

vis.gl

SIGGRAPH 2018 Update

Our Frameworks

A suite of open-source
visualization frameworks



KEPLER.GL



LUMA.GL

REACT-MAP-GL

React components for Mapbox GL JS

GET STARTED

DECK.GL

Large-scale WebGL-powered Data Visualization

GET STARTED

NEBULA.GL

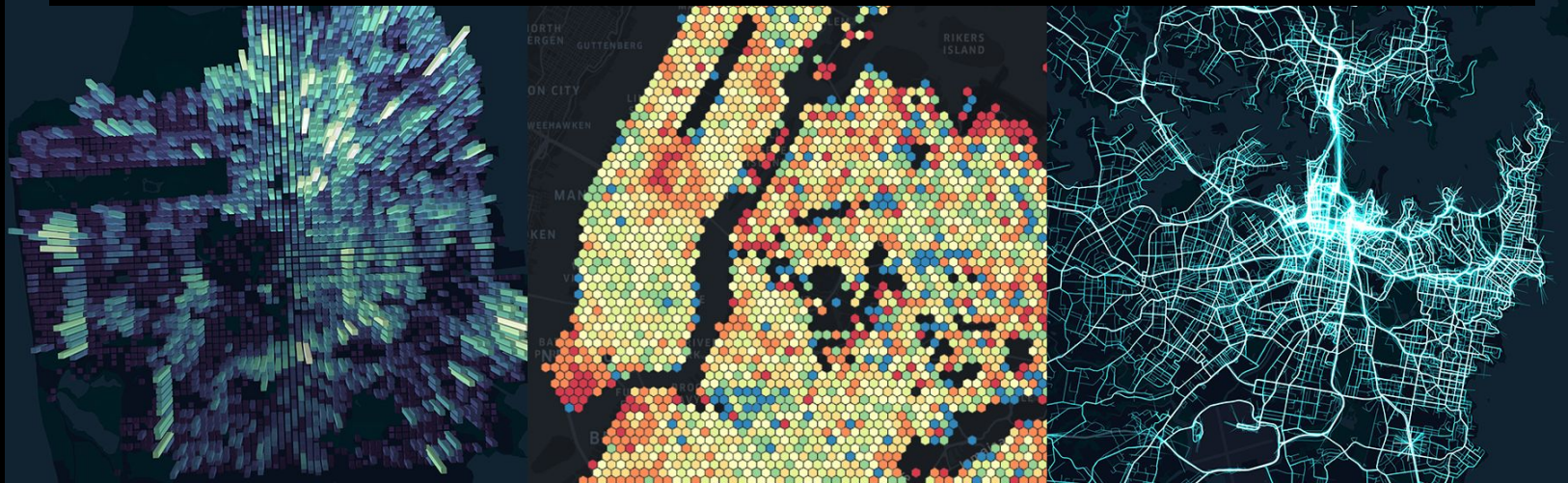
An editing framework for deck.gl

VIEW DOCS

START EDITING



Beyond Frameworks



Layers

sf_contour.geo.json >
13,598 rows

+ Add Data

sf_contour.geo
Polygon

Basic

Layer Type

Polygon

Columns

* Required

Geojson* geo .geojson

Color

Color Based On ⓘ

int elevation ×

Color Scale

quantile

Opacity

0.8

Stroke

Stroke Width

0.5

Stroke Based On ⓘ

Select a field

Stroke Width Range

0

10

High Precision Rendering

Layer Legend

sf_contour.geo

Polygon color

by elevation

~40.00 to 25.00

25.00 to 80.00

80.00 to 140.00

140.00 to 195.00

kepler.gl An Open Source Geospatial Data Exploration Tool

Layers

jakarta_elevation_x100.csv >
1,048,575 rows

+ Add Data

Point
Point

Basic

Layer Type

Point

Columns

* Required

Lat* float lat

Lng* float lng

Altitude Select a field

Color

Color Based On ⓘ

int ct ✕

Color Scale

quantile

Opacity 0.8

Radius 13

Radius Based On ⓘ

Select a field

Draw Outline ☒

High Precision Rendering ☒

+ Add Layer

A stack of deck.gl layers
A Mapbox GL base map

Kepler.GL
v1.0

la_1101_one_day.csv >
243,165 rows

+ Add Data

trip arc
Arc

begintrip
Point

dropoff
Point

Basic

Layer Type

point

Columns * Required

Lat

float

 dropoff_lat

Long

float

 dropoff_lng

Altitude

Select a field

Color

Color Based On ⓘ

Select a field

Opacity 0.8

Radius

2

Radius Based On ⓘ

Select a field

Draw Outline

High Precision Rendering

new layer
Hexagon

Layer Configurator

Data Filters

React User Interface



Kepler.GI
v1.0

Lat° begintrip_lat

Lng° begintrip_lng

Color

Color Scale

quantize

Color Based On ⓘ

Select a field

Aggregate By

average

Filter By Count Percentile

Opacity

Radius

Hexagon Radius (Km)

