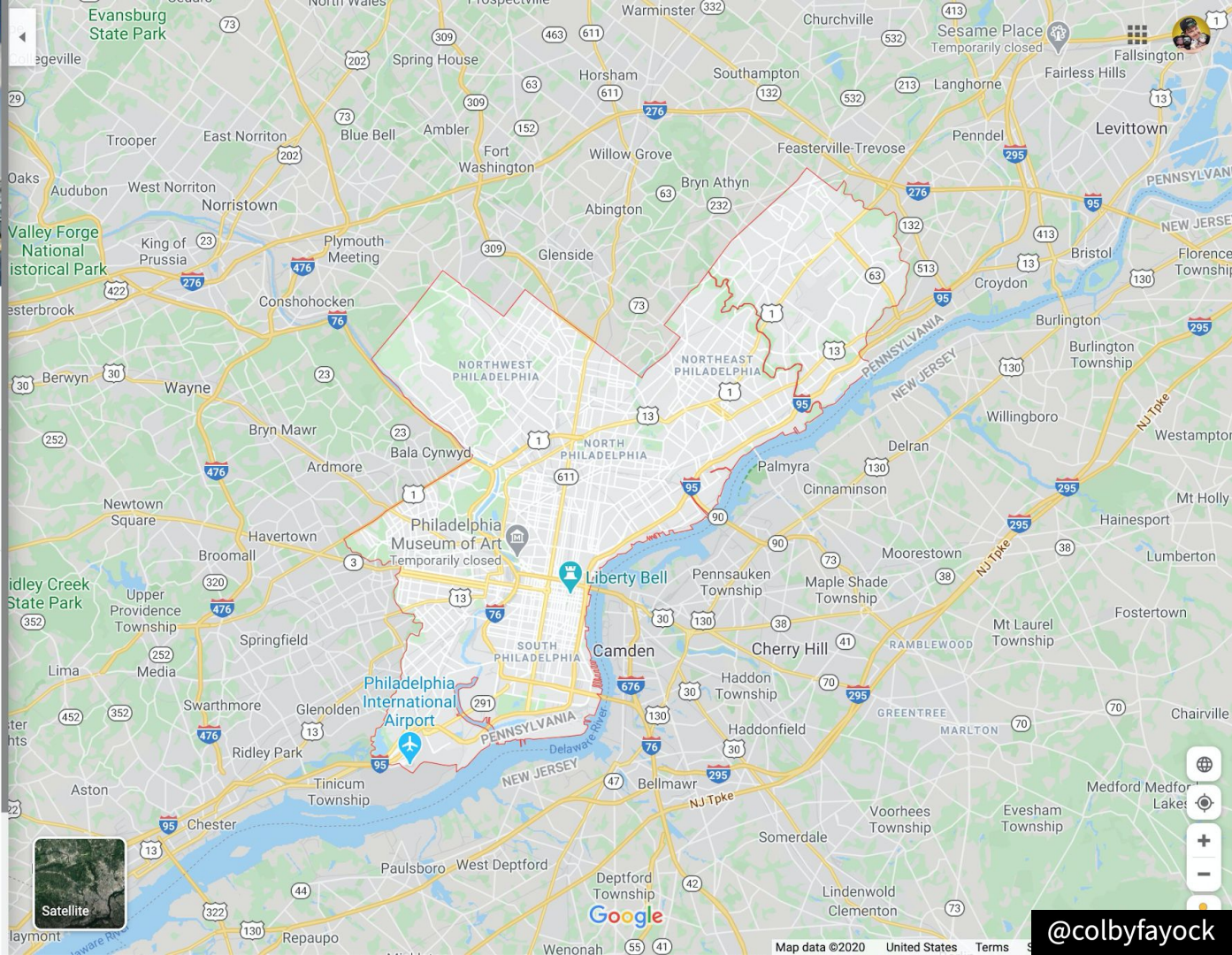
- Directions
- Save
- Nearby
- Send to your phone
- Share

Photos



Quick facts

Philadelphia, Pennsylvania's largest city, is notable for its rich history, on display at the Liberty Bell, Independence Hall (where the Declaration of Independence and Constitution were signed) and other American Revolutionary sites. Also iconic are the steps of the Philadelphia Museum of Art, immortalized





World Map



U.S. Map



Critical Trends



COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)



Total Confirmed

9,030,328

Confirmed Cases by
Country/Region/Sovereignty

2,301,123 US
1,083,341 Brazil
591,465 Russia
425,282 India
306,761 United Kingdom
257,447 Peru
246,963 Chile
246,504 Spain
238,720 Italy
207,525 Iran
197,381 France
191,768 Germany
188,897 Turkey
181,088 Pakistan
180,545 Mexico
161,005 Saudi Arabia
145,784 Bangladesh

Admin0 Admin1 Admin2

Last Updated at (M/D/YYYY)

6/22/2020, 4:33:24 PM

188

countries/regions



Cumulative Confirmed Cases

Active Cases

Incidence Rate

Case-Fatality Ratio

Testing Rate

Hospitalization Rate

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#).Lead by JHU CSSE. Technical Support: [Esri Living Atlas team](#) and JHU APL. Financial Support: JHU and NSF. Click [here](#) to donate to the CSSE dashboard team, and other JHU COVID-19 Research Efforts. [FAQ](#). Read more in this [blog](#). [Contact US](#).Data sources: [WHO](#), [CDC](#), [ECDC](#), [NHC](#), [DXY](#), [1point3acres](#), [Worldometers.info](#), the [COVID Tracking Project](#) (testing and

Global Deaths

469,939

120,271 deaths
US50,591 deaths
Brazil42,731 deaths
United Kingdom34,657 deaths
Italy29,666 deaths
France28,324 deaths
Spain21,825 deaths
Mexico

13,699 deaths

Global Deaths

US State Level
Deaths, Recovered31,168 deaths, 69,506 recovered
New York US12,974 deaths, 29,450 recovered
New Jersey US7,873 deaths, recovered
Massachusetts US6,671 deaths, recovered
Illinois US6,426 deaths, 62,932 recovered
Pennsylvania US6,097 deaths, 49,290 recovered
Michigan US5,525 deaths, recovered
California US

4,263 deaths, 7,842 recovered

US Deaths, Recovered



Confirmed

Logarithmic

Daily Cases

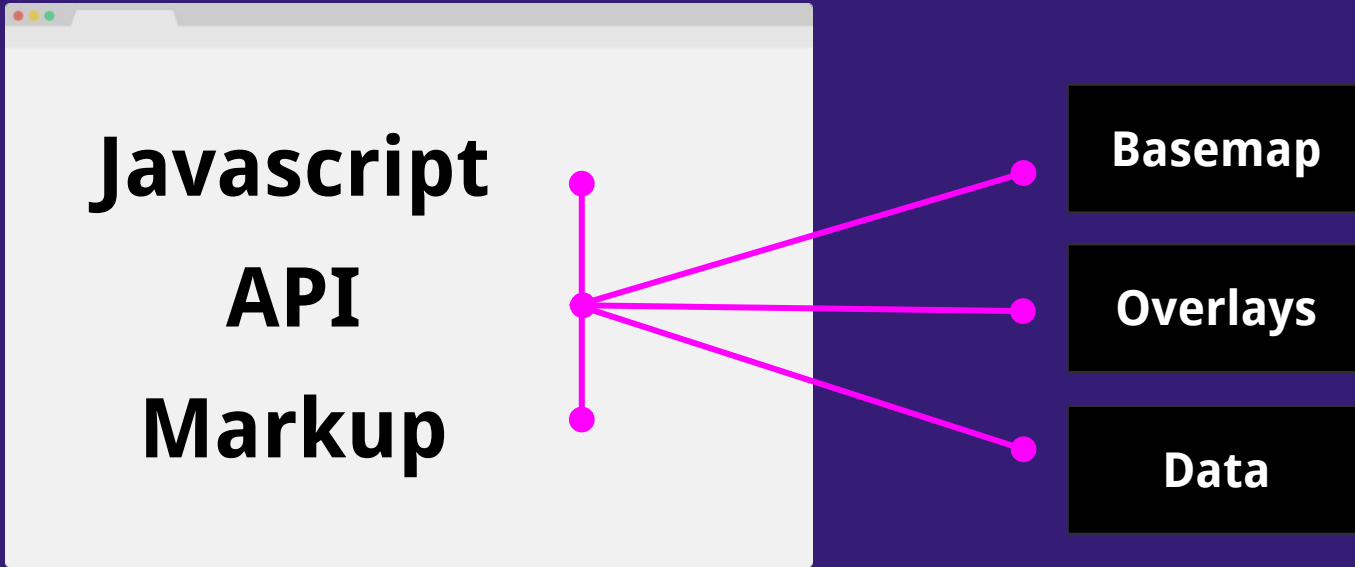
@colbyfayock

How how to maps work?

JAMstack



JAMstack



Javascript

APIs

Markup

Getting started

- Introduction
- Leaflet setup
- Installation
- Examples

API

- Context
- Events
- Components

Guides

- Creating custom components
- Class hierarchy

Extra

- Logo & Branding
- Third-party plugins

Components

[EDIT](#)

△ Before starting to use the following components, make sure to understand the difference between the **static** and **dynamic** properties documented in this page.

The properties documented as **dynamic properties** are updated using the relevant Leaflet setter, other properties **will not update** the component when they are changed after the component is mounted.

All other properties are passed as the `options` argument to their corresponding Leaflet element and should work fine for static maps, it is however unlikely that they would get updated if you change them afterwards.

