HISTORY AND FUTURE

GEONODE

ARIEL NÚÑEZ

@INGENIEROARIEL - TERRANODO LLC

- Born and live in Barranquilla, Colombia's caribbean coast.
- Husband: @cristinao
- Father of 3 daughters: Elena, Amelie and Maura.
- Electronic Engineer doing a Masters on Computer Vision
- Worked for the World Bank on Open Source and Open Data for 6 years.
- Cofounder of Terranodo LLC with Jeff Johnson (@ortelius) and Angelos Tzotsos (@kalxas)

OUR HISTORY


GABRIEL GARCÍA MÁRQUEZ
1927 - 2014

REALISMO MÁGICO

2009

“

HOW CAN WE GUARANTEE THERE IS DATA BEHIND METADATA?

— Chris Holmes and Stuart Gill (then OpenGeo and World Bank)

”

A STATIC JAVASCRIPT CLIENT HITTING A VANILLA GEOSERVER

2010

“

IT SHOULD BE EASY TO INSTALL GEONODE AND UPLOAD DATA

— David Winslow (then OpenGeo)

”

AN STATIC CLIENT WITH A DJANGO APP CONNECTED TO A GEOSERVER AND GEONETWORK WITH **PROGRAMMATIC UPLOADS AND A DEBIAN INSTALLER**

2011

“

WE SHOULD ALWAYS BE ABLE TO DOWNLOAD DATA

— Ariel Núñez (then World Bank)

”

AN STATIC CLIENT CONNECTED TO A DJANGO APP CONNECTED TO GEOSERVER AND GEONETWORK WITH AN **INTEGRATION TEST SUITE** AND DEBIAN

2012

“

GEONODE NEEDS GREAT MANUALS

— Jeff Johnson (then OpenGeo)

”

AN STATIC CLIENT CONNECTED TO A DJANGO APP CONNECTED TO GEOSERVER AND GEONETWORK WITH AN INTEGRATION TEST SUITE, DEBIAN INSTALLERS AND **ONLINE DOCS + WEBSITE**

2013

“

GEONODE SHOULD BE MORE SOCIAL AND ALLOW BEAUTIFUL PDF UPLOAD

— Simone Dalmasso (then ITHACA and WFP)

”

AN STATIC CLIENT CONNECTED DJANGO APP WITH SUPPORT FOR **USERS, ADVANCED PERMISSIONS, GROUPS, DOCUMENT UPLOAD** CONNECTED TO GEOSERVER AND GEONETWORK

2014

“

METADATA SHOULD HAVE A SINGLE SOURCE OF TRUTH

— Tom Kralidis, Meteorological Service of Canada

”

AN STATIC CLIENT CONNECTED TO A DJANGO APP WITH A **CSW INTERFACE** BACKED BY A CUSTOM GEOSERVER

2015

“

GEONODE SHOULD BE BEAUTIFUL AND USABLE

— Paolo Pasquali, ITHACA

”

AN STATIC CLIENT CONNECTED TO A **BEAUTIFUL** DJANGO SITE BACKED BY A CUSTOM GEOSERVER

2016

“

GEONODE SHOULD INTEGRATE BETTER WITH GEOSERVER

— Alessio Fabiani, GeoSolutions

”

A STATIC CLIENT CONNECTED TO A CSW ENABLED DJANGO APP BACKED BY A VANILLA GEOSERVER WITH PLUGGABLE EXTENSIONS

2017

“

A PRODUCTION GRADE GEONODE SHOULD BE ONLY ONE CLICK AWAY

— Francesco Bartoli, GeoBeyond

”

AN STATIC CLIENT CONNECTED TO A DJANGO APP BACKED BY GEOSERVER ALL **RUNNING IN DOCKER**

2018

“

GEONODE SHOULD HAVE A ROBUST API

— Patrick Dufour (former US Dept of State, WFP)

”

GEONODE 3.0

API FIRST

A.K.A. SWAGGER

OPENAPI 3.0

2019

“

I HAVE AN IDEA

— Person sitting in this room

”

MULTIPLE STATIC CLIENTS ON **EXTJS, OPENLAYERS, LEAFLET, ANGULARJS, REACT, VUE, D3, MAPBOXGL** CONNECTED TO A DJANGO APP BACKED BY **GEOSERVER, QGIS, MAPSERVER, ARCGIS.**

EVERYTHING IS DIFFERENT

EVERYTHING IS COMPATIBLE

OGC CSW
OGC WFS
OGC WMS
OGC WCS

EVERYTHING IS A GEONODE

THE FRAMEWORK

WHAT IS GEONODE?

