

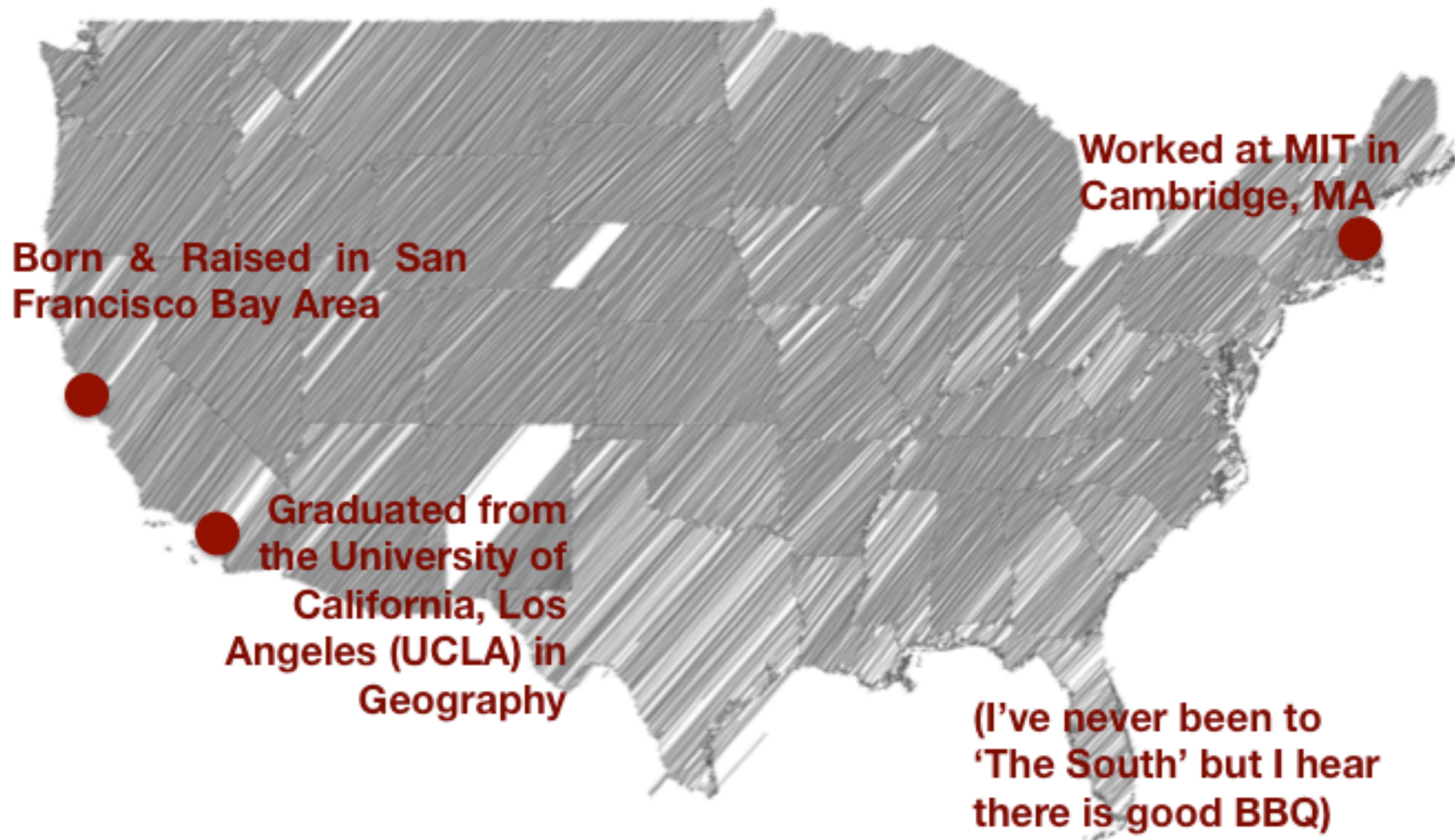
Reading and Writing Landscapes with Maps

UBC GIS Day

November 20, 2013

“A map does not just chart, it unlocks and formulates meaning; it forms bridges between here and there, between disparate ideas that we did not know were previously connected.”

— Reif Larsen, *The Selected Works of T.S. Spivet*





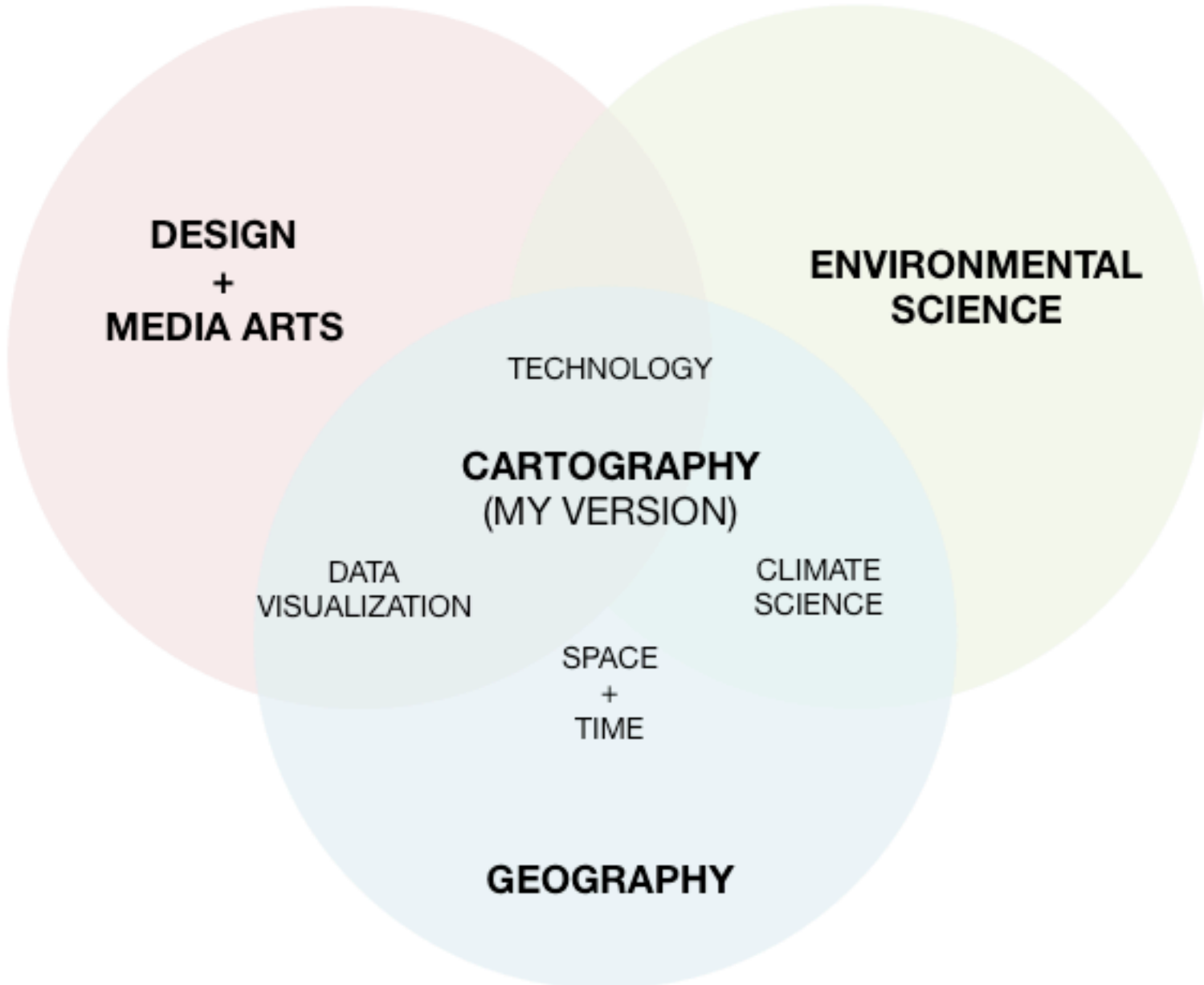
I'm a MSc Student in Geography

One of my favorite countries is Japan

I spent ~year working in Singapore as a MIT researcher

For my undergrad thesis I worked in Puerto Rico

I also did fieldwork in the Brazilian Amazon



**DESIGN
+
MEDIA ARTS**

**ENVIRONMENTAL
SCIENCE**

**CARTOGRAPHY
(MY VERSION)**

DATA
VISUALIZATION

CLIMATE
SCIENCE

TECHNOLOGY

SPACE
+
TIME

GEOGRAPHY

Viz Pipeline



Ben Fry (2007), *Visualizing Data: Exploring and Explaining Data with the Processing Environment*. O'Reilly Media.

Adapted from presentation by Benedikt Groß

GIS isn't just the last 3 letters of a software...