 You can directly access the Leaflet element created by a component using `this.leafletElement` in the component. The leaflet element is usually created in `componentWillMount()` and therefore accessible in `componentDidMount()`. Except for the `Map` component where it can only be created after the `<div>` container is mounted. You can find out the details in the [component lifecycle](#) section. See how to interact with the component lifecycle by the [component lifecycle](#) guide.

React Leaflet

- Base components
 - DivOverlay
 - MapComponent
 - MapControl
 - MapEvented
 - MapLayer
 - Path
- Map
 - Pane
- UI Layers
 - Marker
 - Popup

Base components

- DivOverlay
- MapComponent
- MapControl
- MapEvented
- MapLayer
- Path

Map

- Pane

UI Layers

- Marker
- Popup
- Tooltip

Raster Layers

- TileLayer
- WMSTileLayer
- ImageOverlay
- VideoOverlay

Vector Layers

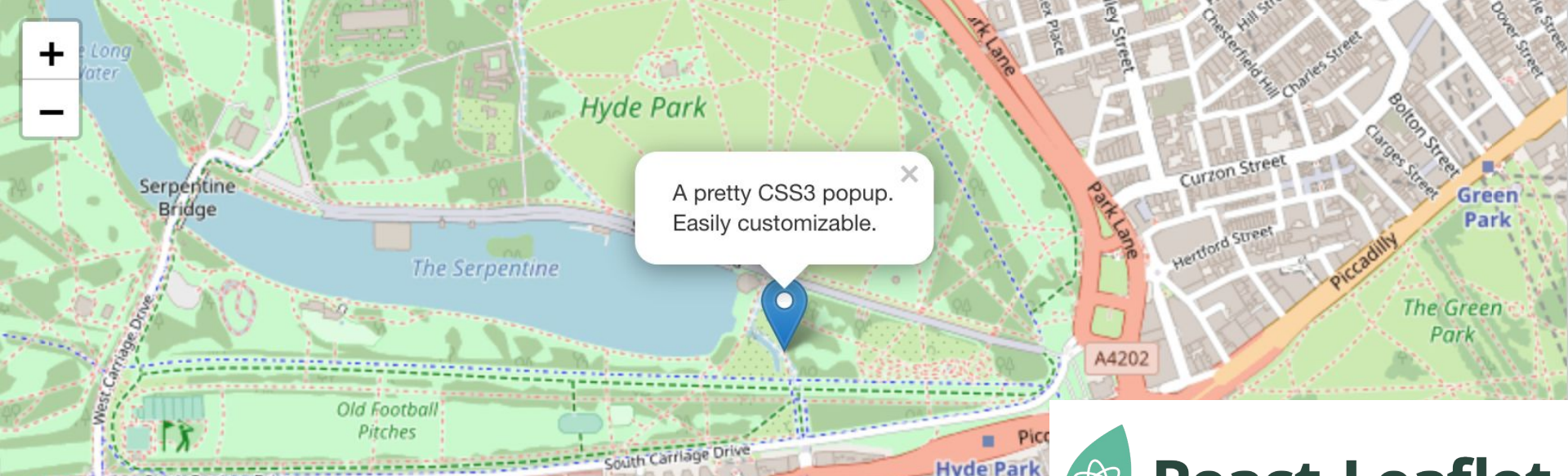
- Circle
- CircleMarker
- Polyline
- Polygon
- Rectangle

Other Layers

- FeatureGroup
- GeoJSON
- GridLayer

A map of Hyde Park in London, showing The Serpentine lake, Old Football Pitches, and surrounding streets like Park Lane and Knightsbridge. A blue location pin is placed on the map, with a white CSS3 popup box containing text. The popup has a close button (X) in the top right corner. In the top left corner, there are zoom in (+) and zoom out (-) controls.

A pretty CSS3 popup.
Easily customizable.



React Leaflet

```
2 import { Map, Marker, Popup, TileLayer } from 'react-leaflet'
3
4 const MyMap = (
5   <Map center={[51.505, -0.09]} zoom={13}>
6     <TileLayer url="https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png" attribution="&copy; OpenStreetMap contributors, Imagery © Mapbox" />
7     <Marker position={[51.505, -0.09]}>
8       <Popup>A pretty CSS3 popup.<br />Easily customizable.</Popup>
9     </Marker>
10   </Map>
11 )
```

@colbyfayock

Initializing the Map

A pretty CSS3 popup.
Easily customizable.

Coordinates

Component

Zoom



React Leaflet

```
2  import Map, { Marker, Popup, TileLayer } from 'react-leaflet'
3
4  const MyMap = (
5    <Map center={[51.505, -0.09]} zoom={13}>
6      <TileLayer url="https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png" attribution="&copy; OpenStreetMap contributors, Imagery © Mapbox" />
7      <Marker position={[51.505, -0.09]}>
8        <Popup>A pretty CSS3 popup.<br />Easily customizable.</Popup>
9      </Marker>
10    </Map>
11  )
```


Rendering the Map

A pretty CSS3 popup.
Easily customizable.



React Leaflet

```
2 import { Map, Marker, Popup, TileLayer } from 'react-leaflet'
```

```
4 const MyMap = (
```

```
5   <Map center={[51.505, -0.09]} zoom={13}>
```

```
6     <TileLayer url="https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png" attribution="&copy; OpenStreetMap contributors, Imagery © Mapbox" />
```

```
7     <Marker position={[51.505, -0.09]}>
```

```
8       <Popup>A pretty CSS3 popup.<br />Easily customizable.</Popup>
```

```
9     </Marker>
```

```
10   </Map>
```

```
11 )
```

Tile Layer URL

Attribution

Adding a Marker

A pretty CSS3 popup.
Easily customizable.



React Leaflet

Coordinates

Component

Marker Content

```
2 import { Map, Marker, Popup, TileLayer } from 'react-leaflet'
3
4 const MyMap = (
5   [51.505, -0.09] } zoom={12}
6   <TileLayer url="https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png" attribution="&copy; OpenStreetMap contributors, Imagery © Mapbox" />
7   <Marker position={[51.505, -0.09]}>
8     <Popup>A pretty CSS3 popup.<br />Easily customizable.</Popup>
9   </Marker>
10 </Map>
11 )
```


+

-

Hyde Park

A pretty CSS3 popup.
Easily customizable.