GEONODE IS A FRAMEWORK TO BUILD WEBSITES THAT SHARE GEOSPATIAL DATA

THE SITE

WHAT IS A GEONODE?

A GEONODE IS A DATA REPOSITORY THAT PROVIDES AN AUTOMATIC STANDARDS COMPLIANT API FOR YOUR DATA

WILL MY GEONODE BE ABLE TO PULL DATA FROM YOUR GEONODE?

YES

HOW DO WE DO IT?

END

VIVIEN ASKED
FOR A SHORT
PRESENTATION

HOW DO WE DO IT?

WE NEED TO AGREE ON A DEFINITION OF 'CORE' GEONODE AND MAKE EVERYTHING ELSE OPTIONAL.

SHOULD WE BE ABLE TO HAVE GEONODE THAT IS NOT IN PYTHON?

IF THE API IS SIMPLE ENOUGH, WHY NOT?

SHOULD WE BE ABLE TO HAVE A FULLY STATIC GEONODE THAT CAN BE DEPLOYED ON AMAZON S3?

NO, THAT WOULD BE TOO HARD. WINK. WINK.

THIS TIME FOR REAL

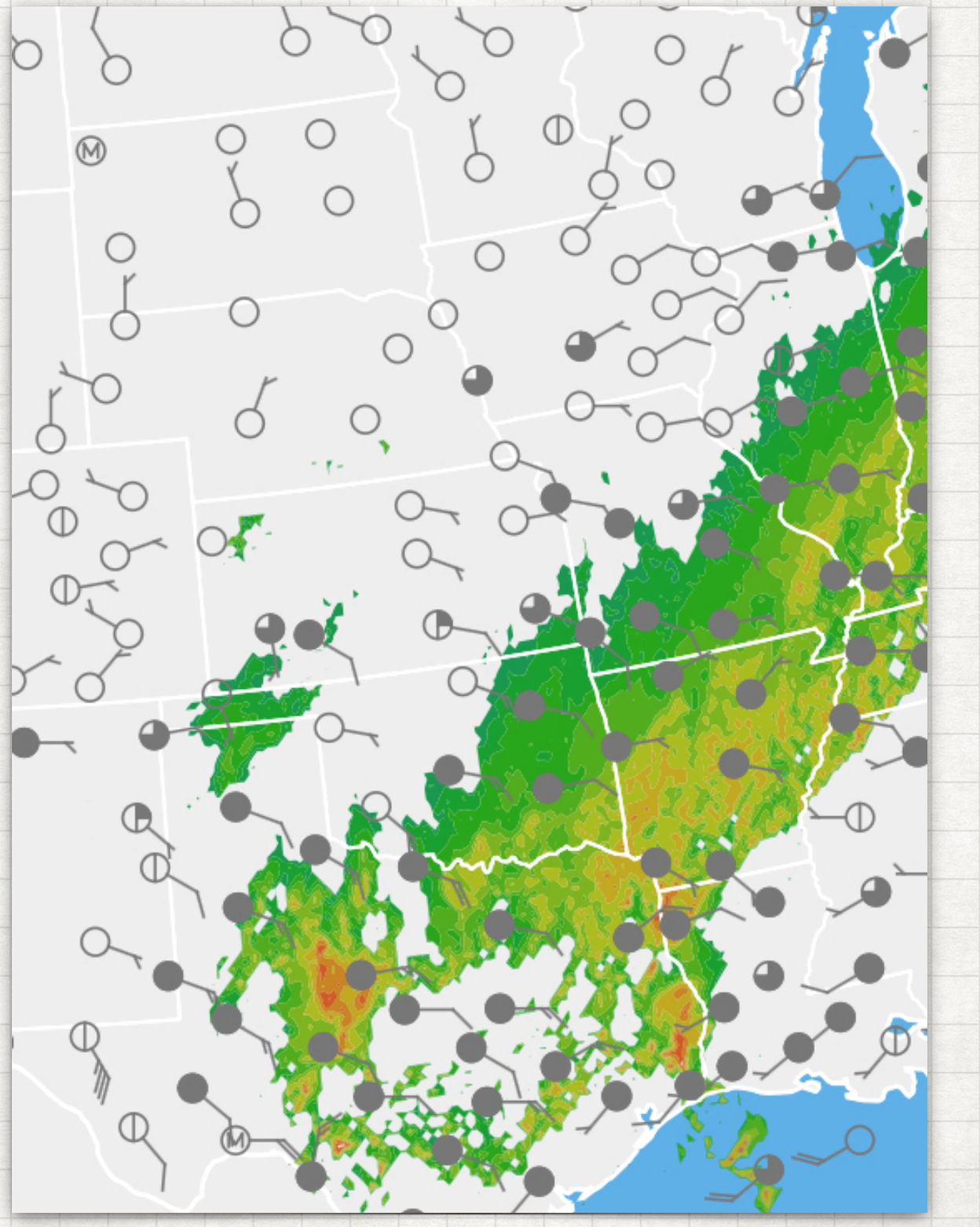
END

MY DREAM GEONODE

EASY TO CREATE A CUSTOM MAP FOR A DATASET

FOR EXAMPLE,
SOMETHING LIKE THIS:

SVG CUSTOM DRAWING



POSSIBLE TO INSTALL A GEONODE FOR FREE ON AN HTTPS ENABLED DOMAIN IN SECONDS

THEN COME BACK A YEAR LATER AND SEE IT CONTINUE TO WORK

POSSIBILITY TO CREATE MAPS FROM A MOBILE DEVICE

SMALL CORE WITH CATALOG, VECTOR AND RASTER DATA ACCESS

POSIBILITY TO ADD LINKS TO WIKIDATA ITEMS AT THE FEATURE LEVEL AND AT THE METADATA LEVEL

EMERGING STANDARDS

VECTOR

WFS 3.0

WFS3 Core Conformance Checklist

Derived from the WFS3 spec as of 2018-03-15.