esri



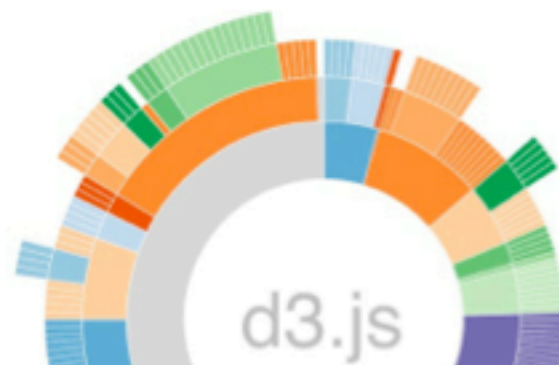
python



MapBox

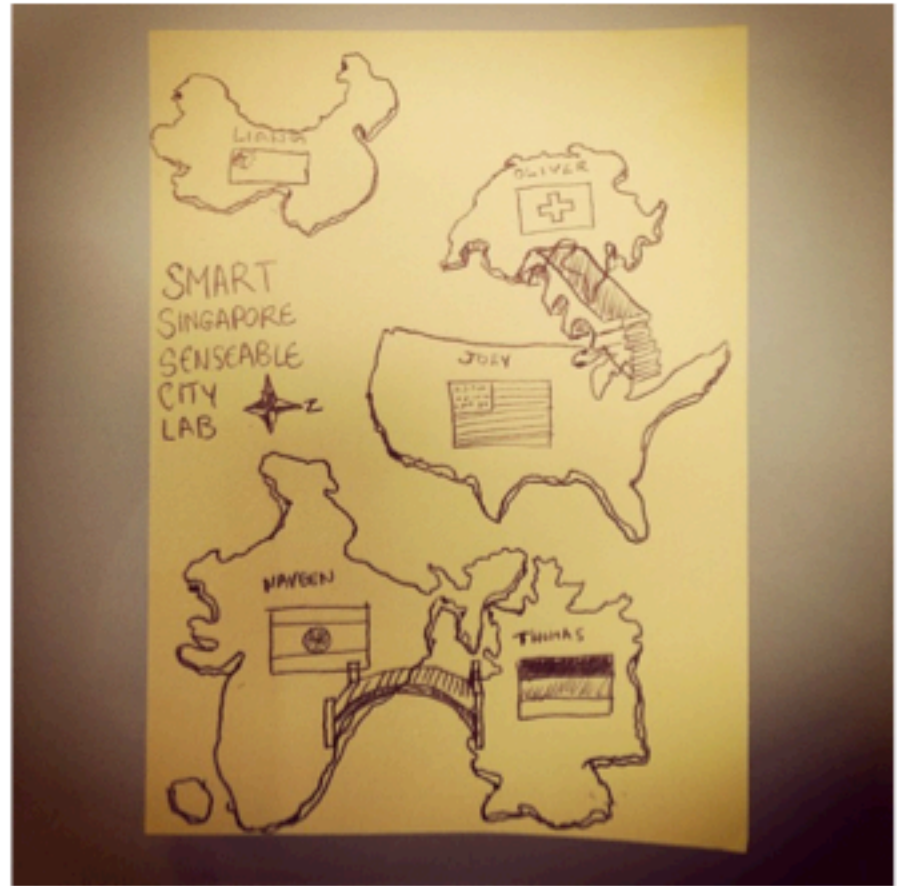
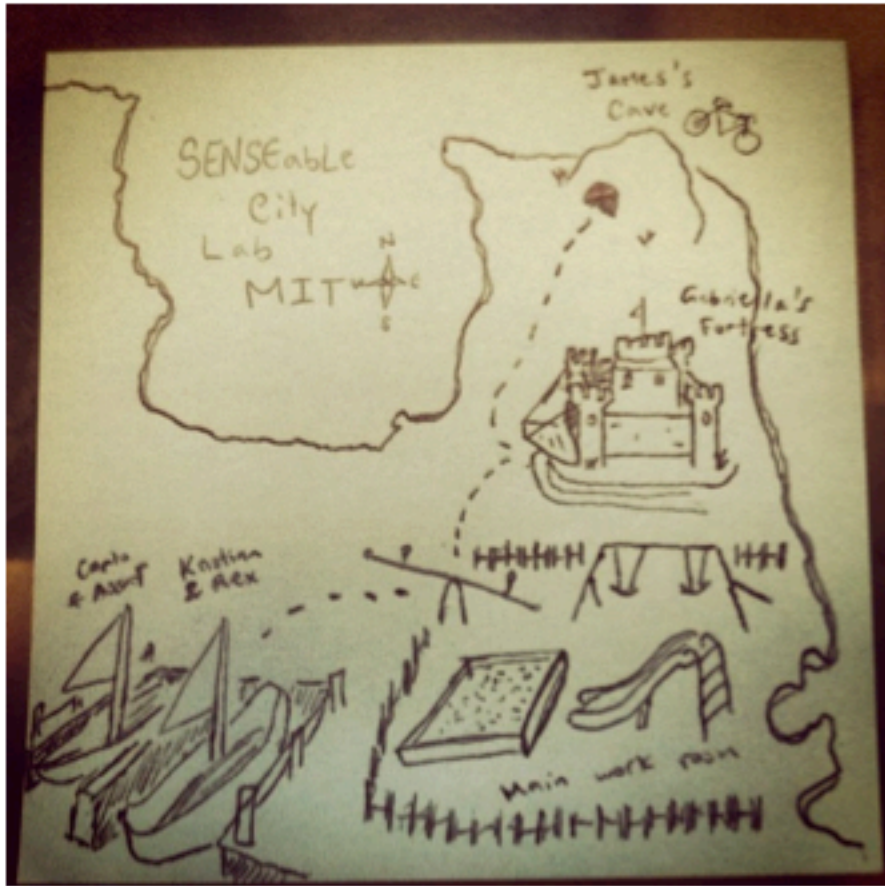


KARTOGRAPH



d3.js

Reading Landscapes



An aerial photograph of a dense residential neighborhood, likely in Los Angeles, showing a grid of streets and numerous houses. Many of the houses have small, rectangular swimming pools highlighted in a bright cyan color. The text "The Big Atlas of LA Pools" is overlaid in the center of the image.

The Big Atlas of LA Pools

**Q:
How many
swimming pools
are in LA?**

As a collaboration, we sought to find out the answer to this seemingly frivolous question...

Interaction Design

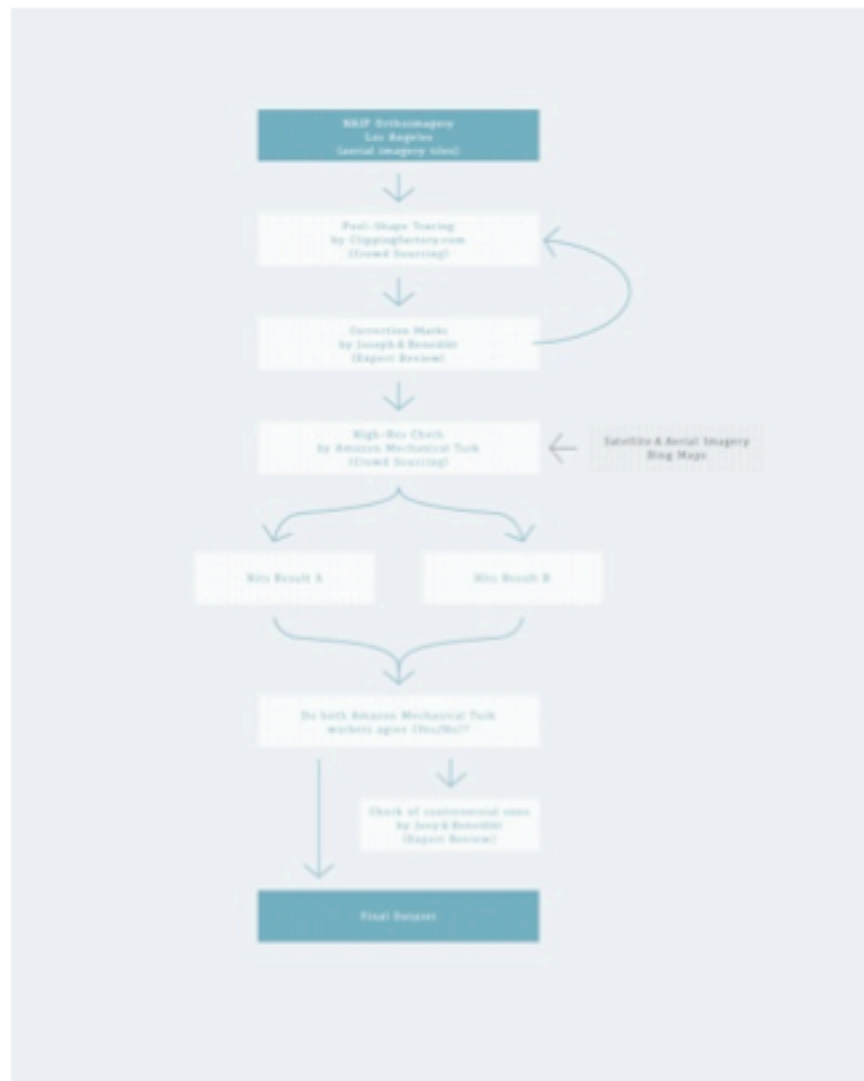


Geography



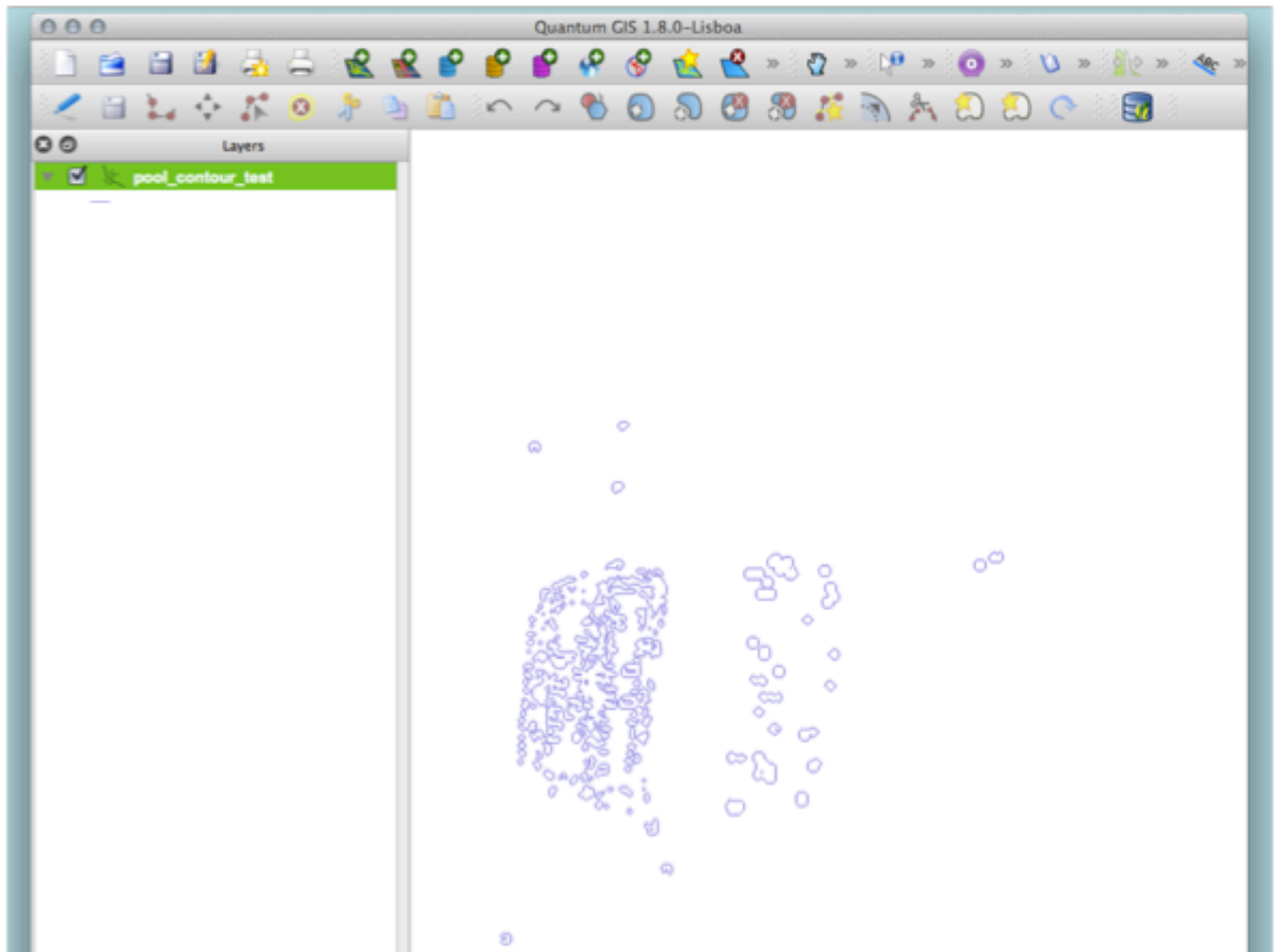
Overview

- Start with ~17gb of aerial imagery of LA
- Computer vision not suitable for task
- “Crowdsourcing”
- Data Enrichment
- Books, Posters, and “The LA Swimmer”





~ 17gb of 4-band orthoimagery from the National Agriculture Imagery Program, USGS



...our pixel detection algorithms were just giving us noise.