The Serpentine

Old Football
Pitches

South Carriage Drive

Knightsbridge

Hyde Park
Corner

Piccadilly Underpass

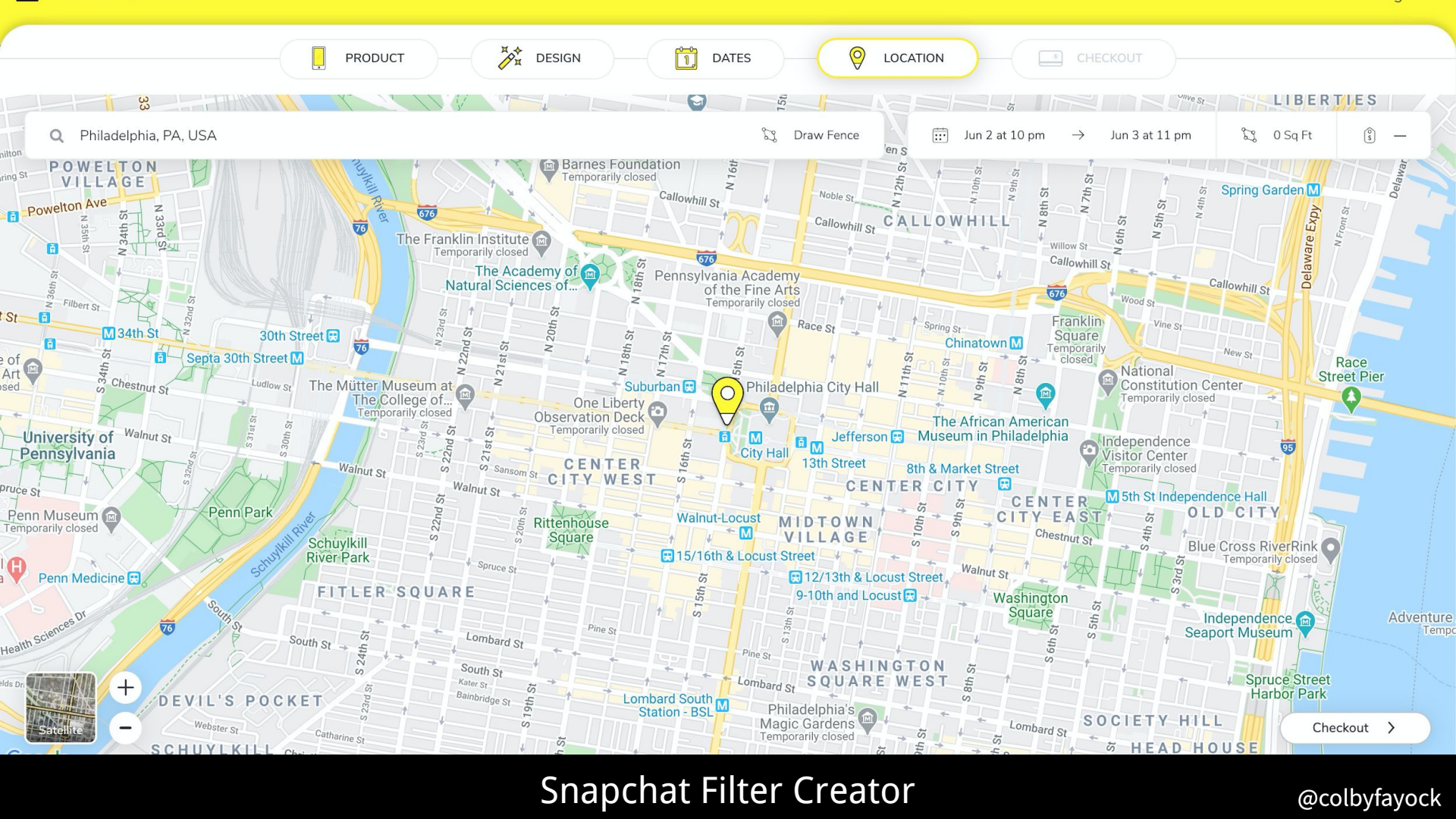
A4202

Park Lane

Curzon Street

Hertford Street

✓ Javascript APIs Markup



PRODUCT



DESIGN



DATES



LOCATION



CHECKOUT

Philadelphia, PA, USA



Draw Fence



Jun 2 at 10 pm



Jun 3 at 11 pm



0 Sq Ft



Checkout >

Snapchat Filter Creator

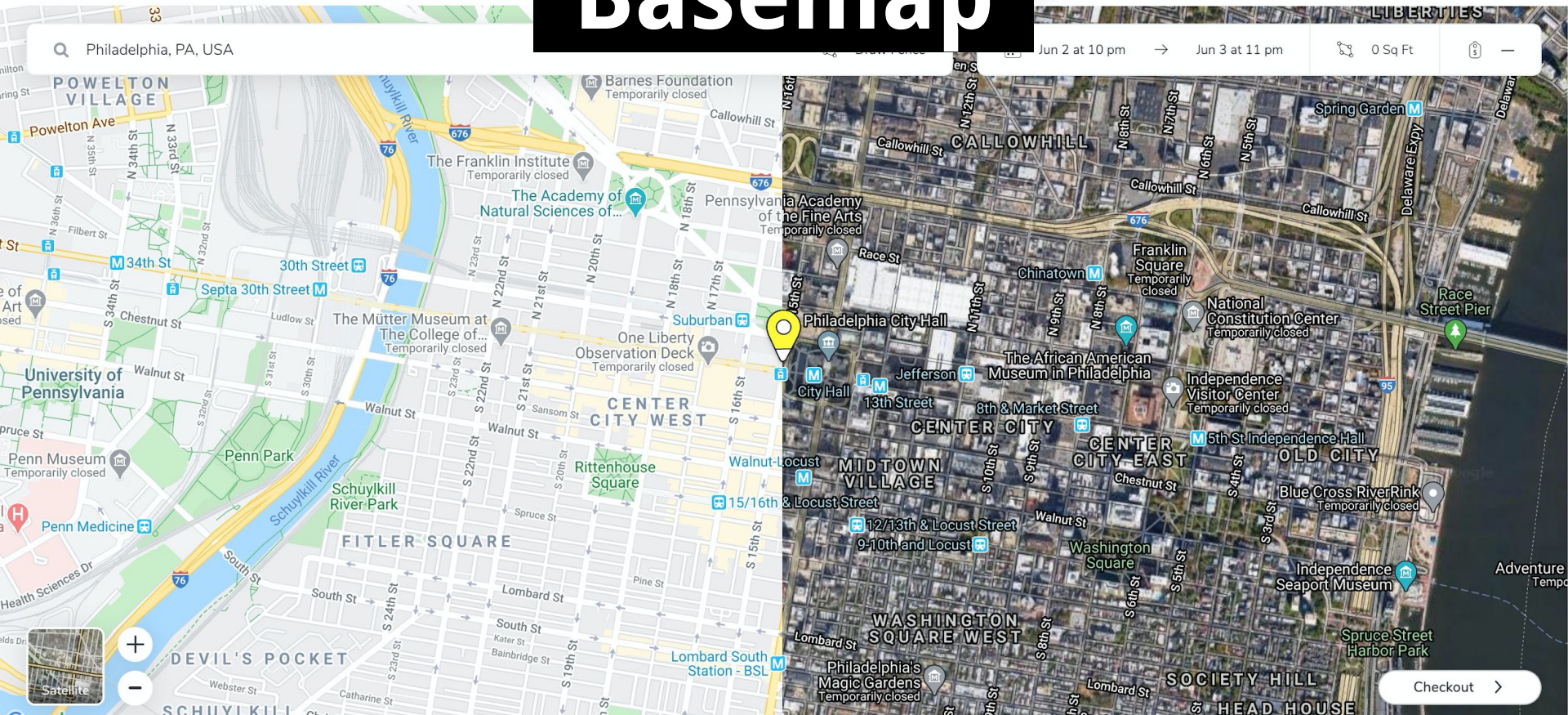
@colbyfayock

PRODUCT

Basemap

CHECKOUT

Philadelphia, PA, USA



Snapchat Filter Creator

@colbyfayock

PRODUCT

Overlays

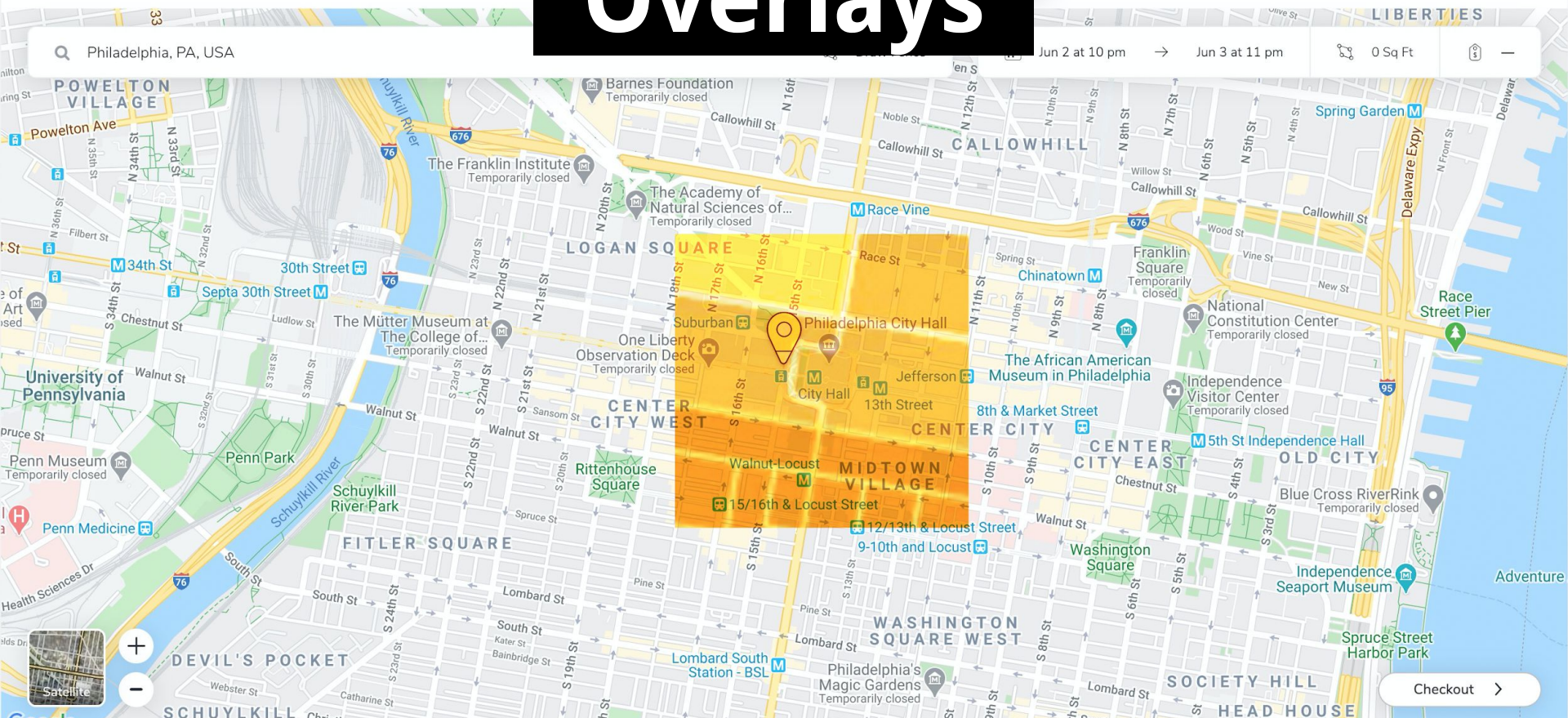
CHECKOUT

Philadelphia, PA, USA

Jun 2 at 10 pm

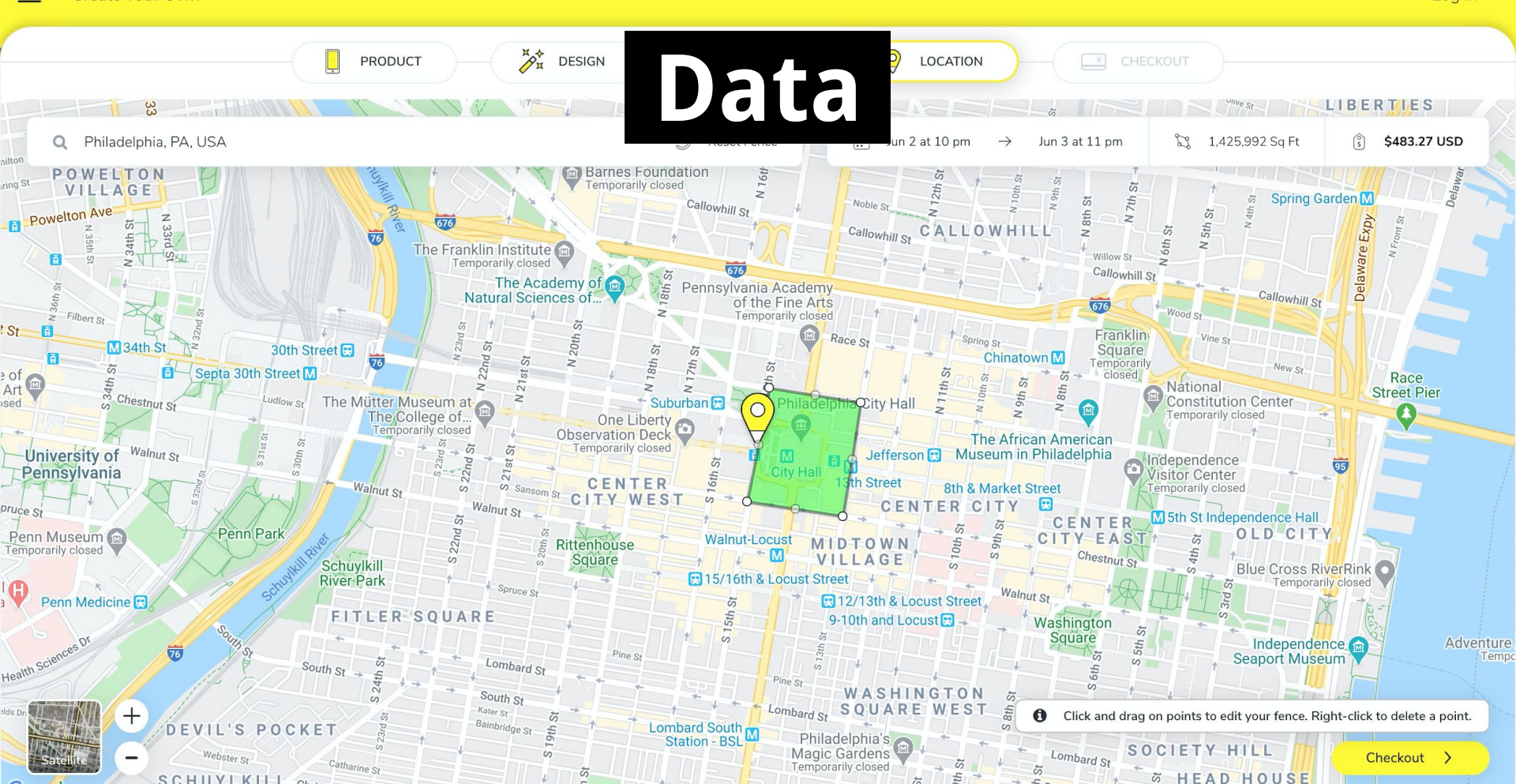
Jun 3 at 11 pm

0 Sq Ft



Snapchat Filter Creator

@colbyfayock



Data

Snapchat Filter Creator

@colbyfayock

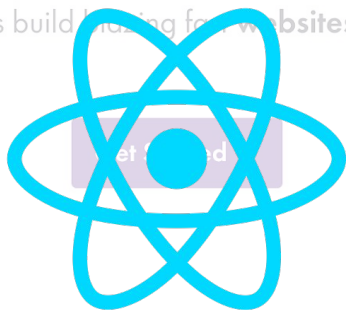
✓ Javascript
✓ APIs
Markup



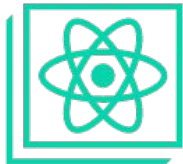
webpack

Fast in every way that matters

Gatsby is a free and open source framework based on React that helps developers build blazing fast websites and apps



How Gatsby works



Create React App

Pull data from anywhere

DATA SOURCES

CMSs

Contentful, Drupal, WordPress, etc.

Markdown

Documentation, Posts, etc.

Data

APIs, Databases, YAML, JSON, CSV, etc.



Gatsby

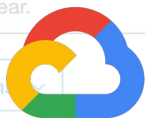
Type a prefix and press Enter to search. Press ESC to clear.

Upload

+ Create folder

Download

Actions



Google Cloud

US East (N. Virginia)

Viewing 1 to 37

Name ▾	Last modified ▾	Size ▾	Storage class ▾
404	--	--	--
app	--	--	--
page-data	--	--	--
static	--	--	--
1-2cf8cc6c7e32c0e0b6a4.js	Jul 22, 2019 7:56:37 AM GMT-0400	18.6 KB	Standard
1-2cf8cc6c7e32c0e0b6a4.js.map	Jul 22, 2019 7:56:37 AM GMT-0400	74.1 KB	Standard
1-d2237bf650a9e986cc8e.js	Jul 22, 2019 7:56:37 AM GMT-0400	22.7 KB	Standard
1-d2237bf650a9e986cc8e.js.map	Jul 22, 2019 7:56:37 AM GMT-0400	88.4 KB	Standard
404.html	Jul 22, 2019 7:56:37 AM GMT-0400	4.7 KB	Standard
app-05eb6b5c3816788017fb.js	Jul 22, 2019 7:56:38 AM GMT-0400	700.2 KB	Standard
app-05eb6b5c3816788017fb.js.map	Jul 22, 2019 7:56:38 AM GMT-0400	100.1 KB	Standard



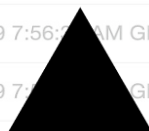
aws



Azure



netlify



Vercel

So, why Gatsby?

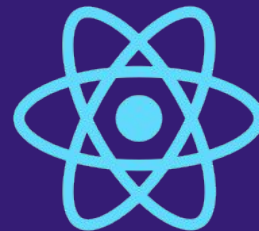
Tooling...

...is hard

...takes time

...is always changing

...is generally a pain



Focus on the important bits!

Build a map, not a front end