- (recommended) checkboxes aren't strictly necessary for conformance
- (optional) checkboxes have value but may be ignored without problem

7.2 API landing page

- [ ] GET request at **/** served
- [ ] Response content is based on root.yaml and minimally includes links to:
  - [ ] **/api**
  - [ ] **/conformance**
  - [ ] **/collections**

7.3 API Definition

- [ ] GET request at **/api** served
- [ ] Response content is the api definition document
- [ ] (recommended) Response content is OpenAPI format
- If multiple formats are provided, use content negotiation

7.4 Declaration of conformance classes

- [ ] GET request at **/conformance** served
- [ ] Resonse content is based on OpenAPI schema req-classes.yaml.
  - [ ] conformsTo in response contains
    - [ ] http://www.opengis.net/spec/wfs-1/3.0/req/core
    - [ ] (recommended) http://www.opengis.net/spec/wfs-1/3.0/req/html
    - [ ] (recommended) http://www.opengis.net/spec/wfs-1/3.0/req/geojson

7.5 HTTP 1.1

- [ ] Conforms to HTTP 1.1, including correct use of status codes, headers, etc.
- [ ] (recommended) Supports entity tags

7.7 Support for cross-origin requests

- [ ] (recommended) If the server will be accessed from the browser, allow cross-origin requests.