Sign Up | Sign In
Delivering excellent results every time.
Payment is only due after you receive your finished images
and are completely satisfied.

- Home
- About Us
- Pricing
- How it Works
- Samples
- Sign Up
- Clipping Path
- Blog
- Charity
- FAQs
- Contact Us



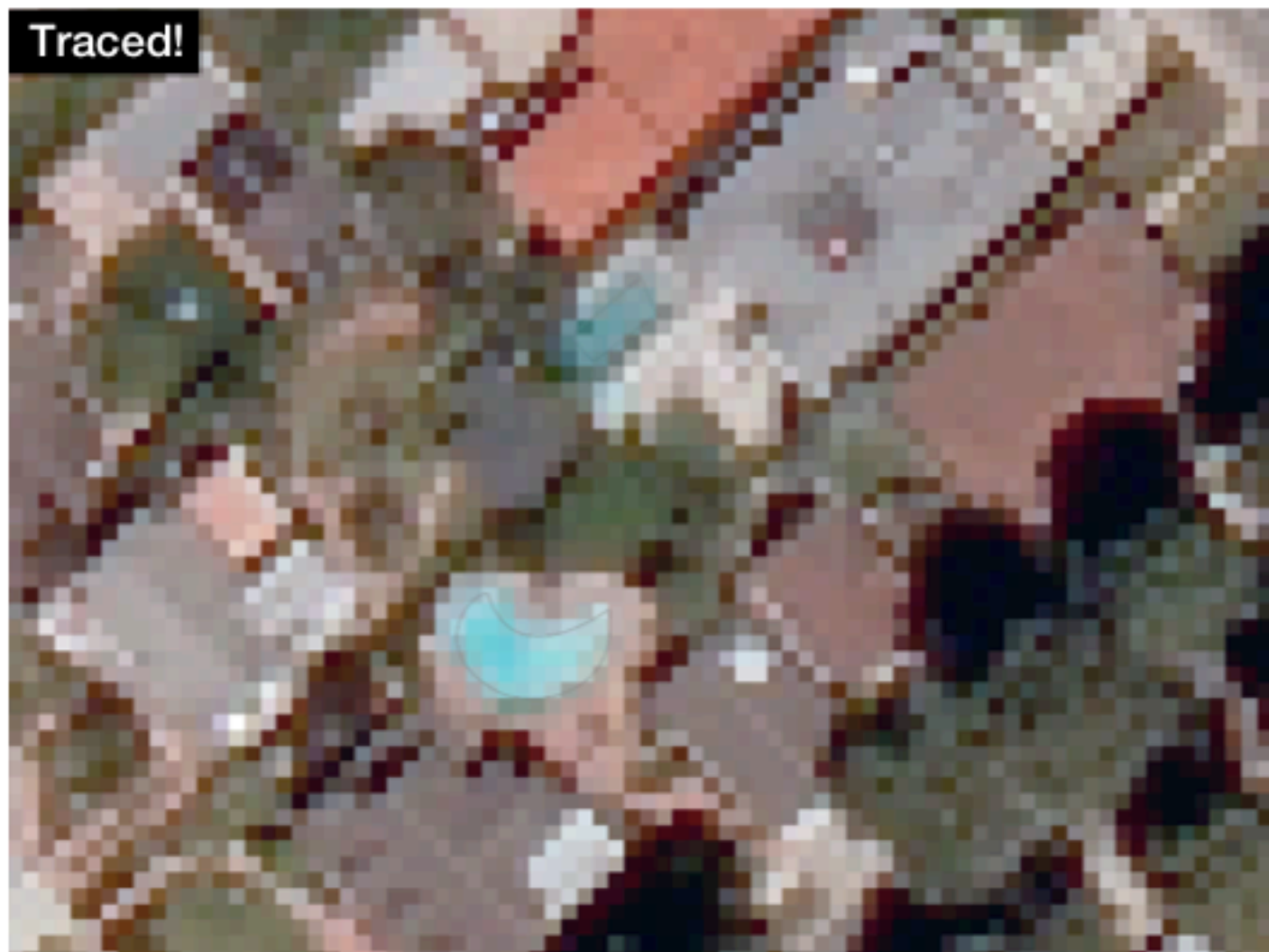
Photoshop clipping path, service and tutorial

Do you need clipping paths in bulk? Have you thought of outsourcing it?

The internet has made the world a single place. Luckily for businesses, that means you can **outsource your graphic needs**, including **all your clipping paths**, at very affordable prices. Having an outsource it graphic design company 24 hours and 7 days a week at your service, is even better than having your own in house studio.

- #### Services we offer
- Clipping Path
 - Image Masking
 - Drop Shadow
 - Mirror Effect

Traced!



Limits of resolution



Google/Bing/Nokia ... Maps

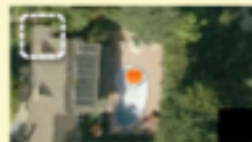


Select images where the pin does not touch a water area (swimming pool, fountain, pond or lake)

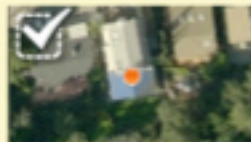
Empty swimming pools and pools which have been covered by a pool cover, should not be flagged. Quicktip: images are clickable



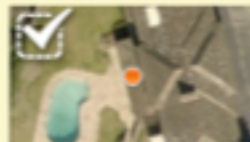
This a pool



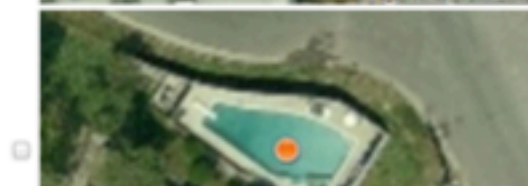
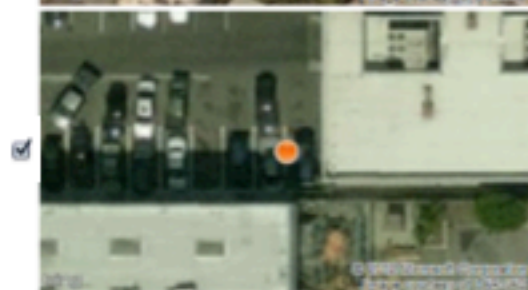
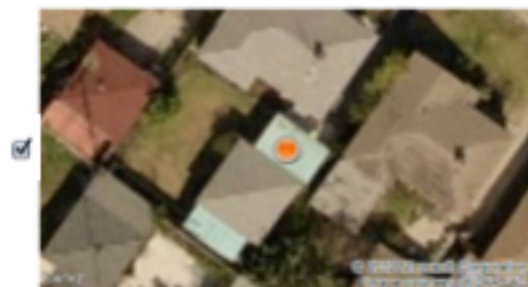
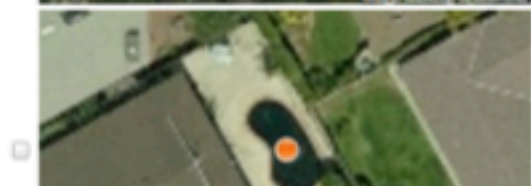
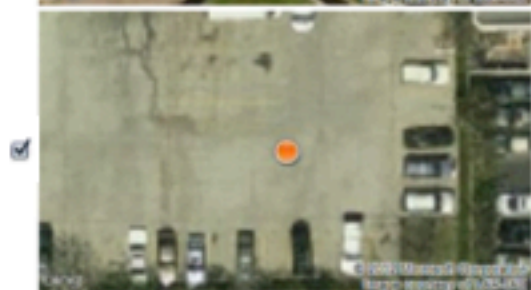
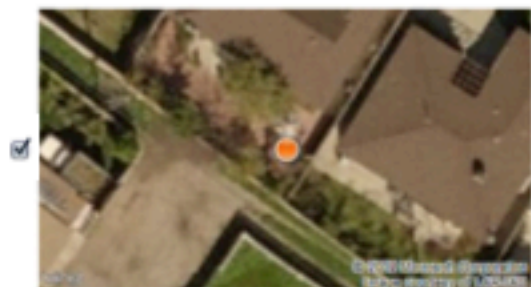
Empty, but still a pool