Collierville COVID-19 Restaurant Guide

Below is a list of Restaurants open for Carry-Out or Delivery in Collierville during the 2020 Coronavirus Pandemic

The list is constantly being updated/changed. Please check back periodically.

All

Local

Regional Chain

National Chain

Restaurants:

Bangkok Alley

901-854-8747

Food: Thai, Asian, Sushi

Services: curbside pickup

Website

Local

Bazaar

901-861-7218

Food: Casseroles, Pasta, Sauces,
Tea

Services: Free Local Delivery

Local

Bella's Pizzeria

901-861-2544

Food: Pizza, Pasta, Salads

Services: curbside, delivery

Website

Local

collierville-eats.netlify.app

@colbyfayock

Gatsby Recipe React Leaflet

→ collierville-eats git:(master) ✖ gatsby recipes https://raw.githubusercontent.com/colbyfayock/gatsby-recipe-react-leaflet

Thank you for trying the experimental version of Gatsby Recipes!

Please ask questions, share your recipes, report bugs, and
subscribe for updates in our umbrella issue at
<https://github.com/gatsbyjs/gatsby/issues/22991>

Setup Gatsby with React Leaflet

React_Leaflet is a component library bringing React Components to Leaflet.

>> Press enter to continue

@colbyfayock

_data/posts/bangkok-alley.md

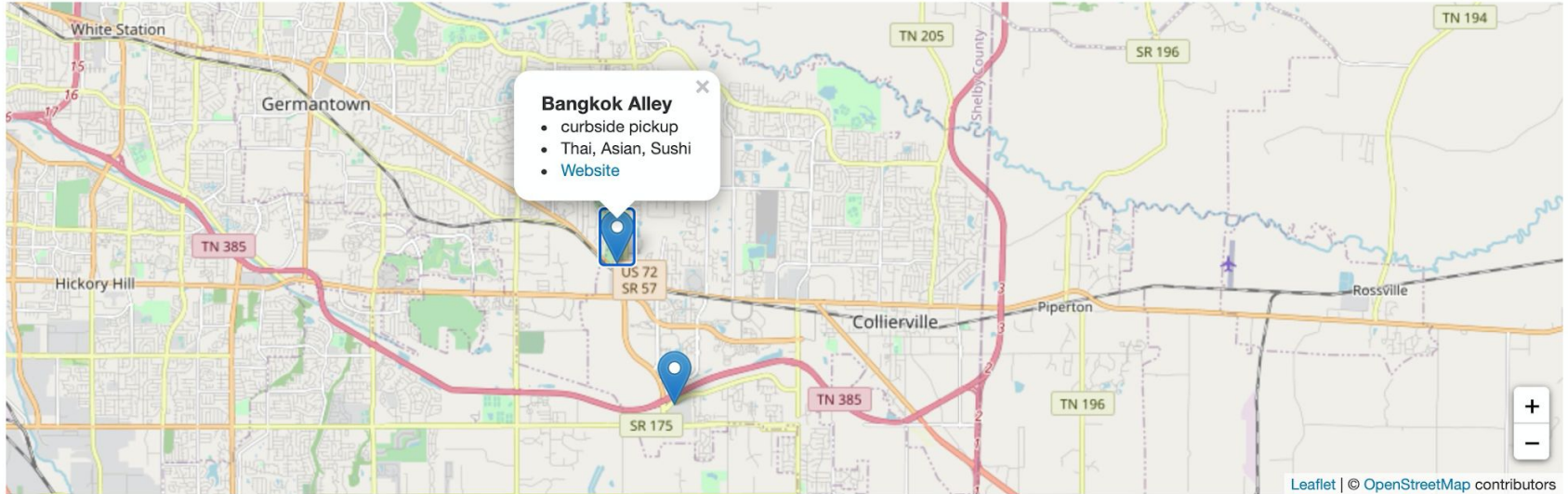
```
6   phone: 901-854-8747
7   website: http://www.bangkokalley.com/
8   services: curbside pickup
9 + location: 35.053509, -89.734628
10  ---
```

src/pages/index.js

```
55   <h2>Restaurants:</h2>
56 +   <Map center={DEFAULT_CENTER} zoom={12}>
57 +     { restaurants.map(restaurant => {
58 +       const { title, services, tags, website, location, id } = restaurant;
59 +       const locationSplit = location.split(',').map(i => i.trim());
60 +       const center = [locationSplit[0], locationSplit[1]];
61 +       return (
62 +         <Marker key={id} position={center}>
63 +           <Popup>
64 +             <h3>
65 +               { title }
66 +             </h3>
```


[All](#)[Local](#)[Regional Chain](#)[National Chain](#)

Restaurants:



Bangkok Alley

901-854-8747

Food: Thai, Asian, Sushi

Services: curbside pickup

[Website](#)

[Local](#)

Bazaar

901-861-7218

Food: Casseroles, Pasta, Sauces, Tea

Services: Free Local Delivery

Bella's Pizzeria

901-861-2544

Food: Pizza, Pasta, Salads

Services: curbside, delivery

[Website](#)

[Local](#)

collierville-eats-map.netlify.app

@colbyfayock

Building a Mapping App with Gatsby



Gats B's



Gats B's

Your local family favorite restaurant!