Coverage

Enable Height

Elevation Scale

Height Based On ⓘ

Select a field

Aggregate By

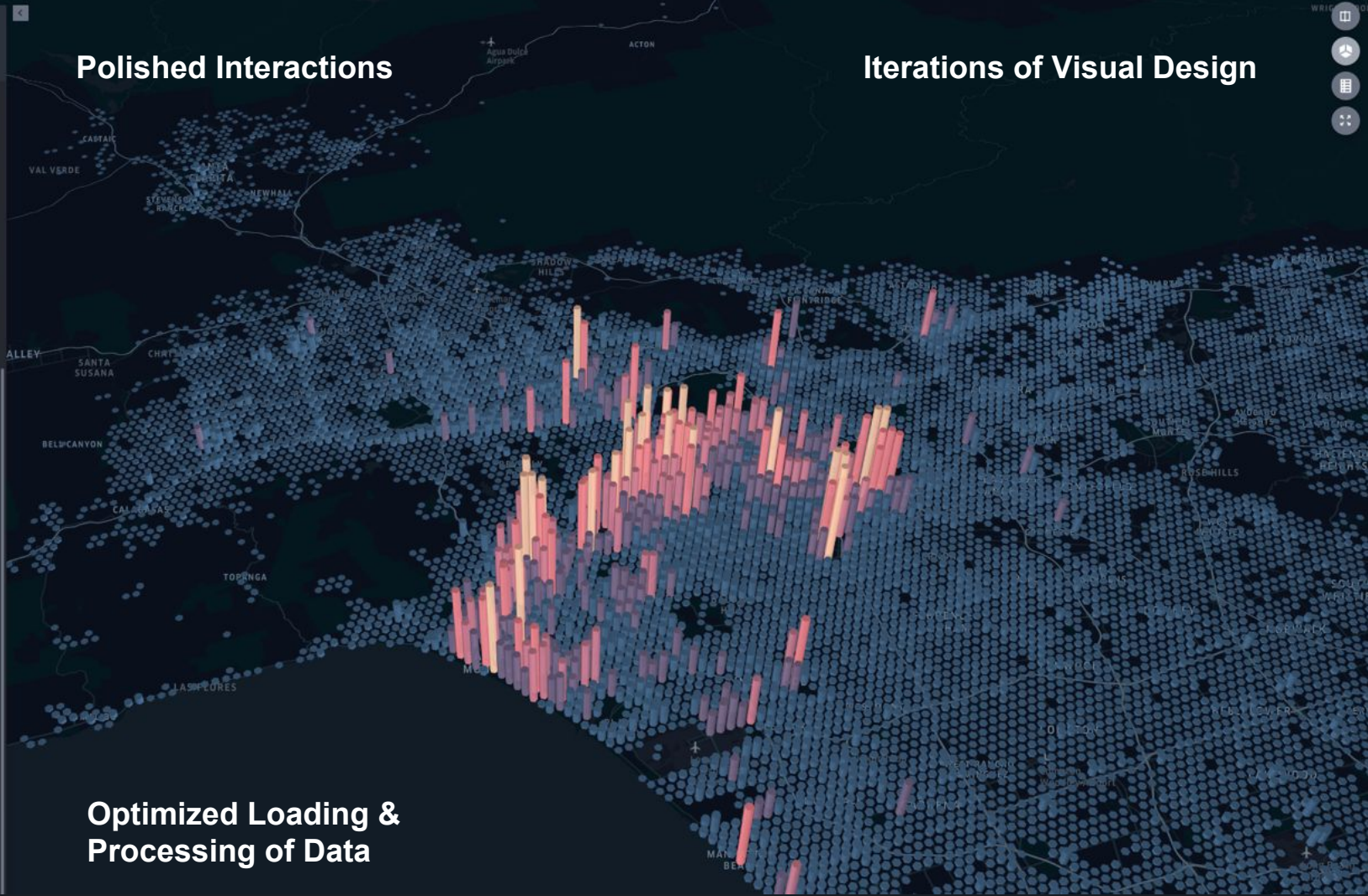
average

Filter By Count Percentile

High Precision Rendering ☐