This is a roof, not a pool



Pin doesn't touch pool



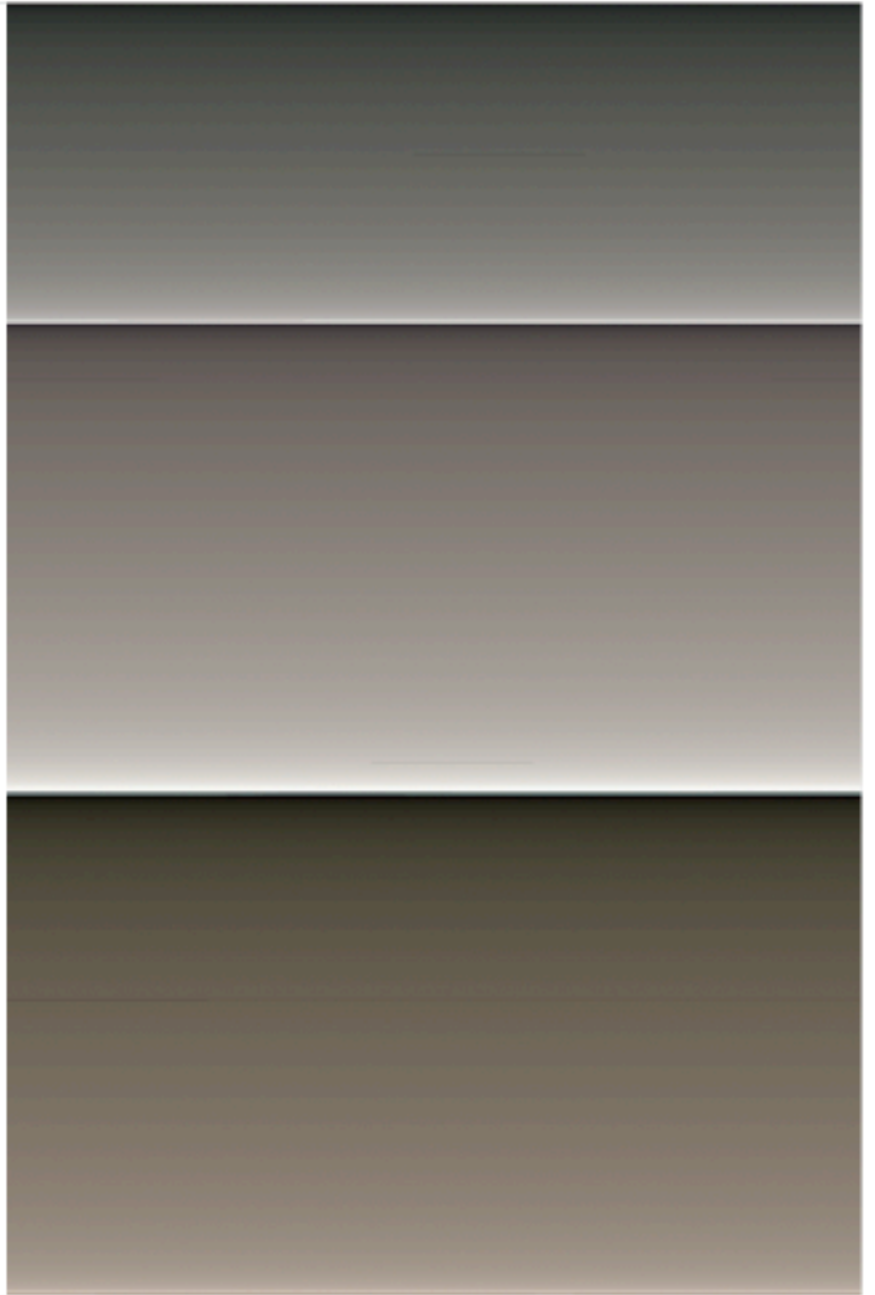
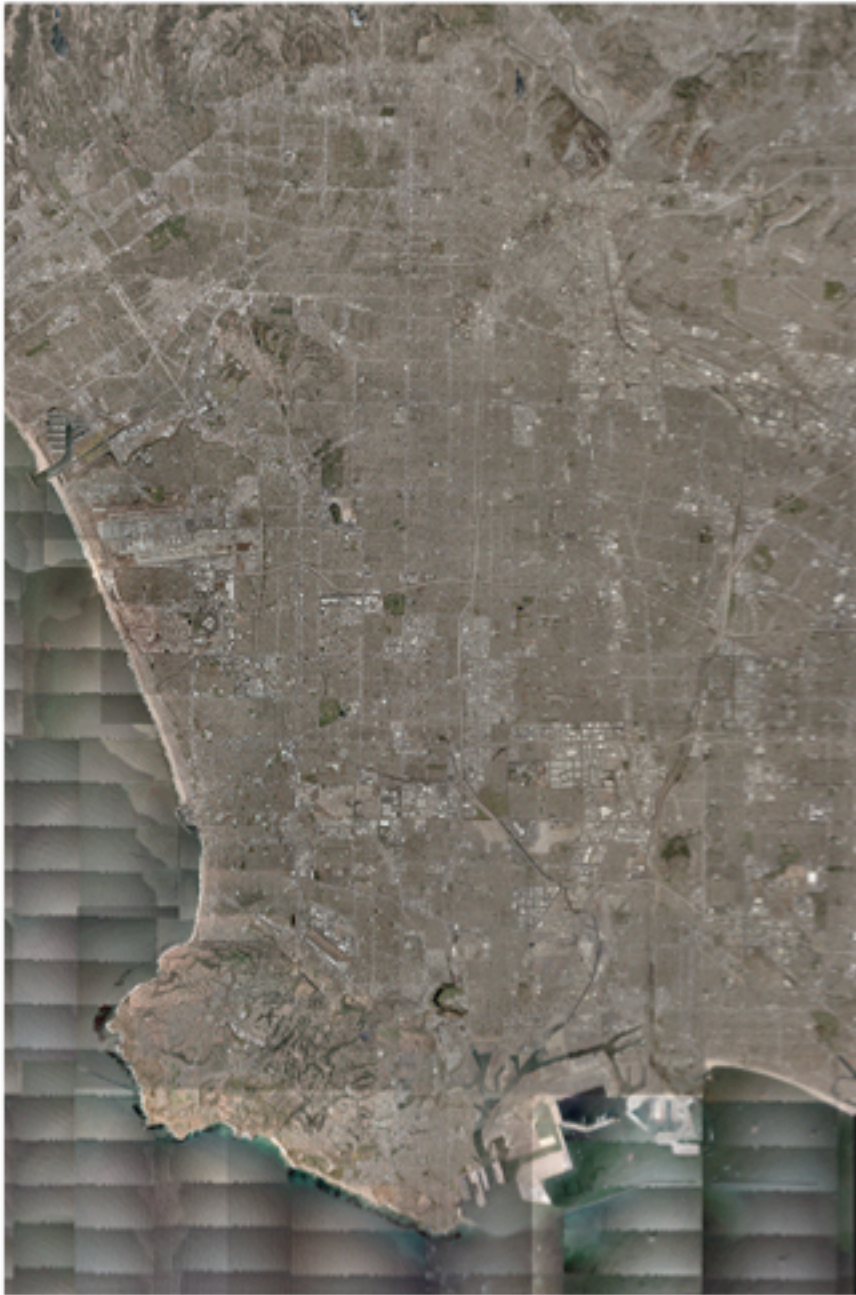
A:

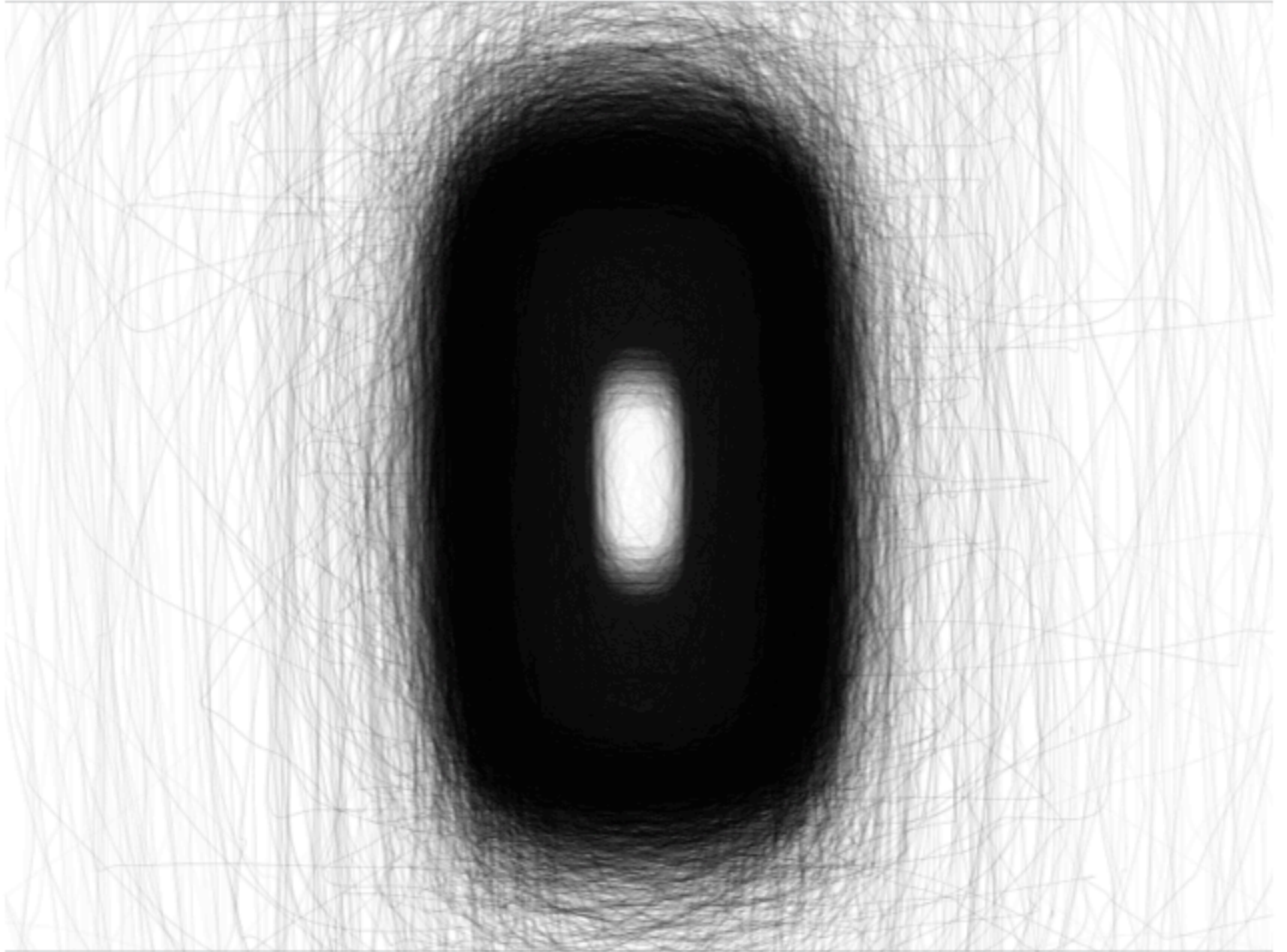
~43123 Pools

Sum Area: 3192640.04 m² (= 3,192 km²)

Maximum Area: 485214,42 m²

Mean: 74,03 m²

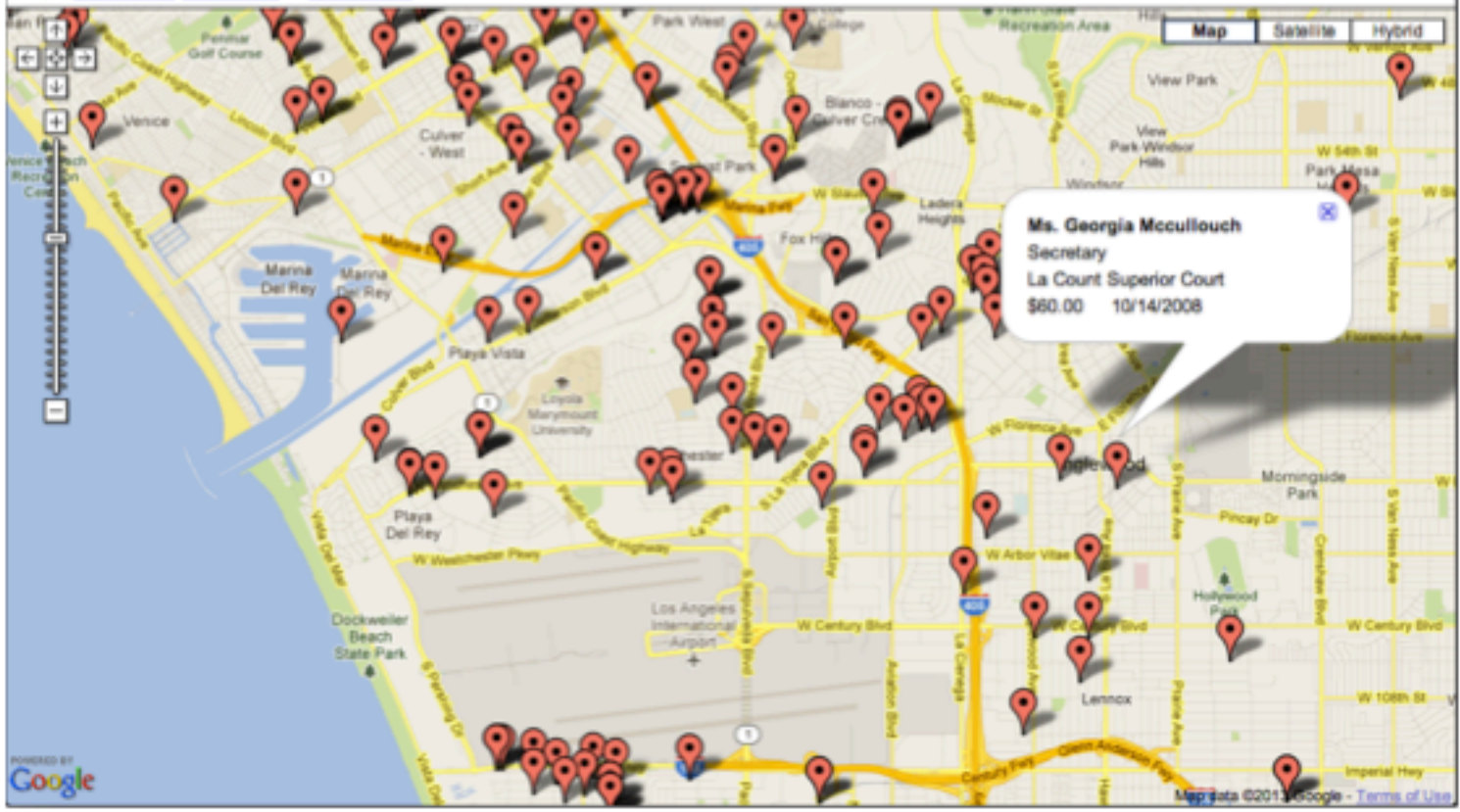




PROP 8 MAPS










A mash-up of [Google Maps](#) and [Prop 8 Donors](#).
Proposition 8 changed the California state constitution to prohibit same-sex marriage.
These are the people who donated in order to pass it.