📍 [VIEW LOCATIONS](#)

Oak Hill

Tysons Corner

McLean

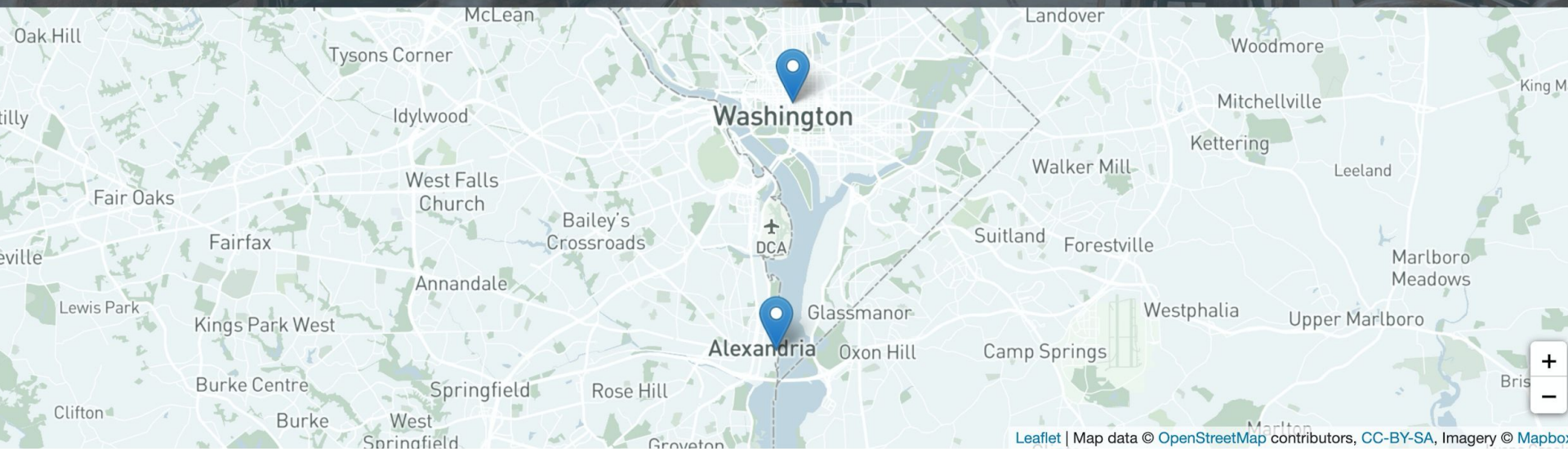
Landover

Woodmore

Mitchellville

gatsbs.netlify.app

@colbyfayock



Locations

Washington, DC - New York Ave

Alexandria, VA - Union St

gatsbs.netlify.app

@colbyfayock



Washington, DC - New York Ave

Address

1401 New York Ave NW
Washington, DC 20005

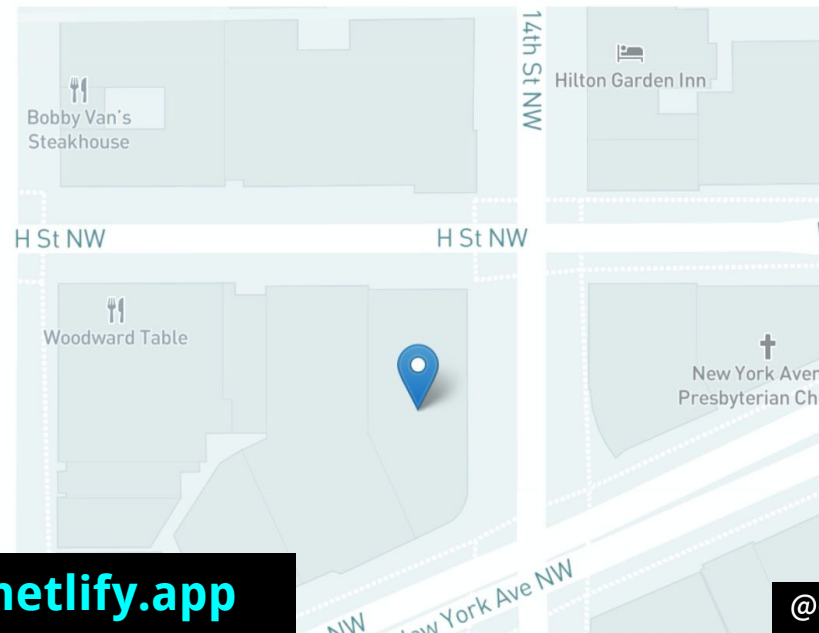
Phone Number

(123) 456-7890

Hours

Mon - Thurs: 11am - 10pm
Fri - Sat: 9am - 12pm
Sun: 9am - 10pm

More Info



gatsbs.netlify.app

@colbyfayock



Gatsby Leaflet Starter

Welcome to your new Gatsby site. Now go build something great!

Still Getting Started?

Run the following in your terminal!

```
gatsby new [directory] https://github.com/colbyfayock/gatsby-starter-leaflet
```

Note: Gatsby CLI required globally for the above command



@colbyfayock


```

const path = require('path');
const parameterize = require('parameterize')

const createRestaurantError = 'Could not create post pages';

exports.createPages = async ({ actions, graphql }) => {
  const { createPage } = actions;

  const restaurantTemplate = path.resolve(`./src/templates/r

  const { data, errors } = await graphql(`
    query {
      gcms {
        restaurants {
          address
          hours
          delivery
          phoneNumber
          name
          id
          location {
            latitude
            longitude
          }
          photo {
            url
            width
            height

```

```

    if (errors) throw errors;

    const { restaurants } = data.gcms || {};

    if ( !Array.isArray(restaurants) ) {
      throw new Error(`${createRestaurantError}: Invalid
    }

    restaurants.forEach(({ id, name }) => {
      const slug = parameterize(name);
      createPage({
        path: `/${slug}/`,
        component: restaurantTemplate,
        context: {
          id,
          slug
        }
      });
    });

    };

    exports.onCreateNode = ({ node, actions }) => {
      const { createNodeField } = actions
      if (node.internal.type === `SitePage`) {
        const slug = node.context && node.context.slug;

        if ( !slug ) return;

```




```

1 query MyQuery {
2   gcms {
3     restaurants {
4       address
5       delivery
6       hours
7       name
8       phoneNumber
9       location {
10        latitude
11        longitude
12      }
13      photo {
14        url
15      }
16    }
17  }
18 }
19

```

QUERY VARIABLES

```

"data": {
  "gcms": {
    "restaurants": [
      {
        "address": "1401 New Yo
        "delivery": true,
        "hours": "Mon - Thurs:
        "name": "Washington, DC
        "phoneNumber": 12345678
        "location": {
          "latitude": 38.899781
          "longitude": -77.0323
        },
        "photo": {
          "url": "https://media
        }
      },
      {
        "address": "100 S Union
        "delivery": false,
        "hours": "Sun - Thurs:
        "name": "Alexandria, VA
        "phoneNumber": 12345678
        "location": {
          "latitude": 38.804112
          "longitude": -77.0401
        },
      },
    ]
  }
}

```

```

1 import { graphql, useStaticQuery } from 'gatsby'
2 import parameterize from 'parameterize';
3
4 export default function useRestaurants() {
5
6   const { gcms = {} } = useStaticQuery(graphql`
7     query {
8       gcms {
9         restaurants {
10           address
11           hours
12           delivery
13           phoneNumber
14           name
15           id
16           location {
17             latitude
18             longitude
19           }
20           photo {
21             url
22             width
23             height
24           }
25         }
26       }
27     }
28 `)