Polished Interactions

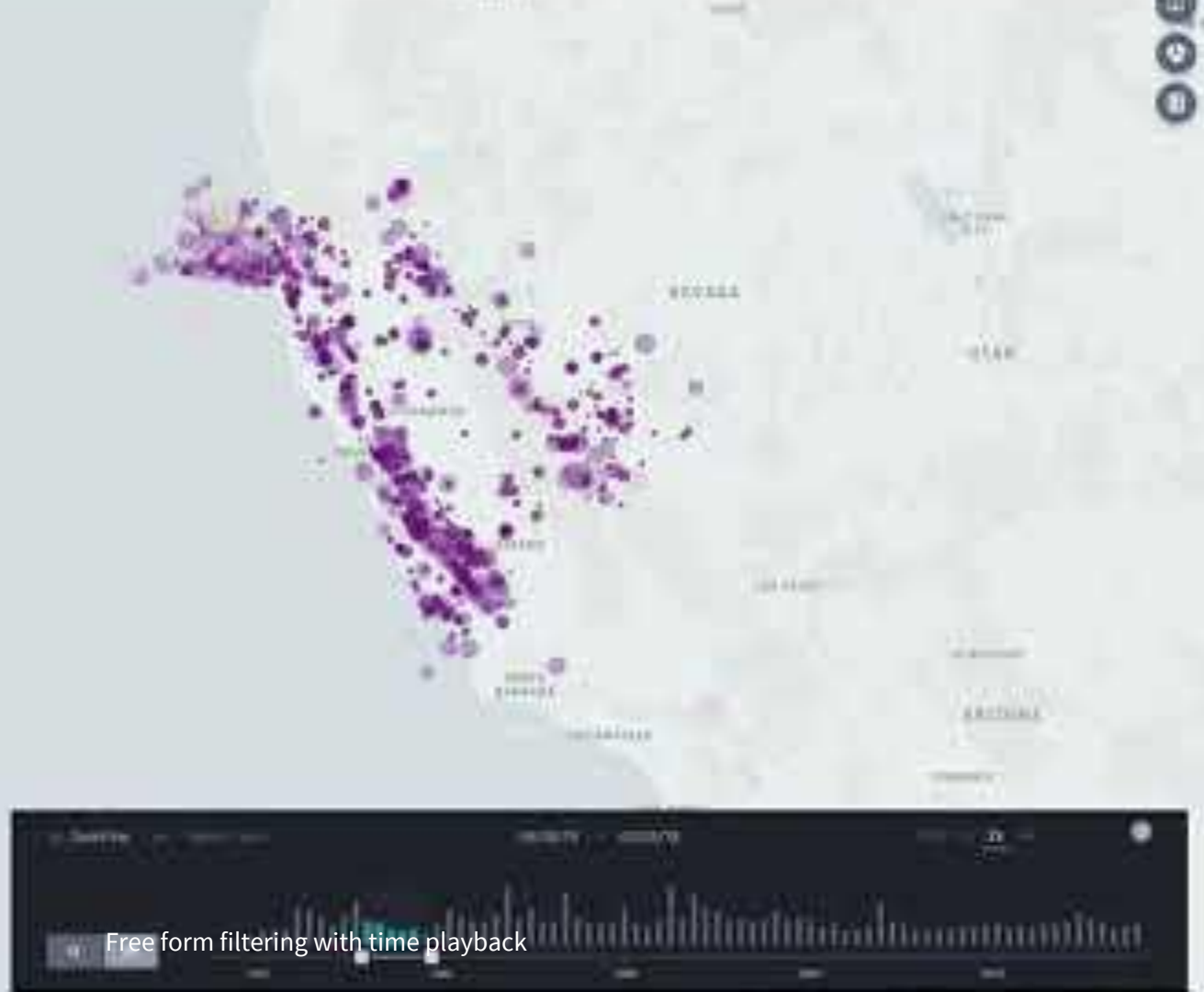
Iterations of Visual Design

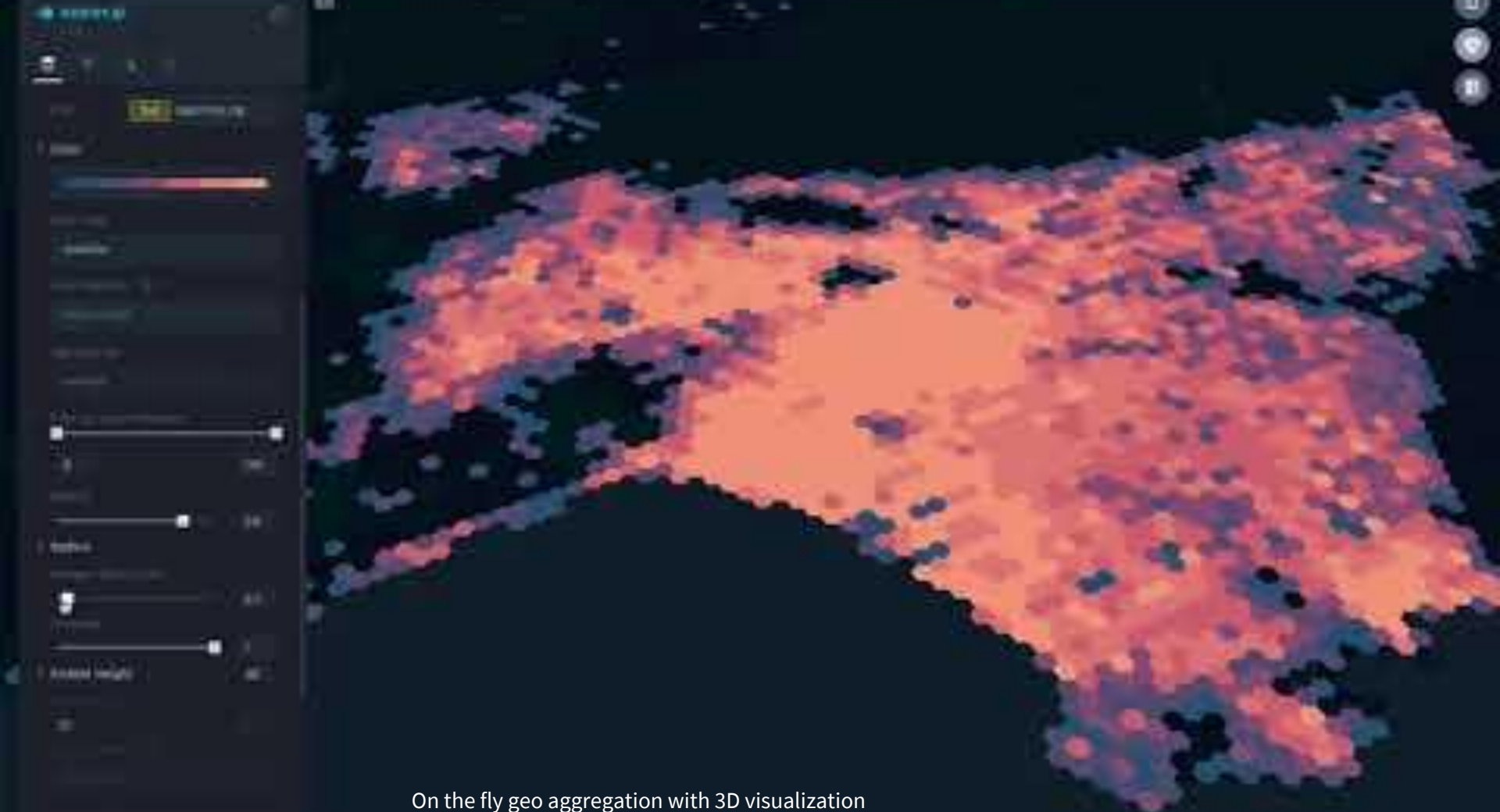


Optimized Loading & Processing of Data



Add data to map by drag and drop files





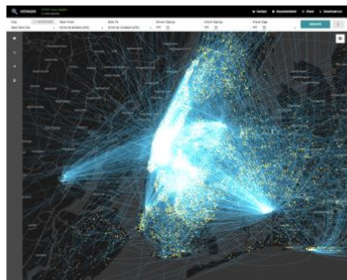
On the fly geo aggregation with 3D visualization



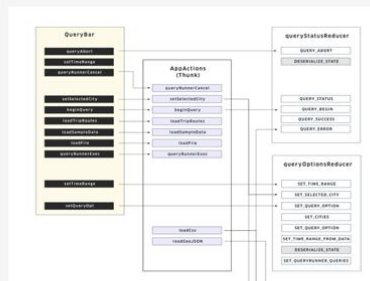
Explore origin-destination correlations with brushing