los angeles Location Search
Jump to [San Francisco](#), [Salt Lake City](#), or [Orange County](#)




Office of the Attorney General • Megan's Law



- In Violation
-  [ABAN, VILLARICO ABAN](#)
[More Info](#)
-  [ABARCA, FRANCISCO](#)
[More Info](#)
-  [ABARCA, NESTOR RO](#)
[More Info](#)
-   [ABAYA, JULIO GENE](#)
[More Info](#)
-  [ABDUL-MALIK, ZAKEE](#)
[More Info](#)
-  [ABELL, TERRY LEROY](#)
[More Info](#)
-  [ABERCROMBIE, THOMAS](#)
[More Info](#)
-   [ABNER, JERRITH LAVAN](#)
[More Info](#)
-  [ABNER, JESSE J](#)
[More Info](#)

www.meganslaw.ca.gov/cgi/prosoma.dll?w6=986334&searchby=offender&id=23210021N4220

Last Name: ABAN First Name: VILLARICO Middle Name: ABAN



Known Aliases
ABAN, VILLARICO MADAMBA
ABAN, RICK

Description
Date of Birth: 01-01-1942
Sex: MALE
Height: 5'3"
Weight: 170
Eye Color: BROWN
Hair Color: BLACK
Ethnicity: HISPANIC

Offenses
Offense Code: 647.6(a)(1)
Description: ANNOY OR MOLEST A CHILD UNDER 18 YEARS OF AGE
Year of Last Conviction:
Year of Last Release:

Risk Assessment
Tool Name:
Score Date:

Specific address not subject to disclosure

[Report Information to DOJ](#)

DOJ is unable to determine if there are any subsequent felony convictions for this registrant at this time.



**The LA Swimmer: 43,123
Pools I Have Never Visited
and Never Will**

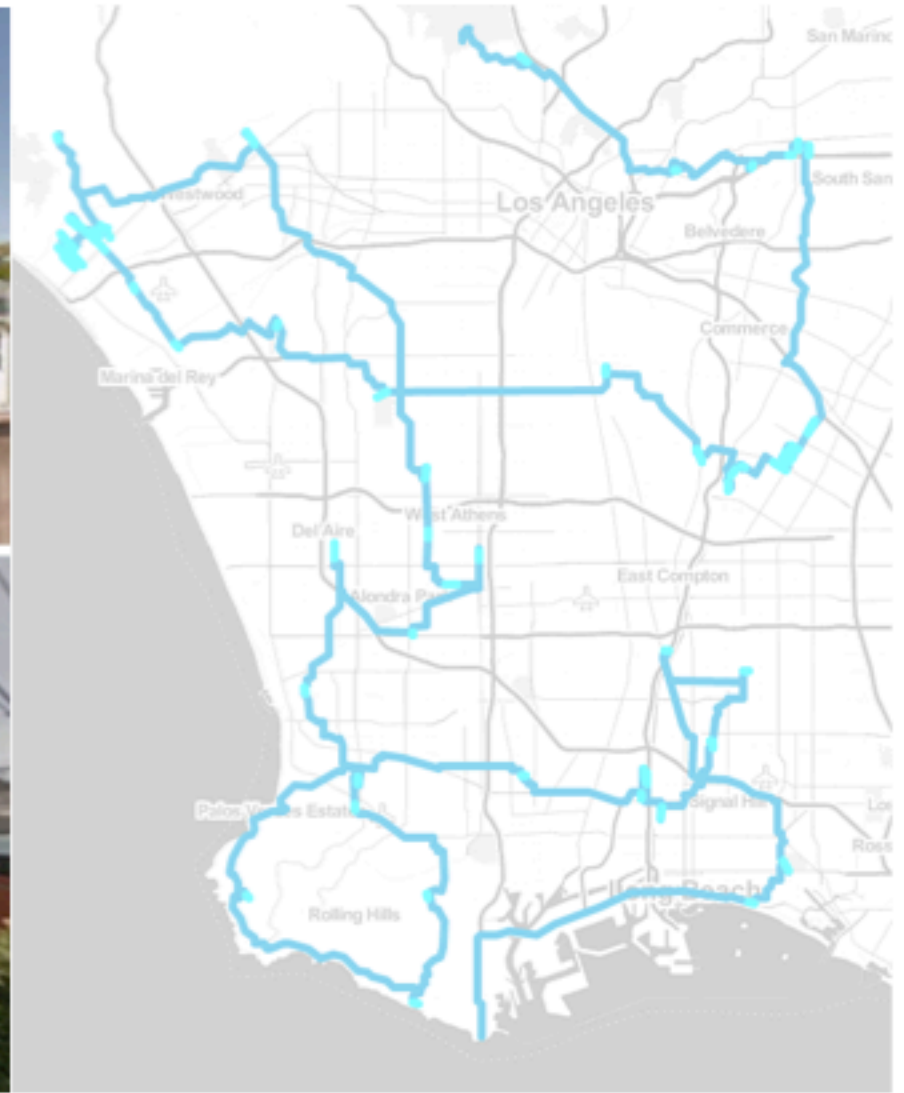
7827 8TH STREET

6.4 m x 11.3 m
65 m²



1309 WEST RAMONA ROAD

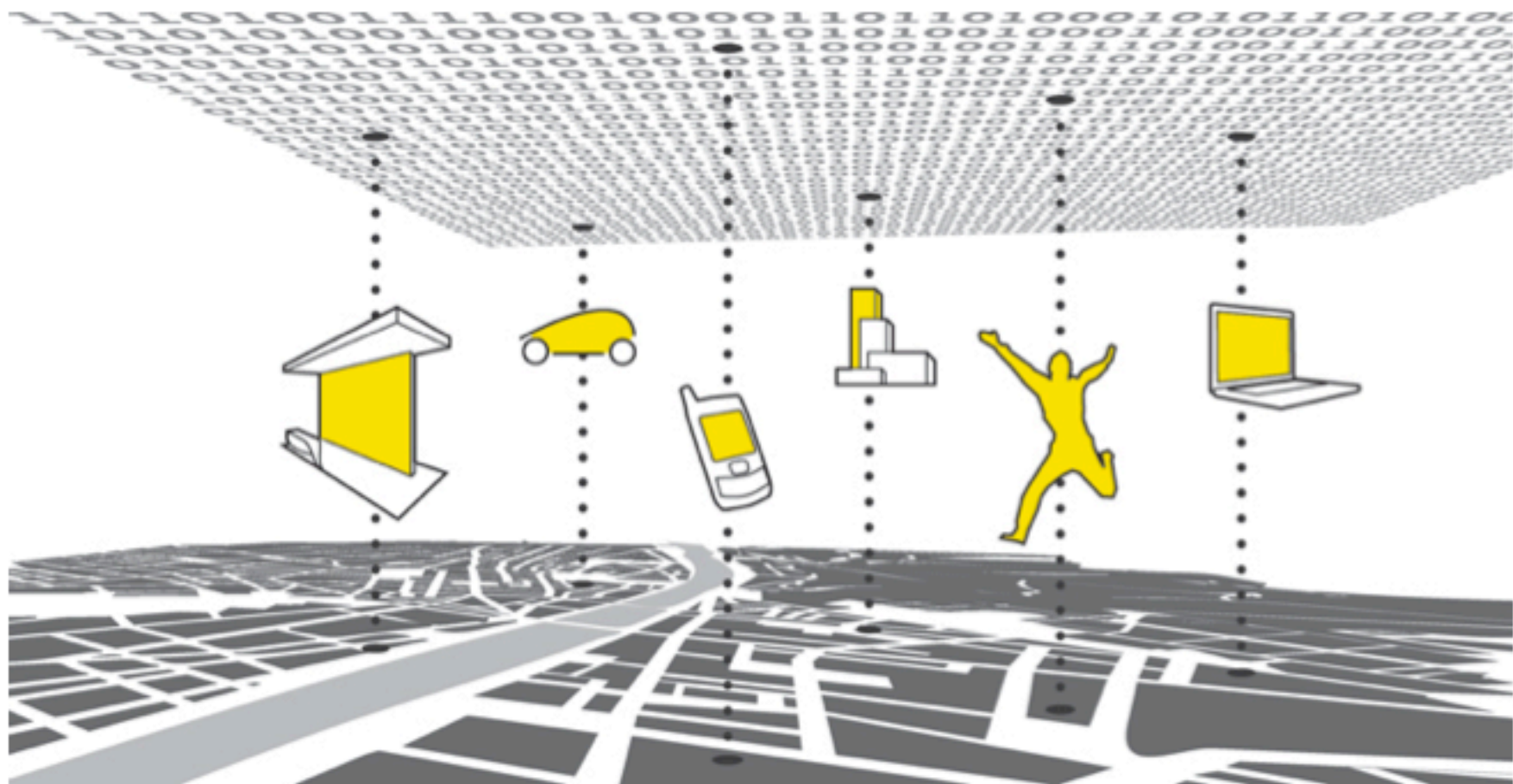
4.6 m x 5.7 m
20 m²



<https://vimeo.com/68121915>

Digital Breadcrumbs: Detecting Urban
Mobility Patterns and transport mode
choices from cell phone networks

The technologies embedded within cities are generating data about the spaces they occupy and the people using them...