```

```

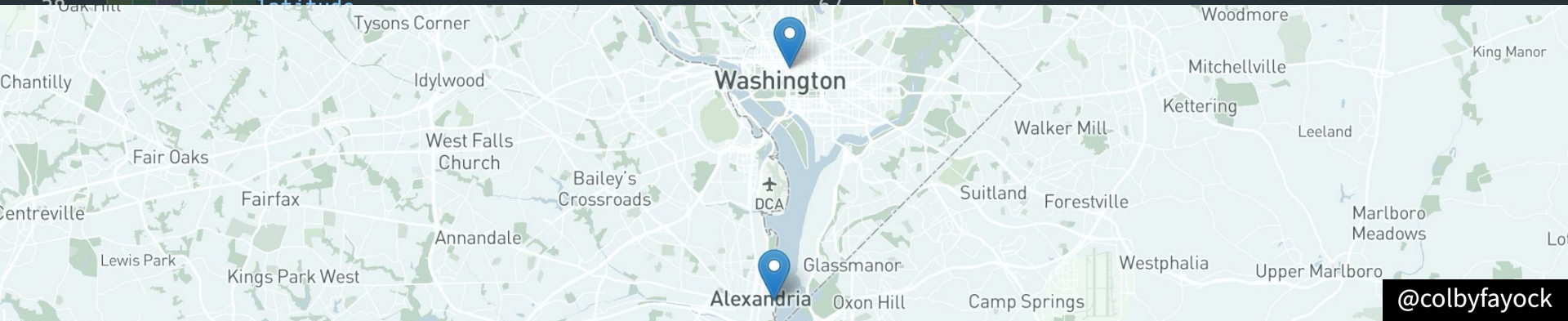
21  const IndexPage = () => {
22    const { restaurants } = useRestaurants();
23
24    const restaurantsGeoJson = {
25      type: 'FeatureCollection',
26      features: restaurants.map((restaurant = {}) => {
27        const { location = {} } = restaurant;
28        const { latitude, longitude } = location;
29        return {
30          type: 'Feature',
31          properties: {
32            ...restaurant
33          },
34          geometry: {
35            type: 'Point',
36            coordinates: [
37              longitude,

```

```

49  function mapEffect({ leafletElement: map } = {}) {
50    if ( !map ) return;
51
52    map.eachLayer(layer => {
53      const { options = {} } = layer;
54      const { name } = options;
55      if ( name === DEFAULT_BASEMAP ) return;
56      map.removeLayer(layer);
57    })
58
59    const geoJson = new L.GeoJSON(restaurantsGeoJson);
60    const geoJsonBounds = geoJson.getBounds();
61
62    geoJson.addTo(map);
63
64    map.fitBounds(geoJsonBounds);
65    map.setZoom(map.getZoom() - 1);
66
67  }

```





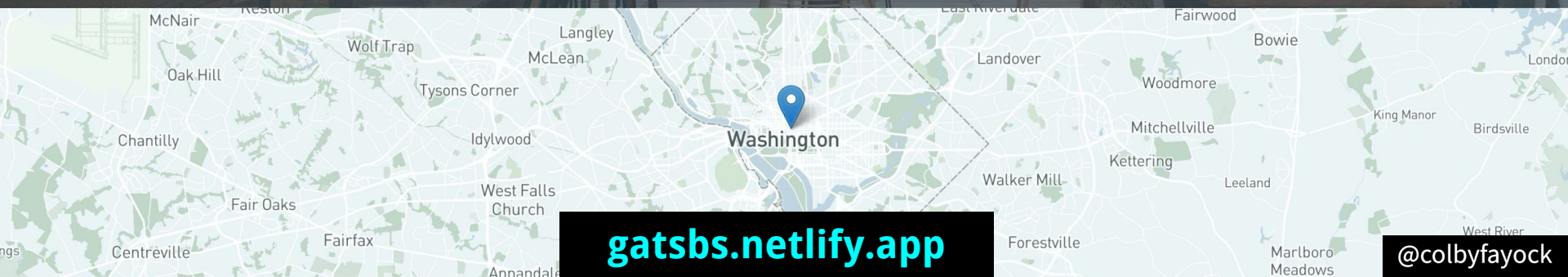
Gats B's



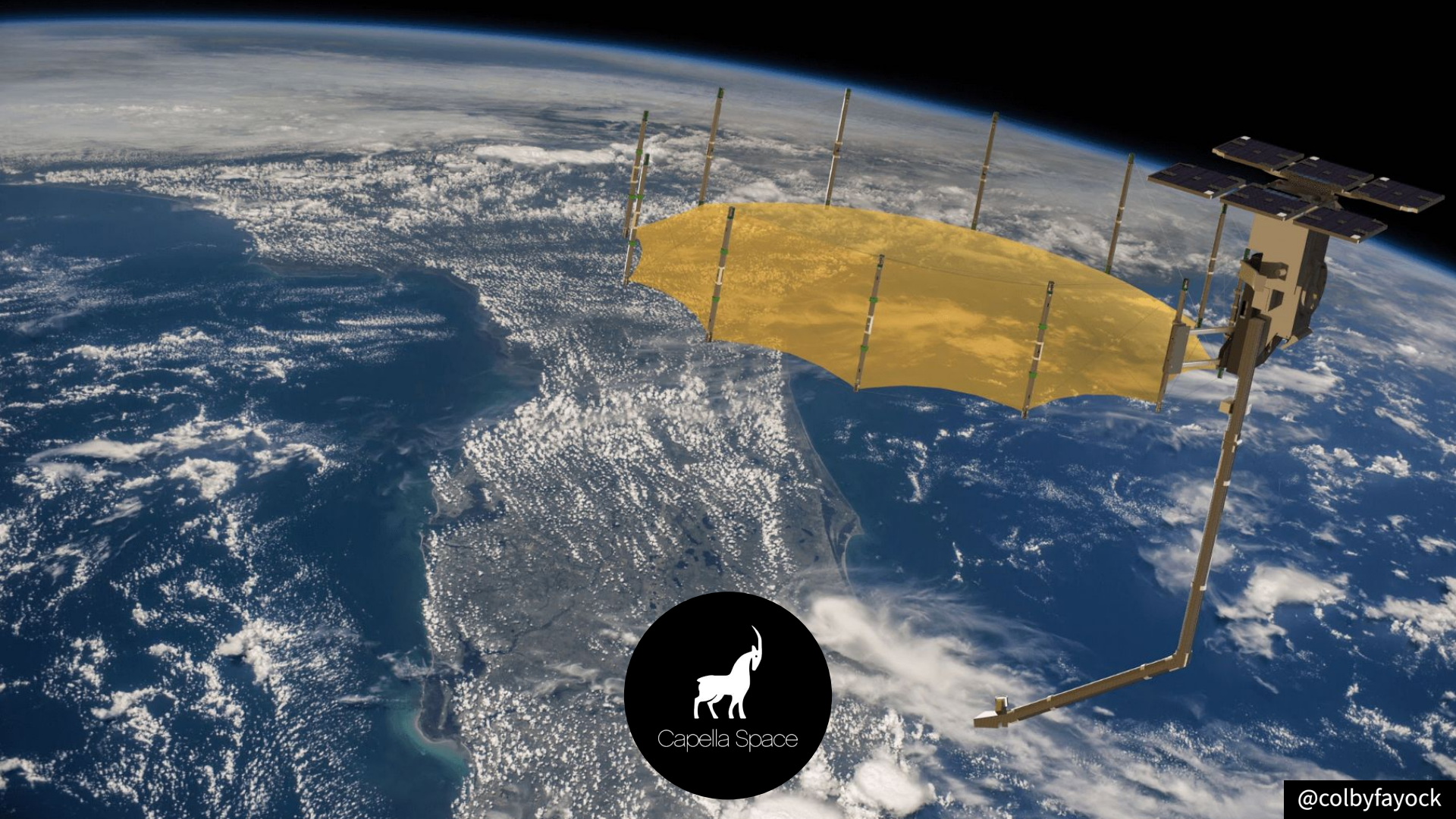
Gats B's

Your local family favorite restaurant!

📍 [VIEW LOCATIONS](#)



**What are some
other examples?**



@colbyfayock



Search Capella



FILTERS



Collection

sf-bay-area-aerial

RESULTS (42)



sf-bay-area-aerial

Start: 09/28/2019 3:40 am
Type: SLC
Mode: stripmap
Polarization: VV
Incidence: 44.30°



sf-bay-area-aerial

Start: 09/28/2019 3:40 am
Type: SLC
Mode: sliding_spotlight
Polarization: VV
Incidence: 44.30°