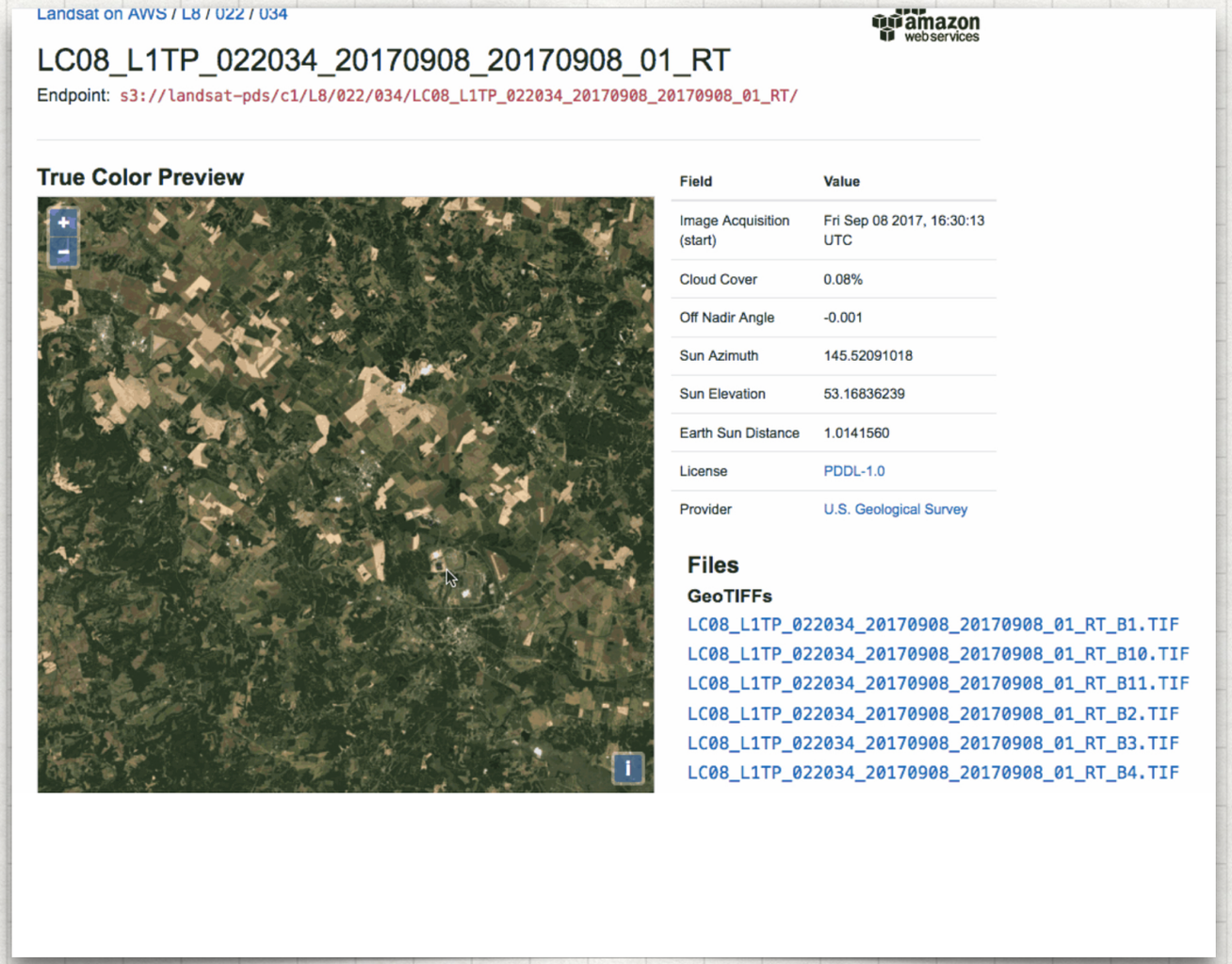
RASTER

COGEO

CATALOG

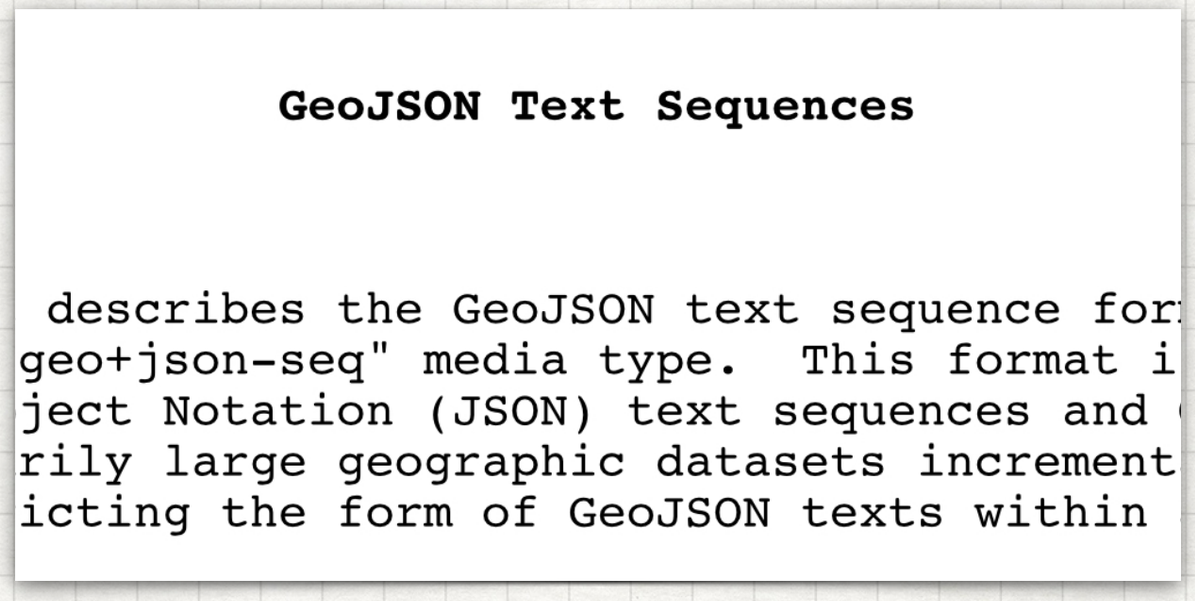
STAC

SPATIO
TEMPORAL
ASSET
CATALOG



IETF RFC 8142

GEOJSON



GeoJSON Text Sequences

describes the GeoJSON text sequence for
geo+json-seq" media type. This format i
ject Notation (JSON) text sequences and