Kepler.gl - Road to Open Source

Successive waves of refinement over more than 2 years



1 Mostly “generic” internal application



2 Major Refactoring



3 UI Redesign

Deck.gl v1

Deck.gl v2

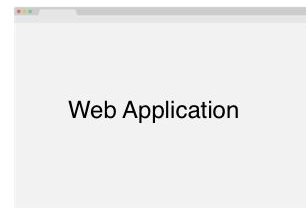
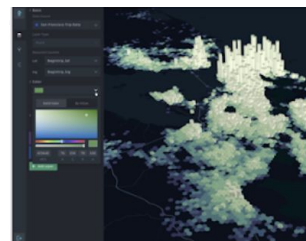
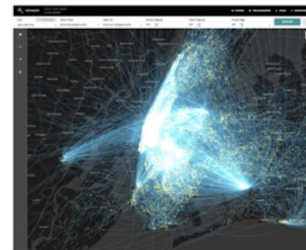
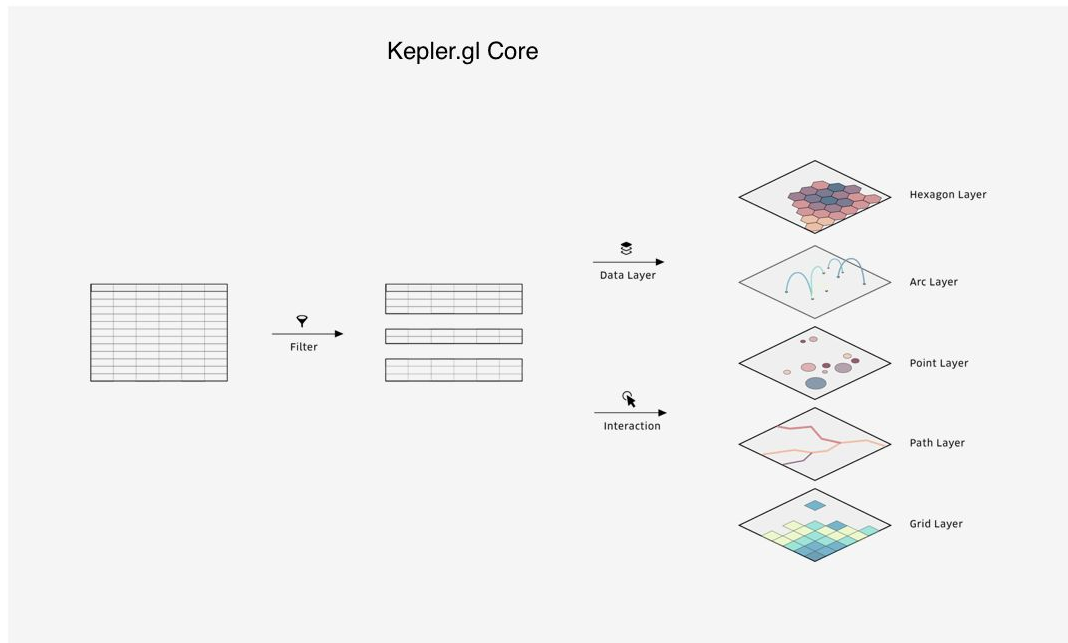
Deck.gl v3