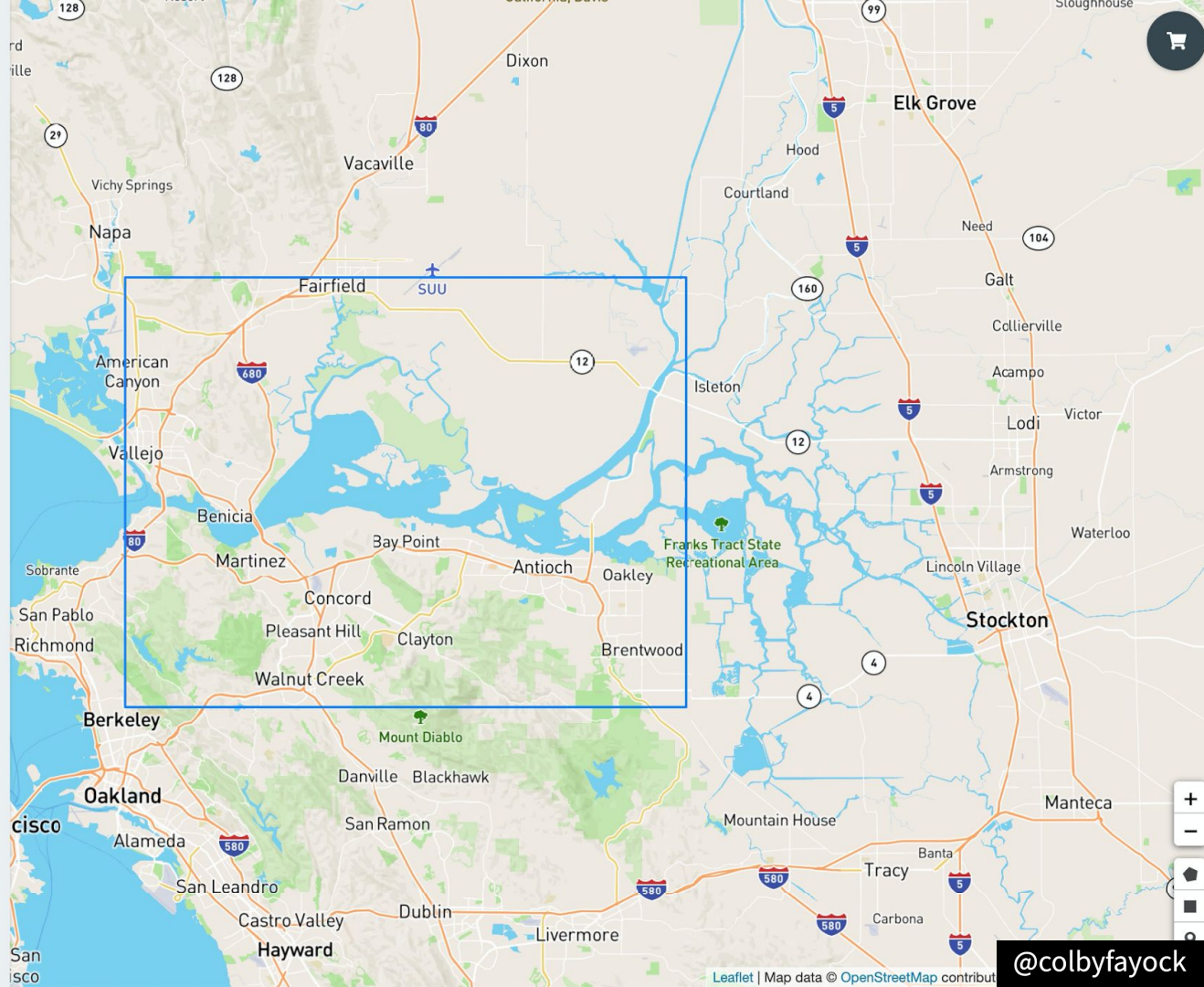
sf-bay-area-aerial

Start: 09/28/2019 3:40 am
Type: GEO
Mode: sliding_spotlight
Polarization: VV
Incidence: 44.60°



sf-bay-area-aerial

Start: 09/28/2019 3:40 am
Type: GEO
Mode: spotlight
Polarization: VV





Search Capella



[Back to Search](#)

CAPELLA_ARL_SP_GEO_VV...

sf-bay-area-aerial

09/28/19 3:03 am - 09/28/19 3:04 am

Dates in UTC

Properties

Constellation eros

Instruments capella-radar-arl-1

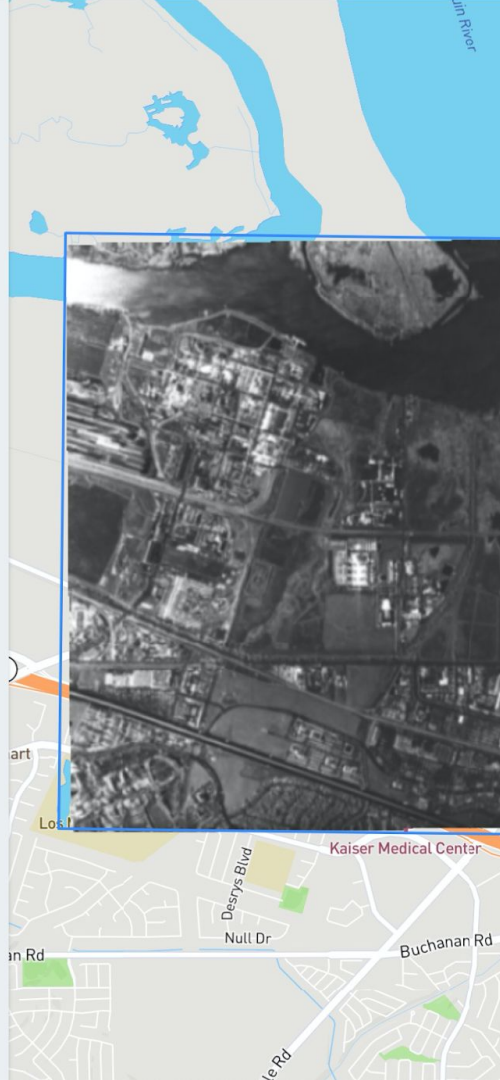
SAR Frequency Band X

SAR Observation Direction right

SAR Polarizations VV



ADD TO CART



Satellite Tasking

Imagery & metadata

Collected by satellites

@colbyfayock



Create New Task

Target Name

Walt Disney World



Target Description

The most magical place in the earth!

Window Open (UTC)

06/08/2020 12:00 AM



Window Close (UTC)

06/19/2020 12:00 AM



Collection Tier

7 Day



Collect Mode

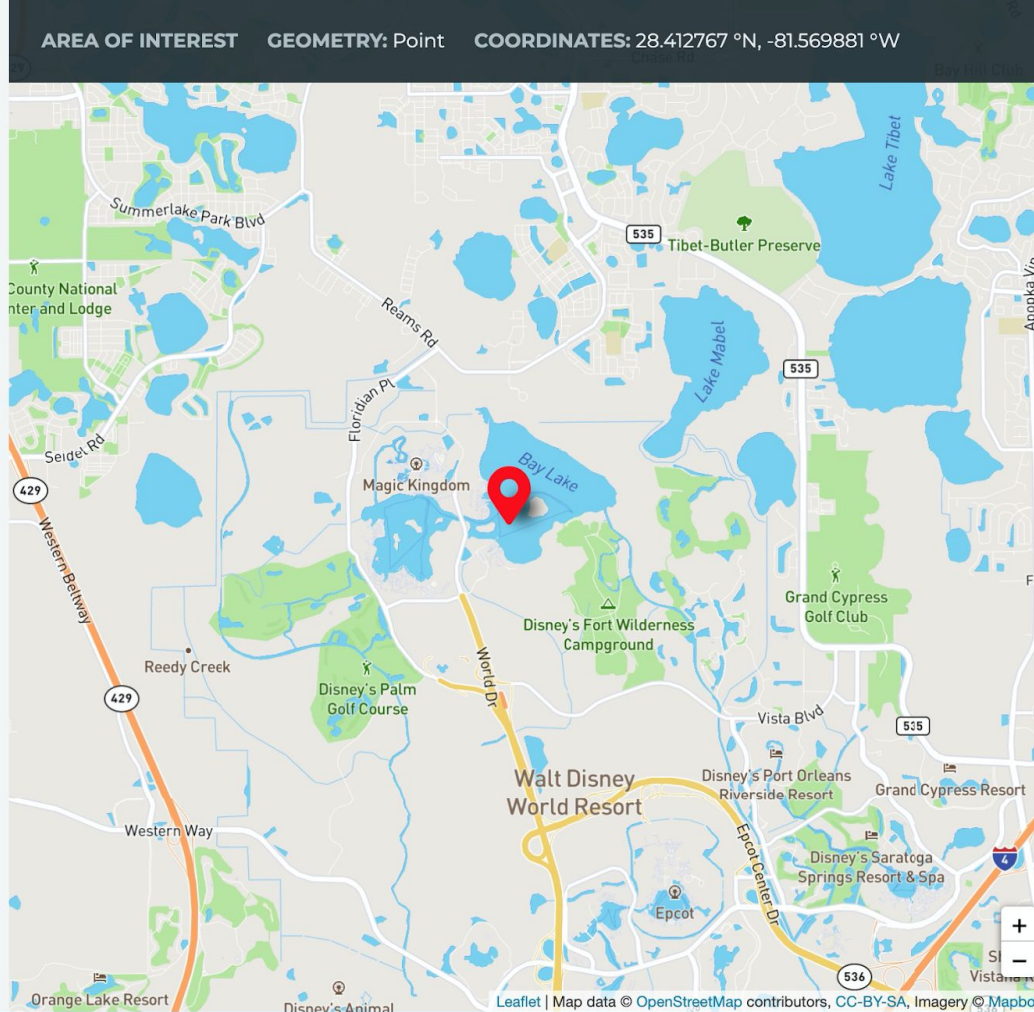
Spotlight



Dates and times are processed as UTC upon submission

CREATE TASK

[Cancel Task Request](#)