rily large geographic datasets increment
icting the form of GeoJSON texts within

ECMASCRIPT2016

ES7

EMERGING TECHNOLOGY

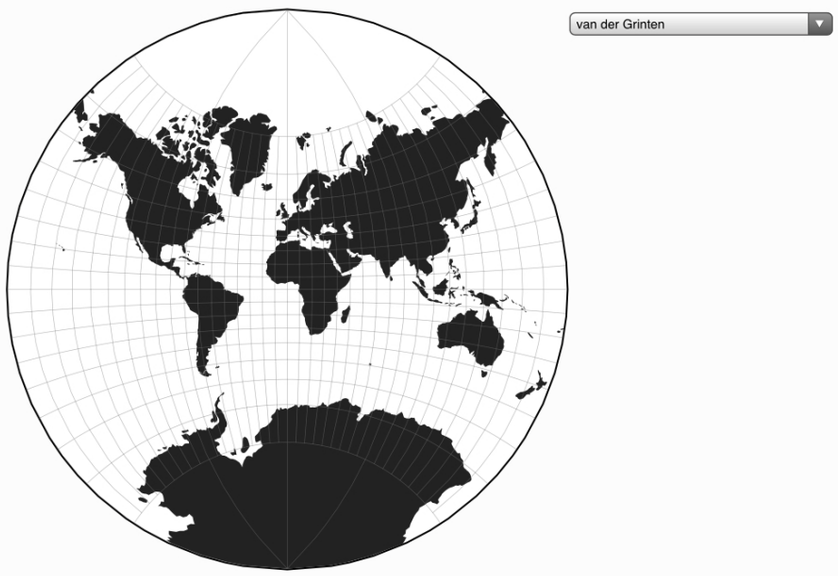
USERS HAVE
DECENT BROWSERS

EVER GREEN

FIRST CLASS GEO SUPPORT

D3

Projection Transitions



These projections are available in the geo.projection plugin.