LIVE Singapore!

real-time talk

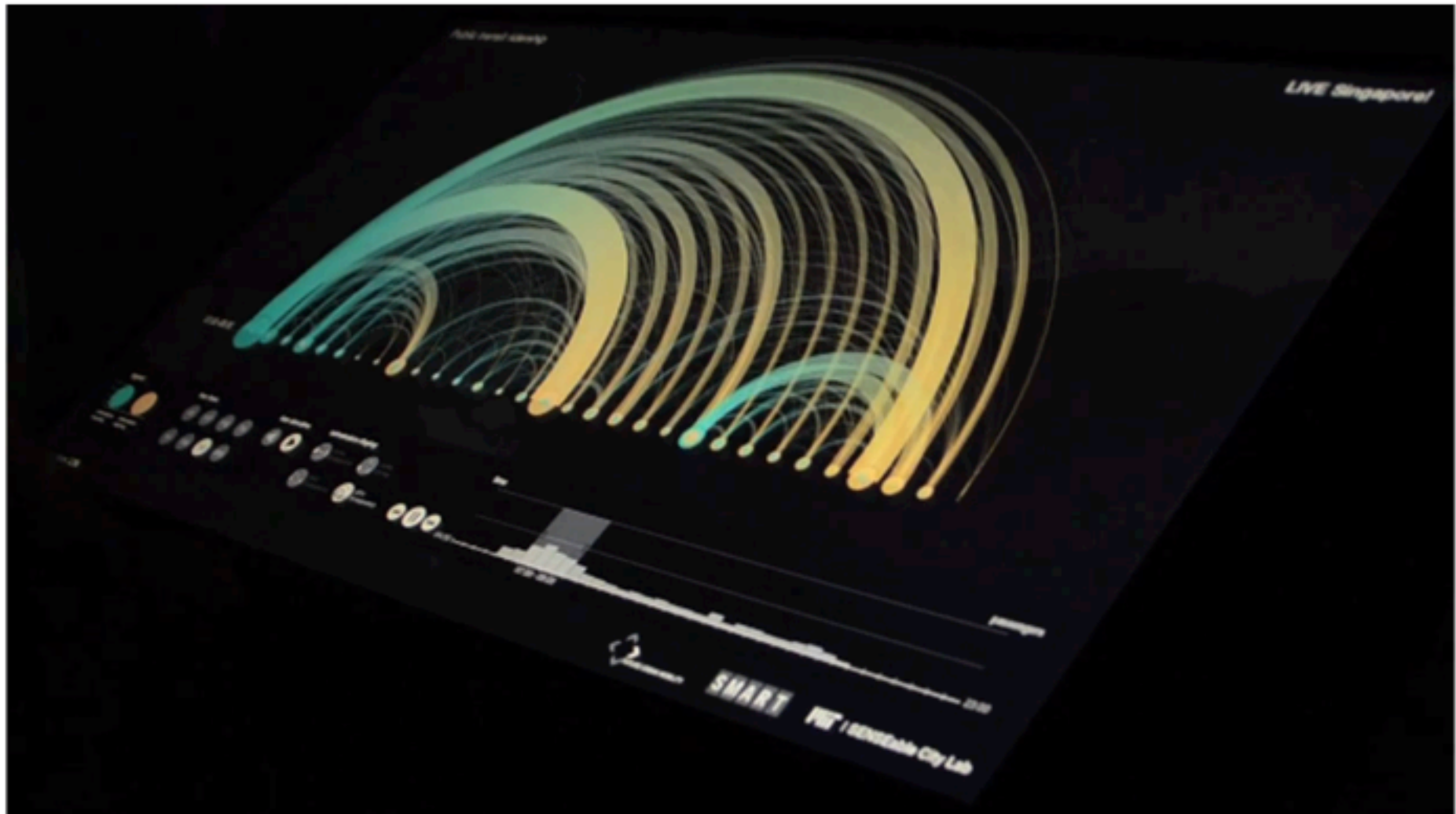
singapore's mobile phone penetration is above 140%, many own more than one device. how do we make use of the island's cellphone network via voice calls and text messages? how can this inform us about the usage of urban space in real-time? find out by looking at this map, where height (logarithmic scale) and color intensity (linear scale) indicate the level of cellphone network usage.

04 april 2011 | 17:15



data sources: SingTel

senseable city lab:::



<http://senseable.mit.edu/visual-explorations-urban-mobility/touching-bus-rides.html>

Inter-district travel and mode choice (public v. private)



(a) Morning (6 am to 10 am).



(b) Mid-day (10 am to 5 pm).

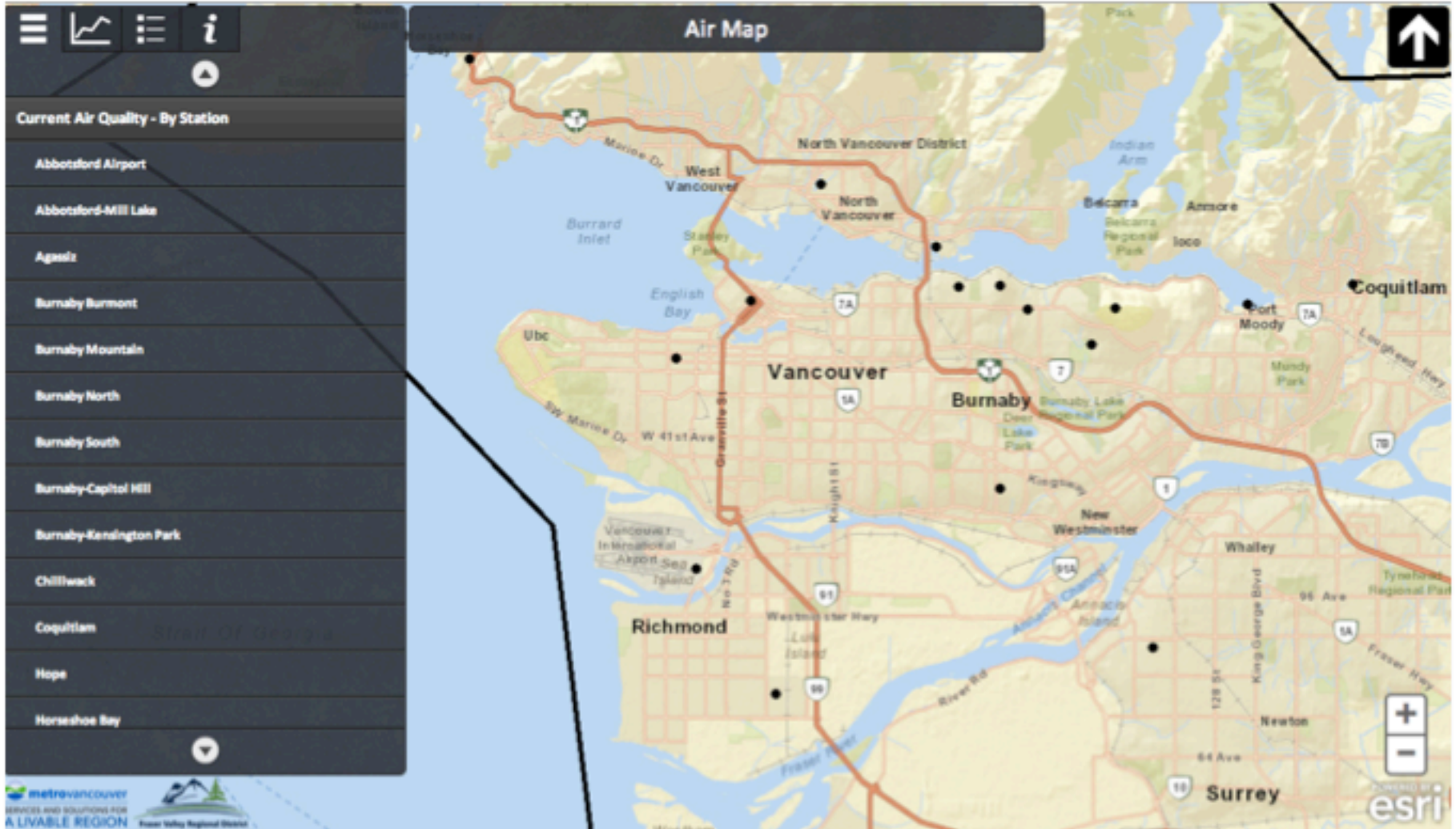


(c) Evening (5 pm to 10 pm).

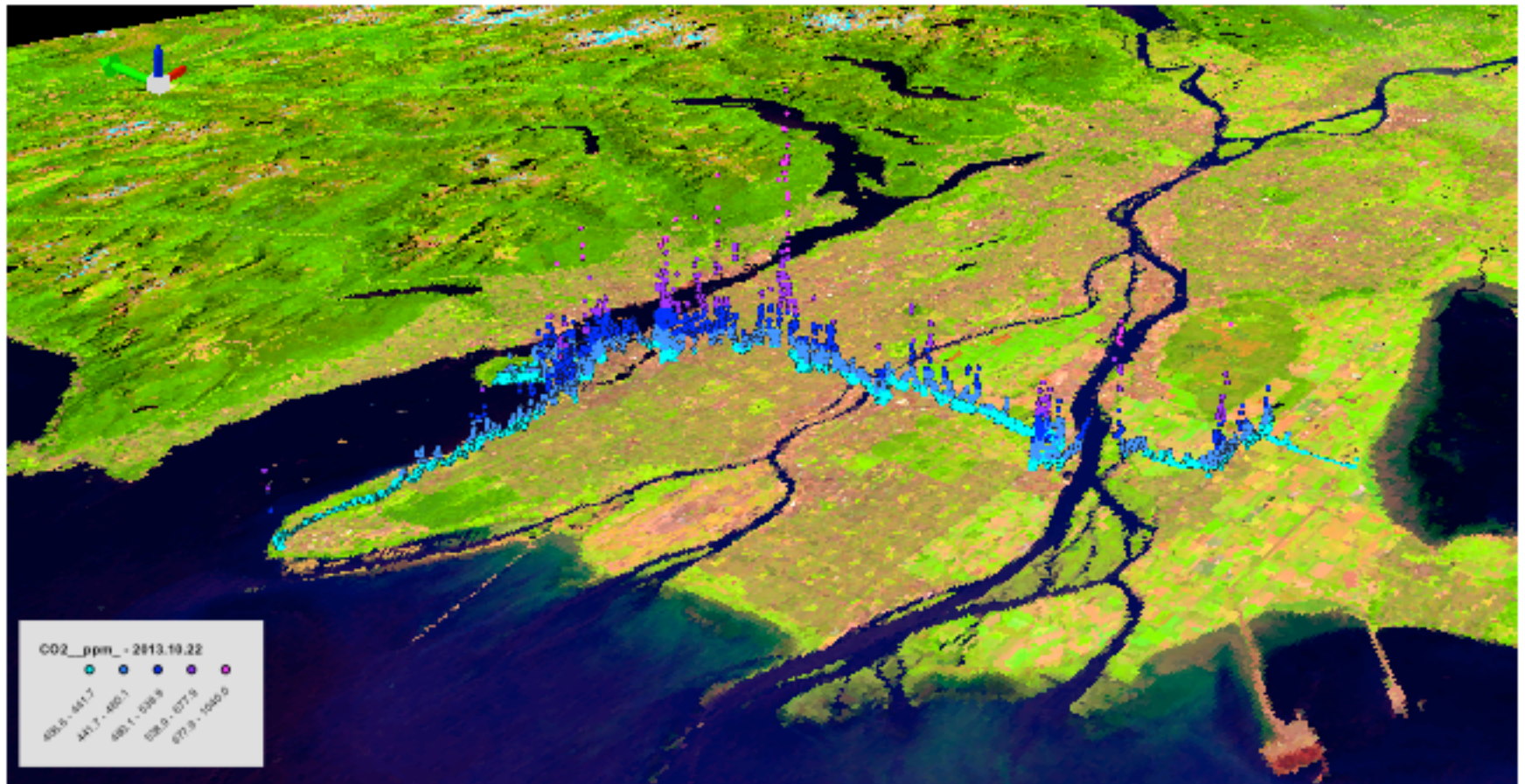
Hollecsek, T., Yu, L., Lee, J., Senn, O., Kloeckl, K., Ratti, C., Jaillet, P. Digital Breadcrumbs: Detecting urban mobility patterns and transport mode choices from cellphone networks. *In prep* 2013.