Gatsby

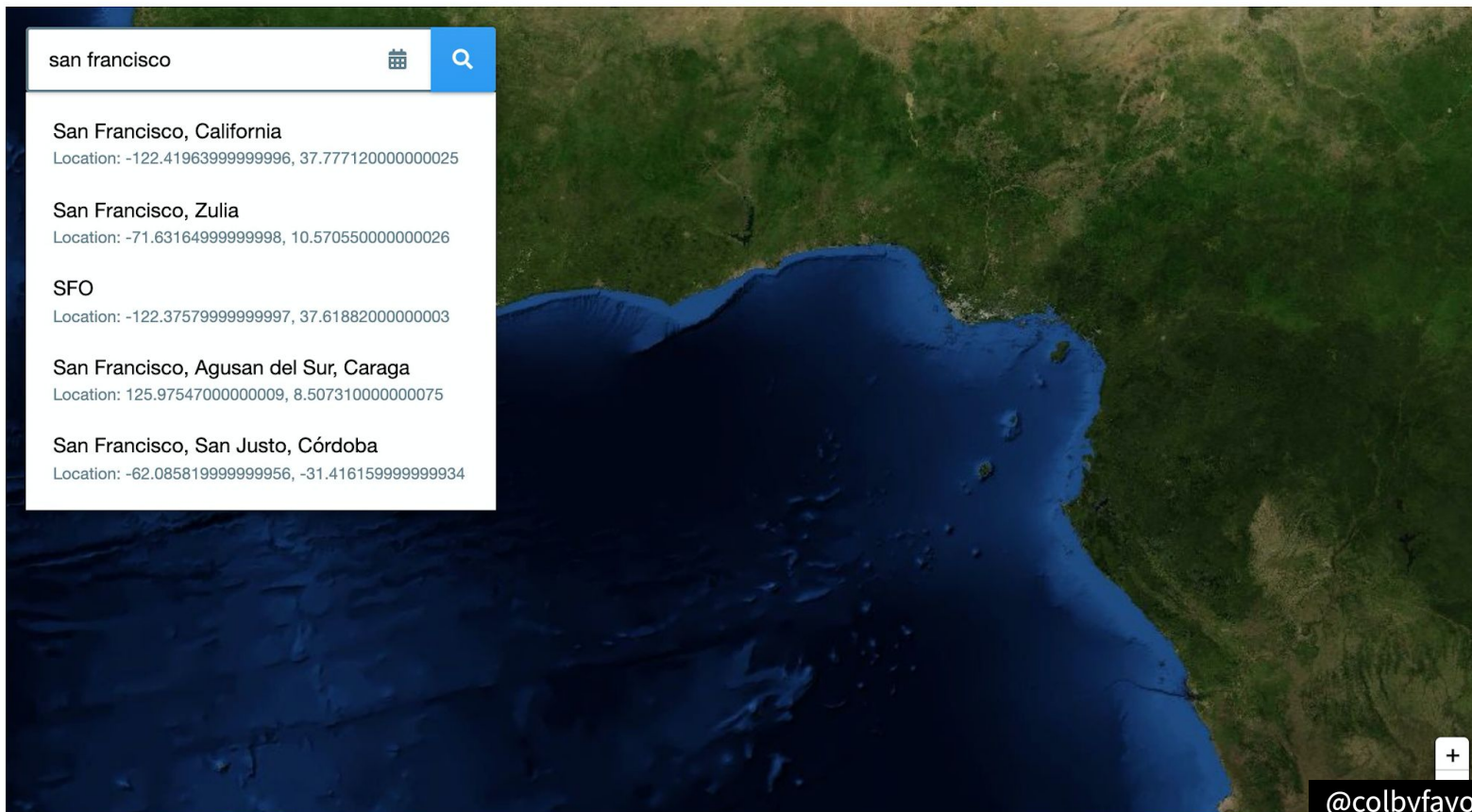


- conbyName
- Input
- Input Button
- Input Button List
- Input Range
- Item List
- Layer
- Layout
- Lens
 - Custom Basemap
 - Default**
 - Resolve Results
- Map
- Map Draw
- Map Marker
- Map Preview
- Modal
- Notice
- Panel
- Panel Actions
- Search Box
- Search Complete
- Search Date
- Search Panel Filters
- Table
- Table Actions
- Table Cell
- Table Cell Creator
- Table Header Cell
- Table Search Filters
- Table Search Input
- Wonder Link



Lens

Default

[Show Info](#)

Australian Bushfires

November 24, 2019

15:06:40
AEDT

Duration: 11d 13h

Overlay Layers

Coastlines

Updated:



NSW Rural Fire Service Recent Hotspots

Updated:



Digital Earth Hotspots

Updated:



Base Layers

MODIS Aqua

Updated:



MODIS Terra



 ADD DATAPOINT



Sync



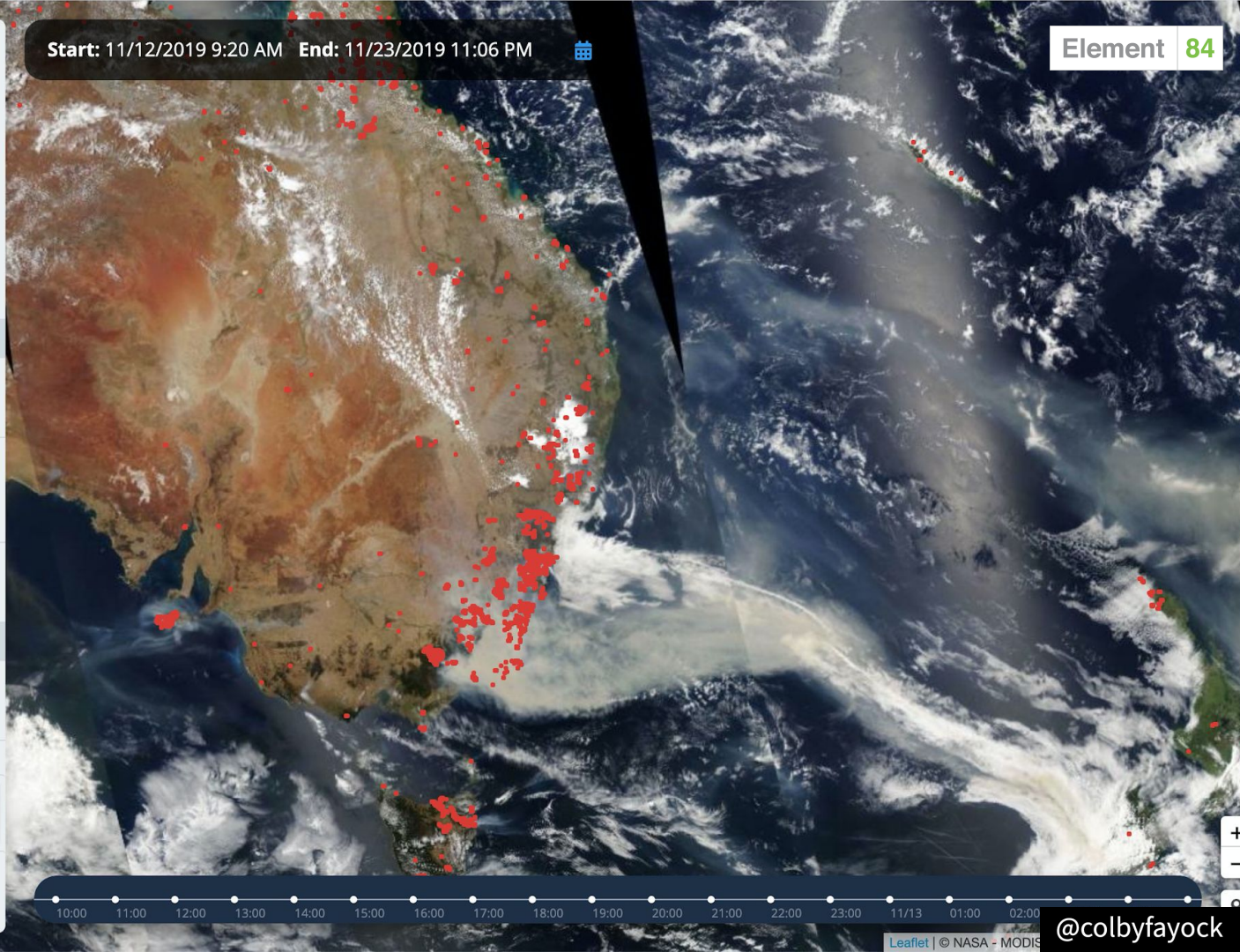
Settings

Last sync: 1 hour ago

Start: 11/12/2019 9:20 AM End: 11/23/2019 11:06 PM



Element 84



10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 11/13 01:00 02:00

Leaflet | © NASA - MODIS

@colbyfayock



fogg.element84.com

github.com/Element84/fogg



pizza

20004

Use My Location

Showing 3 results...



HomeSlyce DC

Late Night Snacks, Happy Hour, Pizza



CALL

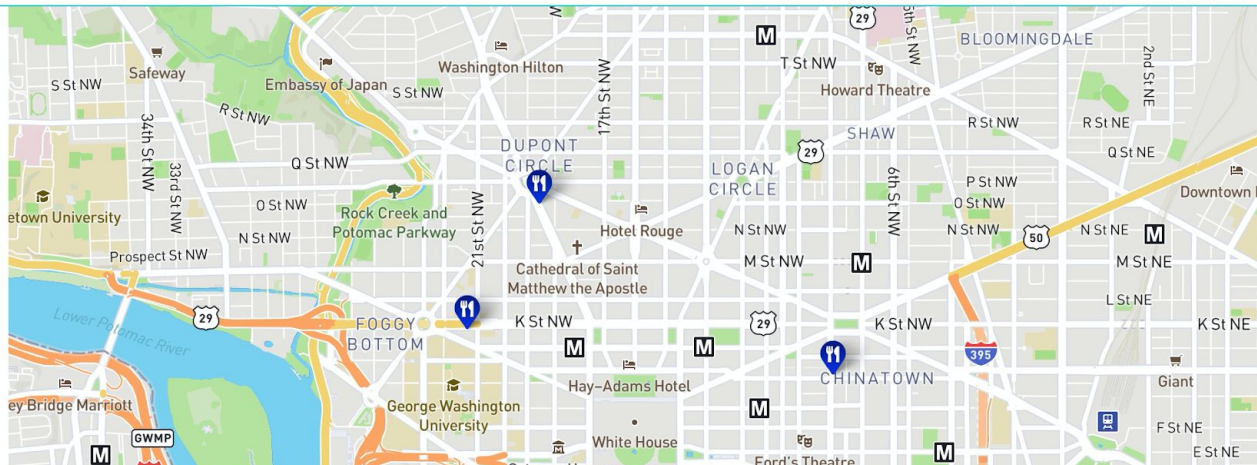


MAP



MENU

ORDER NOW



egghead.io/instructors/colby-fayock

@colbyfayock

Thank You!

Colby Fayock

Lead UX & Front End Engineer

Element

84

@colbyfayock