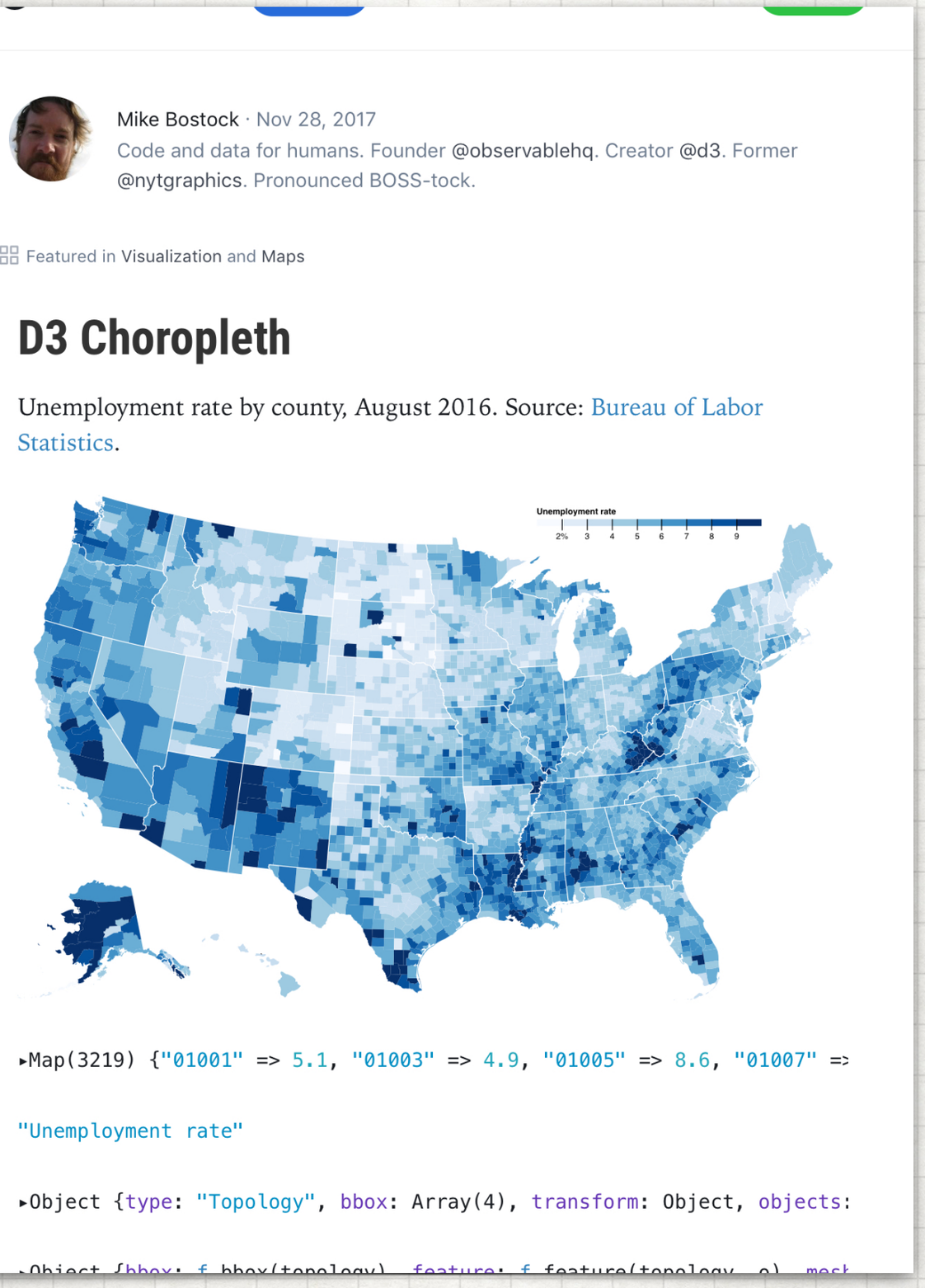
Open

index.html

```
<!DOCTYPE html>
<meta charset="utf-8">
<style>

body {
  background: #fcfcfa;
  height: 500px;
  position: relative;
  width: 960px;
}

#projection-menu {
  position: absolute;
  right: 10px;
  top: 10px;
}

.stroke {
  fill: none;
  stroke: #000;
  stroke-width: 3px;
}
```