Writing Landscapes

Pervasive Sensor Networks for
Urban Climate Sensing
(tentative title)



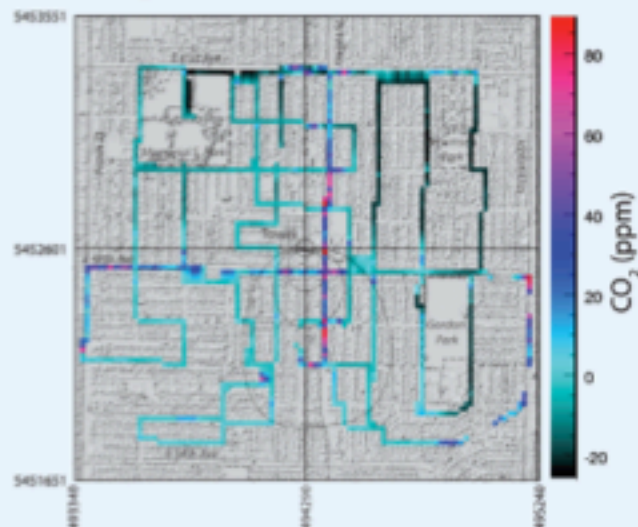
<http://gis.metrovancouver.org/airmap>



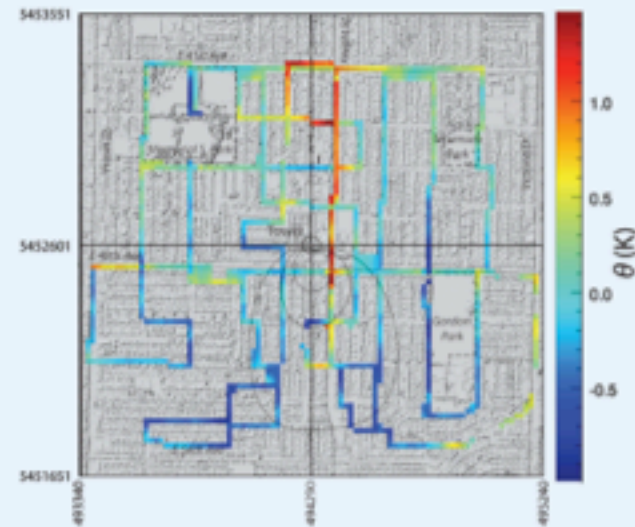
UBC Traverse System – CO2 concentrations (ppm), 2013.10.22

3. Results: Spatial Patterns

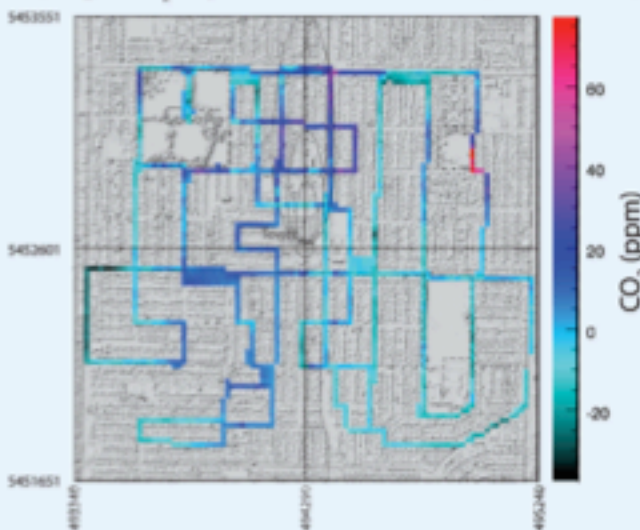
a) Day CO_2 departure from run mean (900-1000 LST)



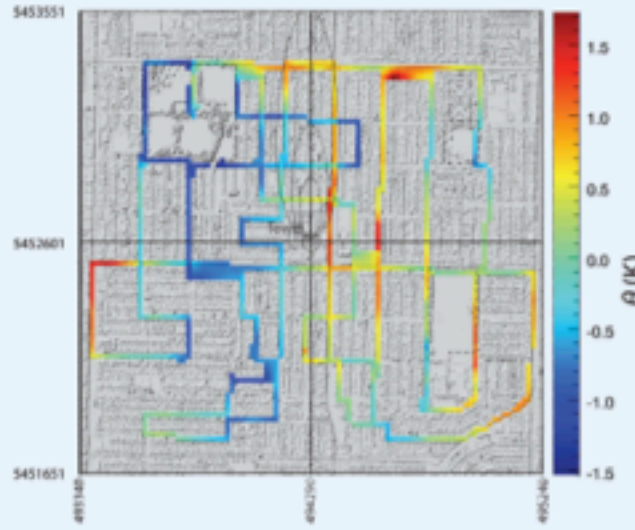
a) Day θ departure from run mean (900-1000 LST)



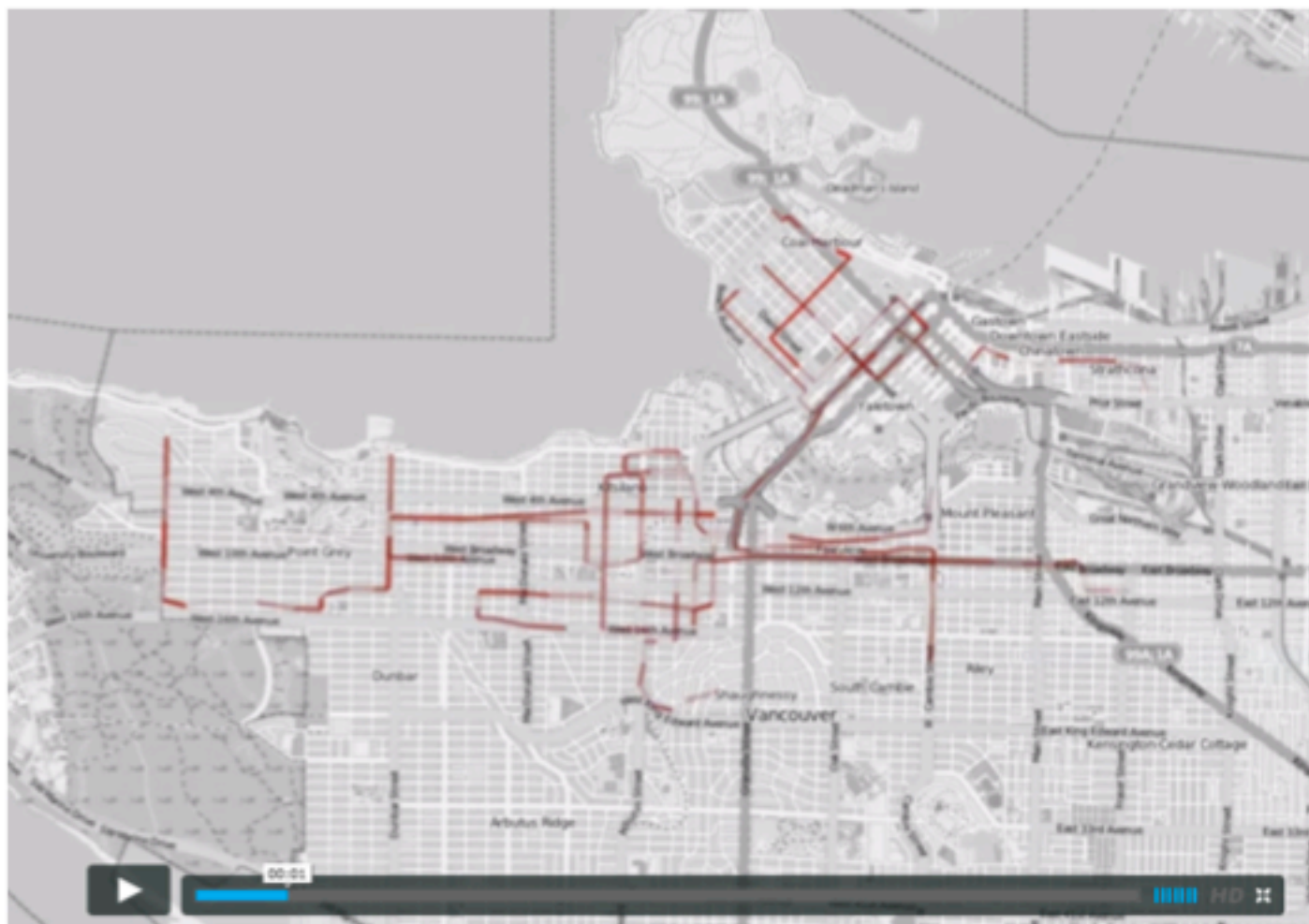
b) Night CO_2 departure from run mean (300-400 LST)



b) Night θ departure from run mean (300-400 LST)



But what if we could measure CO2 continuously across a city?