Deck.gl v4

4 Deck.gl Upgrades

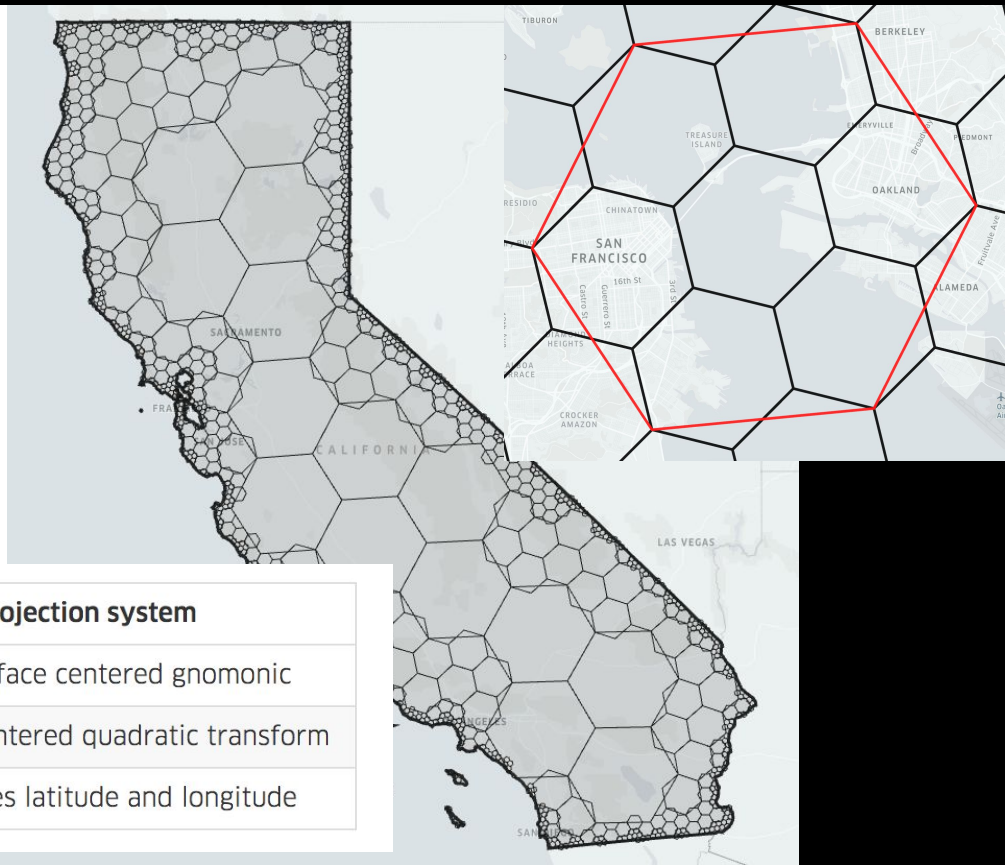
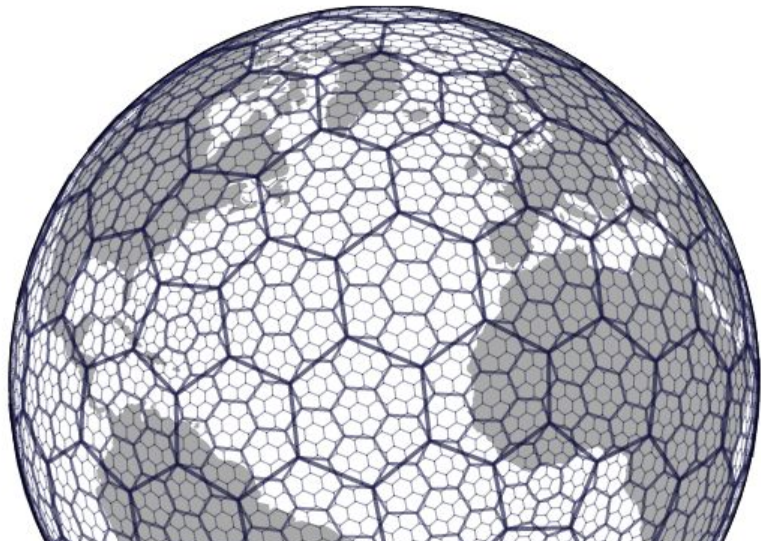
Import Kepler.gl Into other Apps

Packing Kepler.gl



vis.gl: New Frameworks

H3 - Hexagonal Geospatial Indexing System



System	Index representation	Cell shape	Projection system
H3	64 bit integer	hexagon	Icosahedron face centered gnomonic
S2	64 bit integer	rectangle	Cube face centered quadratic transform
Geohash	alphanumeric string	rectangle	None, encodes latitude and longitude

NEBULA.GL

An editing framework for deck.gl

VIEW DOCS

START EDITING

SELECT

MODIFY

NEW

DELETE

COLOR

CLEAR

LOAD

SAVE

51 features
2259 points

☐ Extrude

☒ Tilt

From Viewing to Editing

```
import { GeoJsonLayer } from 'deck.gl';
```

```
const layer = new GeoJsonLayer({  
  id: 'geojson-layer',  
  data  
});
```

```
import { EditableGeoJsonLayer } from 'nebula.gl';
```

```
const layer = new EditableGeoJsonLayer({  
  id: 'geojson-layer',  
  data,  
  mode: this.state.mode,  
  onEdit: ({ updatedData, updatedMode }) => {  
    this.setState({  
      data: updatedData,  
      mode: updatedMode  
    });  
  }  
});
```


Future Directions

UBER Elevate

Summit 2018

LAX

7:00 am

Eric Allison
Head of Aviation
Uber

Eric Allison
Head of Aviation Pro
Uber



Stay tuned...

← →

AUTONOMOUS

Angle

0.11°

Speed

35.0 MPH

15.7 M/S

SOCR LIMIT

→ MPH

00:00 00:01 00:02 00:03 00:04 00:05 00:06 00:07 00:08 00:09 00:10 00:11 00:12 00:13 00:14