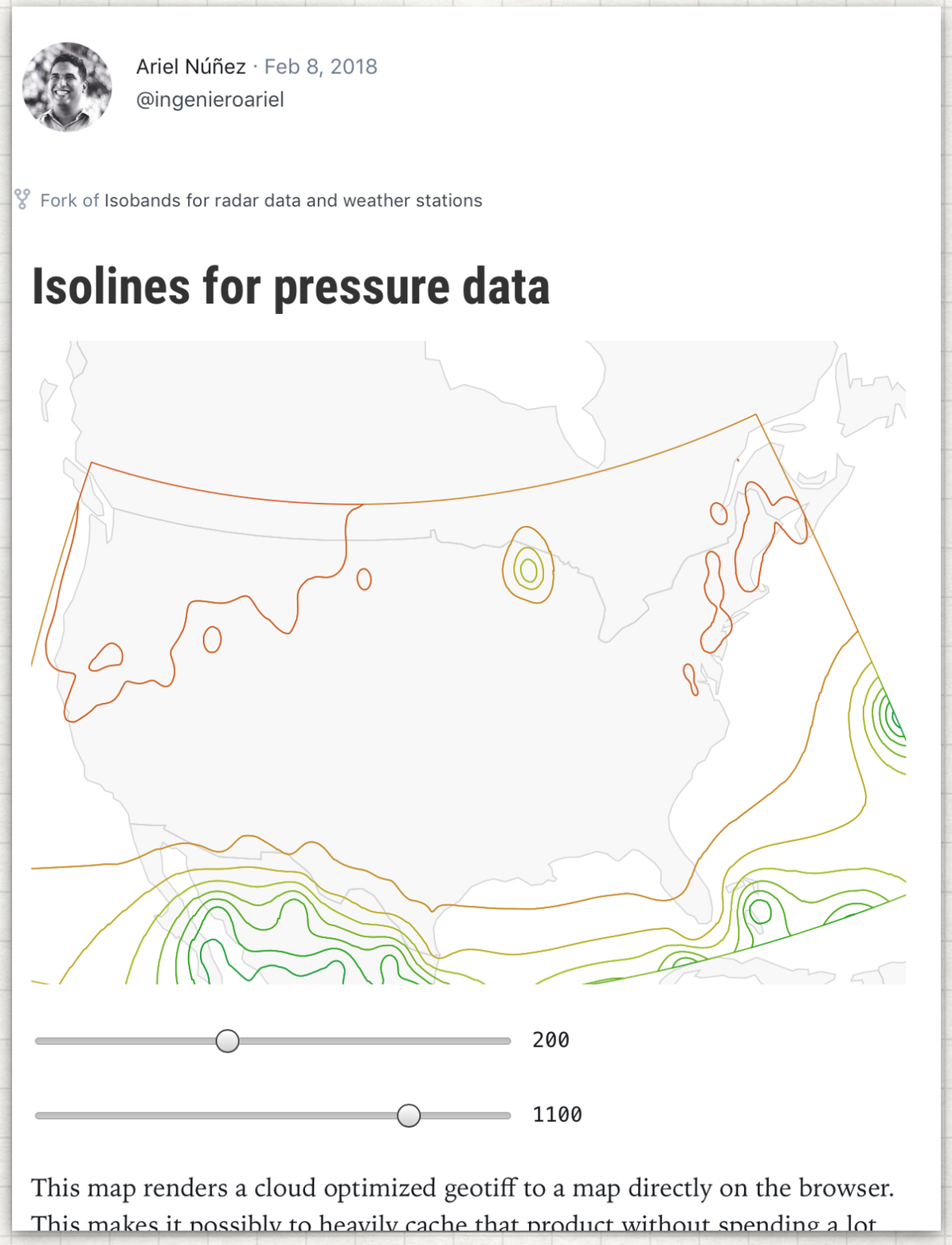
NO NEED FOR NPM FOR SIMPLE VIZ

D3-REQUIRE



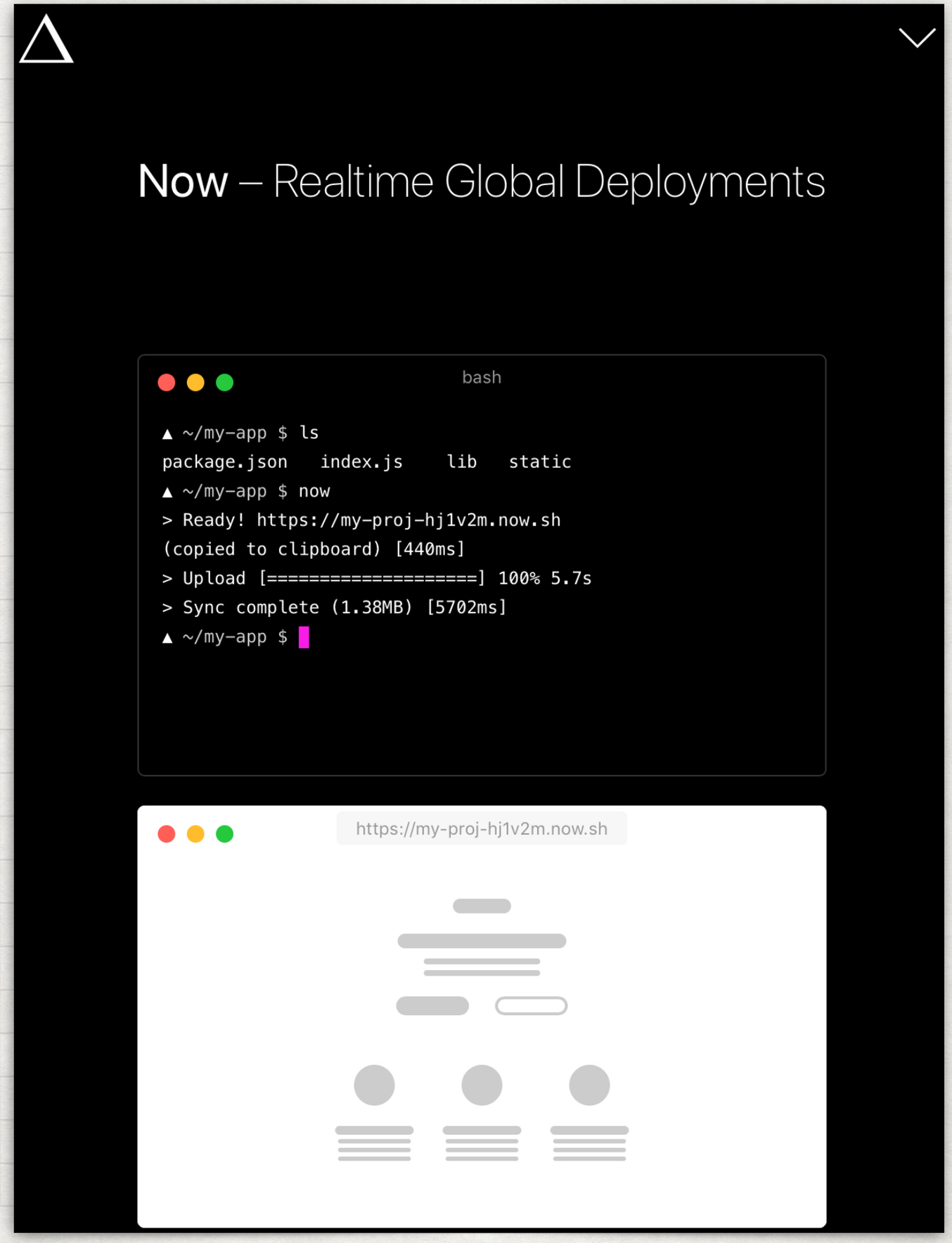
JAVASCRIPT CAN READ GEOTIFF

GEOTIFF.JS



ONE LINK FOR EVERY VERSION

IMMUTABLE DEPLOYMENTS



ASYNC READ ONLY SQLITE BASED AUTOMATIC API

DATASETTE

San Francisco

Data source: data.sfgov.org

food-trucks

1,226 rows in 5 tables, 1,376 rows in 5 hidden tables

Mobile_Food_Facility_Permit, block, Applicant, Status, FacilityType

registered-business-locations

239,373 rows in 11 tables, 455,300 rows in 5 hidden tables

Registered_Business_Locations_-_San_Francisco, Mail Zipcode, Sou
Mail City, ...

sf-film-locations

3,368 rows in 8 tables, 3,307 rows in 5 hidden tables

Film_Locations_in_San_Francisco, Actors, Title, Writer, Director, ...

sf-trees

189,785 rows in 7 tables, 379,864 rows in 5 hidden tables

Street_Tree_List, qSpecies, qSiteInfo, qCaretaker, qCareAssistant, ...

ASYNCHRONOUS I/O

SANIC

Hello World Example

```
from sanic import Sanic
from sanic.response import json

app = Sanic()

@app.route('/')
async def test(request):
    return json({'hello': 'world'})

if __name__ == '__main__':
    app.run(host='0.0.0.0', port=8000)
```

Installation

- `pip install sanic`