<http://vimeo.com/75168298>

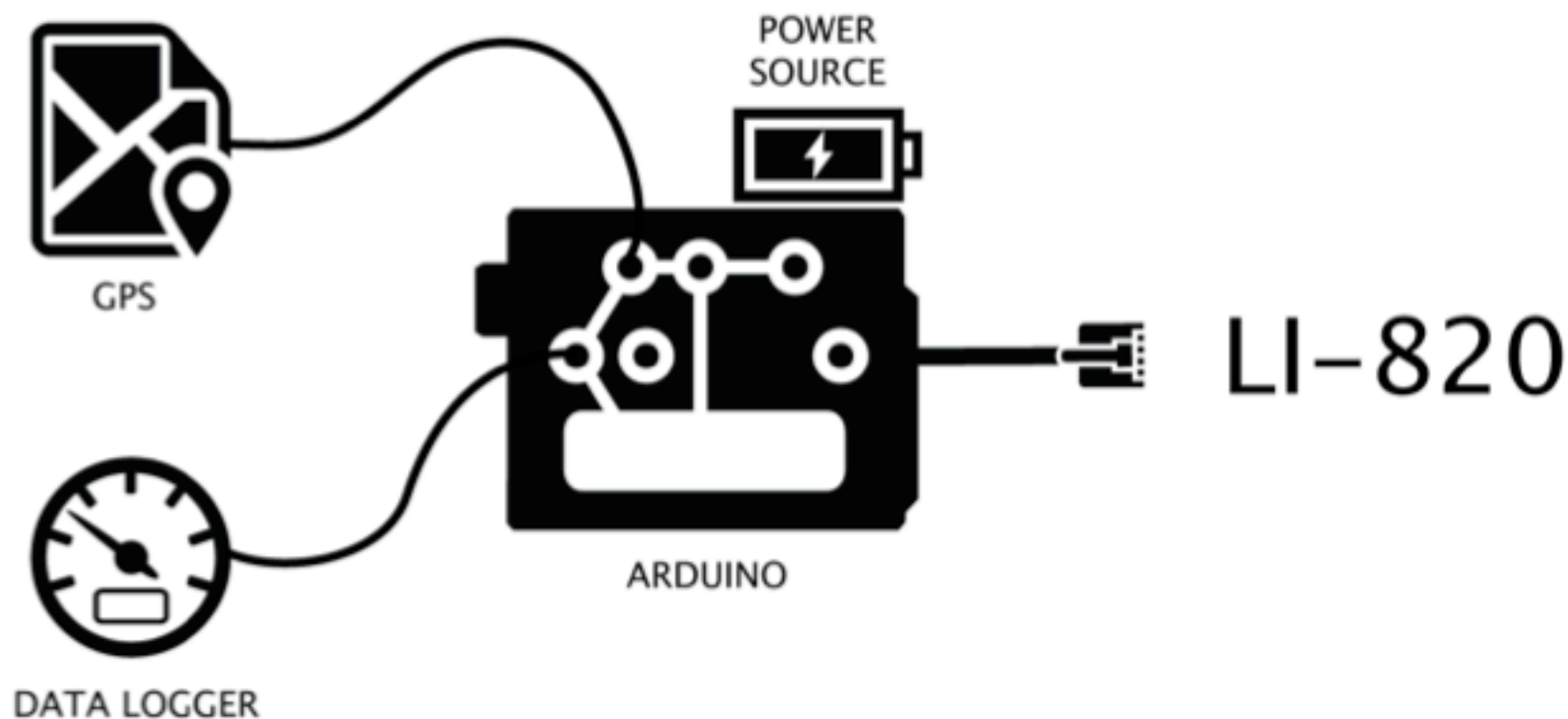
Open sourced development



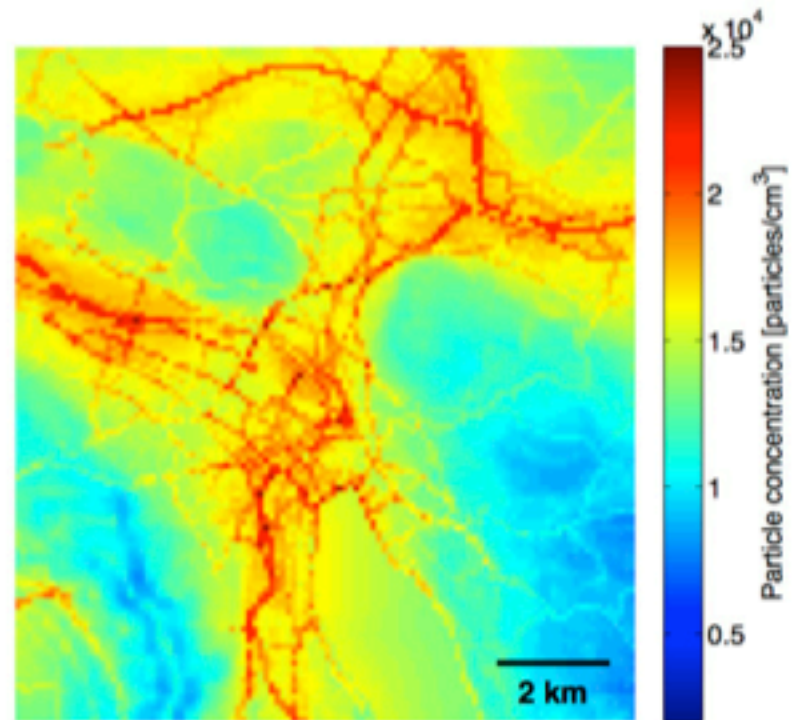
ARDUINO IS AN OPEN-SOURCE ELECTRONICS PROTOTYPING PLATFORM BASED ON FLEXIBLE, EASY-TO-USE HARDWARE AND SOFTWARE. IT'S INTENDED FOR ARTISTS, DESIGNERS, HOBBYISTS AND ANYONE INTERESTED IN CREATING INTERACTIVE OBJECTS OR ENVIRONMENTS.

<http://arduino.cc/>

Prototyping



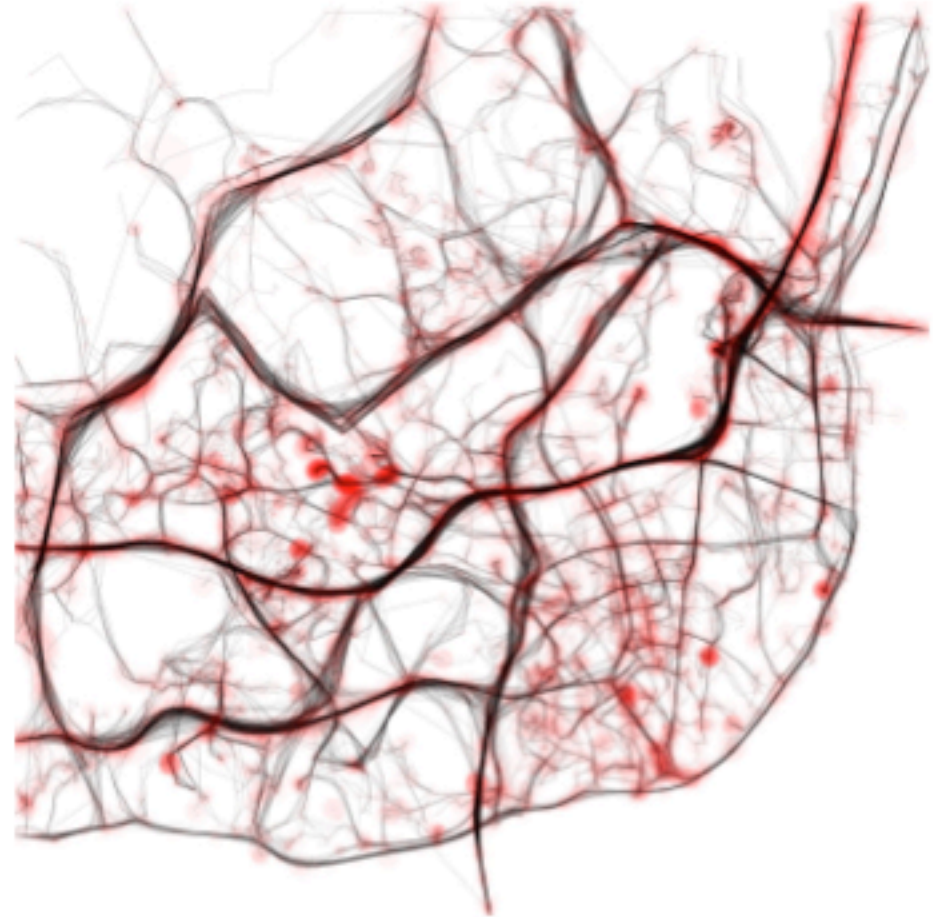
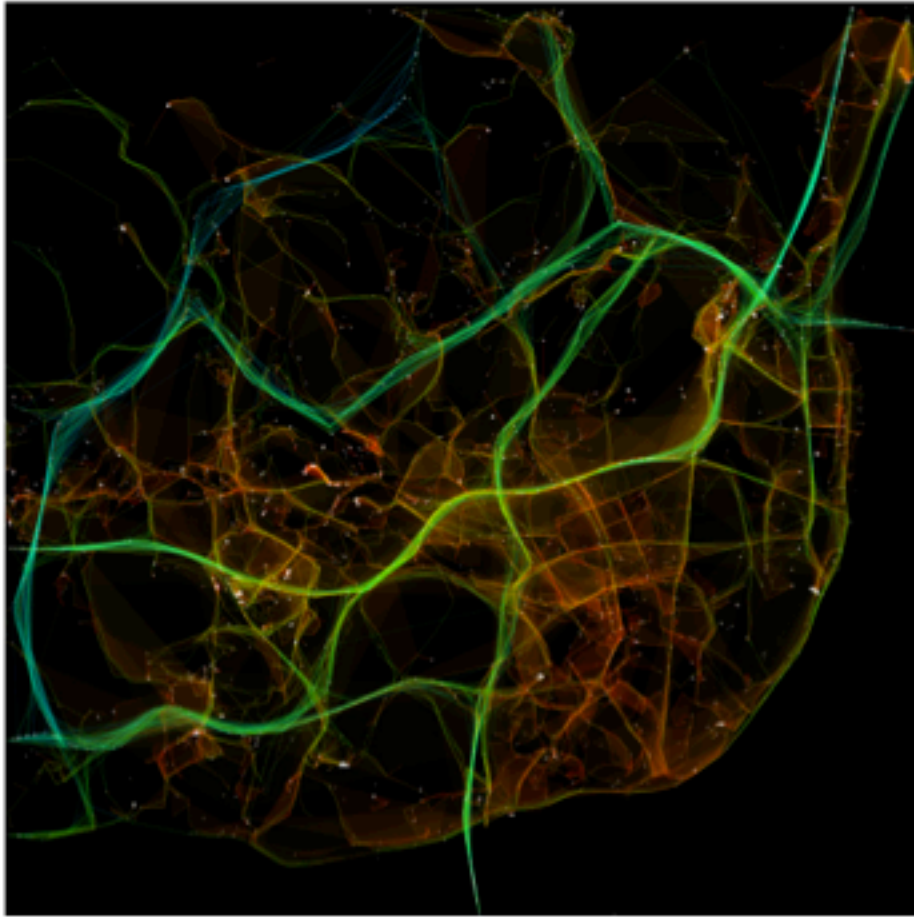
The dream:



OpenSense – ETH Zurich

<http://www.opensense.ethz.ch/trac/>

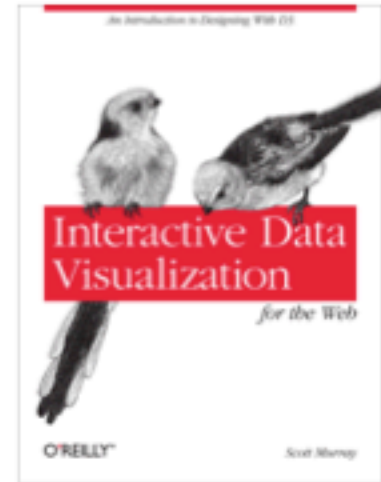
The dream:(continued)



<http://pmcruz.com/>

1.5 years left to finish... So don't hold
your breath 😊

Before I finish...



Takeaways

- You can map anything
- There are lots of tools out there to turn your ideas into reality - programming is for everyone
- Maps are a powerful medium to communicate science
- Collaborate with others!

Thanks!